air pollution control district
SANTA BARBARA COUNTY

DRAFT

Authority to Construct/Permit to Operate 16106 - 02

EQUIPMENT OWNER:

Google, LLC.

EQUIPMENT OPERATOR:

Google, LLC.

EQUIPMENT LOCATION:

301 Mentor Drive, Santa Barbara

STATIONARY SOURCE/FACILITY:

Google - Mentor Drive

SSID: 11399
FID: 11651

EQUIPMENT DESCRIPTION:

Diesel-fired emergency standby engine(s) as listed in the table at the end of this permit.

AUTHORIZED MODIFICATION:

This permit modification authorizes additional daily hours of operation for each permitted engine.

PROJECT/PROCESS DESCRIPTION:

The diesel engine(s) subject to this permit provide electrical backup power in times of emergencies as defined by the State's *Airborne Toxics Control Measure for Stationary Compression Ignition Engines* (ATCM). This ATCM (CCR Section 93115, Title 17) limits annual engine maintenance and testing hours (as listed for each engine in the equipment list) with no limitation for emergency use. Definitions of the terms "*maintenance and testing*" and "*emergency use*" are found in the ATCM and the District's webpage at http://www.ourair.org/dice-atcm/.

CONDITIONS:

1. **Emission Limitations.** The mass emissions from the equipment permitted herein shall not exceed the values listed in Table 1. Emissions of PM and other pollutants shall not exceed the emissions standards listed in Table 2 of this permit. Compliance shall be based on the operational, monitoring, recordkeeping and reporting conditions of this permit.

2. **Operational Restrictions.** The equipment permitted herein is subject to the following operational restrictions. The equipment may operate as many hours as necessary for emergency use, as defined in the ATCM[1].

   a. Maintenance & Testing Use Limit: The stationary emergency standby diesel-fueled engine(s), except for in-use firewater pump engines, shall not be operated for more than the hours listed in the attached equipment list for maintenance and testing[2] purposes.

   b. Impending Rotating Outage Use: The stationary emergency standby diesel-fueled engine(s) may be operated in response to the notification of an impending rotating outage if all the conditions cited in the ATCM are met.

   c. Fuel and Fuel Additive Requirements: The permittee may only add fuel and/or fuel additives that comply with the ATCM to the engine or to any fuel tank directly attached to the engine.

   d. Diesel Fuel Sulfur Limit. The total sulfur content of the diesel fuel used shall not exceed 15 ppmw in accordance with the requirements of the Stationary Diesel Engine ATCM for CARB diesel.

   e. Near School Provisions: The stationary emergency standby diesel-fueled engine(s) shall not be operated for non-emergency use, including maintenance and testing, whenever there is a school sponsored activity, nor shall it be operated between 7:30 a.m. and 3:30 p.m. on days school is in session.

   f. Tier 4 Final Emissions Control Systems: All emission control systems associated with the Tier 4 Final engine(s) shall be maintained and operated in accordance with manufacturer operating procedures. Any reagent used by the Selective Catalytic Reduction (SCR) system shall be maintained above the minimum required level necessary to control emissions when the engine is operating.

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[1] As used in the permit, "ATCM" means Section 93115, Title 17, California Code of Regulations. Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engines

[2] "maintenance and testing" is defined in the ATCM and may also be found on the District webpage at http://www.ourair.org/wp-content/uploads/ES_MT_DICE_Definitions.pdf

3. **Monitoring.** The equipment permitted herein is subject to the following monitoring requirements:

   a. Non-Resettable Hour Meter: Each stationary emergency standby diesel-fueled engine(s) shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District has determined (in writing) that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history.

   b. The emission control systems associated with the Tier 4 Final engine(s) shall be monitored to ensure compliance with Condition 2.f.

4. **Recordkeeping.** The permittee shall record and maintain the information listed below. Log entries shall be retained for a minimum of 36 months from the date of entry. Log entries made within 24 months of the most recent entry shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request. Log entries made from 25 to 36 months from most recent entry shall be made available to District staff within 5 working days from request. District Form ENF-92 (*Diesel-Fired Emergency Standby Engine Recordkeeping Form*) can be used for this requirement.

   a. emergency use hours of operation.

   b. maintenance and testing hours of operation.

   c. hours of operation for emission testing to show compliance with the ATCM {if specifically allowed for under this permit}.

   d. initial startup hours.

   e. hours of operation for all uses other than those specified in items (a) – (d) above along with a description of what those hours were for.

   f. fuel purchase records that demonstrate that only fuel meeting the requirements of the ATCM is purchased and added to each emergency standby engine, or to any fuel tank directly attached to each emergency standby engine.

5. **Reporting.** By March 1 of each year, a written report documenting compliance with the terms and conditions of this permit and the ATCM for the previous calendar year shall be provided by the permittee to the District (Attn: *Annual Report Coordinator*). All logs and other basic source data not included in the report shall be made available to the District upon request. The report shall include the information required in the Recordkeeping Condition above.

6. **Best Available Control Technology.** The permittee shall apply emission control technology and plant design measures that represent Best Available Control Technology ("BACT") to the operation of the equipment/facilities as described in this permit and the District's Permit Evaluation for this permit. Table 3 and the Emission Limitations, Operational Restrictions, Monitoring, Recordkeeping and Reporting Conditions of this permit define the specific control technology and performance standard emission limits for BACT. The BACT shall be in place, and shall be operational at all times, for the life of the project. BACT related monitoring, recordkeeping and reporting requirements are defined in those specific permit conditions.

7. **Source Testing.** The following source testing provisions shall apply:

   a. The permittee shall conduct source testing of air emissions and process parameters listed in Table 4 of this permit upon District request.

   b. The permittee shall submit a written source test plan to the District (email to sourcetest@sbcapcd.org) for approval at least thirty (30) calendar days prior to initiation of each source test. The source test plan shall be prepared consistent with the District's *Source Test Procedures Manual* (revised May 1990 and any subsequent revisions). This plan shall include a technical evaluation on how the engine will be tested at the maximum safest load. The permittee shall obtain written District approval of the source test plan prior to commencement of source testing. The District shall be notified at least ten (10) calendar days prior to the start of source testing activity to arrange for a mutually agreeable source test date when District personnel may observe the test.

   c. Source test results shall be submitted to the District within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements approved within the source test plan. Source test results shall document Google's compliance status with mass emission rates in Table 1 and applicable permit conditions, and rules. All District costs associated with the review and approval of all plans and reports and the witnessing of tests shall be paid by the permittee as provided for by District Rule 210.

   d. A source test for an item of equipment shall be performed on the scheduled day of testing (the test day mutually agreed to) unless circumstances beyond the control of the operator prevent completion of the test on the scheduled day. Such circumstances include mechanical malfunction of the equipment to be tested, malfunction of the source test equipment, delays in source test contractor arrival and/or set-up, or unsafe conditions on site. Except in cases of an emergency, the operator shall seek and obtain District approval before deferring or discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day. Once the sample probe has been inserted into the exhaust stream of the equipment unit to be tested (or extraction of the sample has begun), the test shall proceed in accordance with the approved source test plan. In no case shall a test run be aborted except in the case of an emergency or unless approval is first obtained from the District. If the test cannot be completed on the

scheduled day, then the test shall be rescheduled for another time with prior authorization by the District. Failing to perform the source test of an equipment item on the scheduled test day without a valid reason and without District's authorization shall constitute a violation of this permit. If a test is postponed due to an emergency, written documentation of the emergency event shall be submitted to the District by the close of the business day following the scheduled test day.

The timelines in (a), (b), and (c) above may be extended for good cause provided a written request is submitted to the District at least three (3) days in advance of the deadline, and approval for the extension is granted by the District.

8. **Temporary Engine Replacements - DICE ATCM.** Any reciprocating internal combustion engine subject to this permit and the stationary diesel ATCM may be temporarily replaced only if the requirements (a – h) listed herein are satisfied.

   a. The permitted engine that is being temporarily replaced is in need of routine repair or maintenance.

   b. The permitted engine does not have a cracked block, unless the block will be replaced under manufacturer's warranty.

   c. Replacement parts are available for the permitted engine.

   d. The permitted engine is returned to its original service within 180 days of installation of the temporary engine.

   e. The temporary replacement engine has the same or lower manufacturer rated horsepower and same or lower potential to emit of each pollutant as the permitted engine. At the written request of the permittee, the District may approve a replacement engine with a larger rated horsepower if the proposed temporary engine has manufacturer guaranteed emissions (for a brand new engine) or source test data (for a previously used engine) less than or equal to the permitted engine.

   f. The temporary replacement engine shall comply with all rules and permit requirements that apply to the permitted engine.

   g. For each permitted engine to be temporarily replaced, the permittee shall submit a completed *Temporary IC Engine Replacement Notification* form (Form ENF-94) within 14 days of the temporary engine being installed. This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

   h. Within 14 days of returning the original permitted engine to service, the permittee shall submit a completed *Temporary IC Engine Replacement Report* form (Form ENF-95).

This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

Any engine in temporary replacement service shall be immediately shut down if the District determines that the requirements of this condition have not been met. If the requirements of this condition are not met, the permittee must obtain an ATC before installing or operating a temporary replacement engine.

9. **Permanent Engine Replacements.** The permittee may install a new engine in place of an engine permitted herein without first obtaining an ATC only if the requirements (a – f) listed herein are satisfied.

   a. The permitted stationary diesel-fueled engine is an E/S engine, a firewater pump engine or an engine used for an essential public service (as defined by the District).

   b. The permitted engine breaks down, cannot be repaired, and needs to be replaced by a new permanent engine.

   c. The facility provides "good cause" (in writing) for the need to install a new permanent engine before an ATC can be obtained for a new engine.

   d. The new permanent engine must comply with the requirements of the ATCM for new engines. A temporary replacement engine may be used while the new permanent engine is being procured only if it meets the requirements of the *Temporary Engine Replacements - DICE ATCM* permit condition.

   e. An ATC application for the new permanent engine must be submitted to the District within 15 days of the existing engine being replaced and the ATC must be obtained no later than 180 days from the date of engine replacement (these timelines include the use of a temporary engine).

   f. For each new permanent engine installed pursuant to this condition, the permittee shall submit a completed *Permanent IC Engine Replacement Notification* form (Form ENF-96) within 14 days of the new engine being installed. This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

   Any engine installed pursuant to this condition shall be immediately shut down if the District determines that the requirements of this condition have not been met.

10. **Notification of Non-Compliance.** Owners or operators who have determined that they are operating their stationary diesel-fueled CI engine(s) in violation of the requirements specified in the ATCM shall notify the District immediately upon detection of the violation and shall be subject to District enforcement action.

11. **Notification of Loss of Exemption.** Owners or operators of in-use stationary diesel-fueled CI engines who are exempt from all or part of the requirements of the ATCM shall notify the District within five days after they become aware that the exemption no longer applies and shall demonstrate compliance within 180 days after the date the exemption no longer applies.

12. **Enrollment in a DRP/ISC.** Owners or operators shall obtain an ATC before enrolling a stationary diesel-fueled CI engine rated over 50 bhp in a Demand Response Program/Interruptible Service Contract (as defined in the ATCM) for the first time.

13. **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the District's project file) and the District's analyses under which this permit is issued as documented in the Permit Evaluation prepared for and issued with the permit.

14. **Equipment Maintenance.** The equipment listed in this permit shall be properly maintained and kept in good condition at all times. The equipment manufacturer's maintenance manual, maintenance procedures and/or maintenance checklists (if any) shall be kept on site.

15. **Compliance.** Nothing contained within this permit shall be construed as allowing the violation of any local, state or federal rules, regulations, air quality standards or increments.

16. **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force.

17. **Conflict Between Permits.** The requirements or limits that are more protective of air quality shall apply if any conflict arises between the requirements and limits of this permit and any other permitting actions associated with the equipment permitted herein.

18. **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the District or its agents, the permittee shall make such records available or provide access to such facilities upon notice from the District. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.

19. **Equipment Identification.** Identifying tag(s) or name plate(s) shall be displayed on the equipment to show manufacturer, model number, and serial number. The tag(s) or plate(s) shall be issued by the manufacturer and shall be affixed to the equipment in a permanent and conspicuous position.

20. **Emission Factor Revisions.** The District may update the emission factors for any calculation based on USEPA AP-42 or District emission factors at the next permit modification or permit reevaluation to account for USEPA and/or District revisions to the underlying emission factors.

21. **Transfer of Owner/Operator.** This permit is only valid for the owner and operator listed on this permit unless a *Transfer of Owner/Operator* application has been applied for and received by the District. Any transfer of ownership or change in operator shall be done in a manner as specified in District Rule 203. District Form –01T and the appropriate filing fee shall be submitted to the District within 30 days of the transfer.

22. **Initial Operations and District Inspection.** The permittee shall:

    a. Within 14 days of initial operations, the permittee shall provide the District written notification of the initial operations start date using the attached yellow Startup Notification card or by e-mail to enfr@sbcapcd.org.

    b. Arrange for equipment inspection by calling the District's Compliance Manager at (805) 979-8050 or via e-mail to enfr@sbcapcd.org no later than fourteen (14) calendar days after initial operations commence. The equipment inspection shall occur not more than thirty (30) calendar days (or other mutually agreed upon time period) after initial operations begin. The Compliance Division may waive this inspection requirement if an initial inspection is deemed unnecessary to verify that the modifications authorized by this permit are in compliance with District rules and permit conditions.

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AIR POLLUTION CONTROL OFFICER

_____

DATE

Attachments:

- Table 1 – Mass Emission Limits
- Table 2 – Emission Standards
- Table 3 – Best Available Control Technology Requirements
- Table 4 – Source Testing Requirements
- Permit Equipment List
- Permit Evaluation for Authority to Construct/Permit to Operate Modification 16106-02

Notes:

- ATCM information can be located online at http://www.ourair.org/dice-atcm/
- Detailed recordkeeping is required. See Form ENF -92 at the above webpage.
- Stationary sources are subject to an annual emission fee (see Fee Schedule B of Rule 210).
- Annual reports are due by March 1st of each year.
- This permit supersedes ATC/PTO Mod 16106-01.

TABLE 1. MASS EMISSION LIMITS

Device ID #	NOx		ROC		CO		SOx		PM		PM10		PM2.5	
	lb/day	tpy	lb/day	tpy	lb/day	tpy	lb/day	tpy	lb/day	tpy	lb/day	tpy	lb/day	tpy
398661	3.44	0.02	0.96	0.01	17.86	0.11	0.04	0.00	0.14	0.00	0.14	0.00	0.14	0.00
398662	3.44	0.02	0.96	0.01	17.86	0.11	0.04	0.00	0.14	0.00	0.14	0.00	0.14	0.00
398663	3.44	0.02	0.96	0.01	17.86	0.11	0.04	0.00	0.14	0.00	0.14	0.00	0.14	0.00
398664	3.44	0.02	0.96	0.01	17.86	0.11	0.04	0.00	0.14	0.00	0.14	0.00	0.14	0.00
398665	3.44	0.02	0.96	0.01	17.86	0.11	0.04	0.00	0.14	0.00	0.14	0.00	0.14	0.00
398666	3.44	0.02	0.96	0.01	17.86	0.11	0.04	0.00	0.14	0.00	0.14	0.00	0.14	0.00
398667	3.44	0.02	0.96	0.01	17.86	0.11	0.04	0.00	0.14	0.00	0.14	0.00	0.14	0.00
398668	3.44	0.02	0.96	0.01	17.86	0.11	0.04	0.00	0.14	0.00	0.14	0.00	0.14	0.00
Total	**27.52**	**0.17**	**7.68**	**0.05**	**142.88**	**0.89**	**0.32**	**0.01**	**1.12**	**0.01**	**1.12**	**0.01**	**1.12**	**0.01**

TABLE 2. EMISSION FACTORS (g/bhp-hr)

Device	NOx	ROC	CO	SOx	PM	PM10	PM2.5
All Engines	0.50	0.14	2.60	0.01	0.02	0.02	0.02

Table Notes:

(a) Mass emission limits based on allowable maintenance and testing hours.
(b) NO_x as NO_2. SO_x as SO_2. PM means diesel PM.
(c) Device ID # from permit equipment list.
(d) lb/day = pounds per day. tpy = tons per year
(e) Emission data that round down to 0.00 has been set to a default of 0.01.
(f) Emission factors listed are based on current EPA Tier 4 final emission factors for gensets over 750 bhp.

TABLE 3. BACT REQUIREMENTS

Emission Device	Pollutant	Control Technology	Performance Standard
Emergency Standby Diesel Engines greater than 750 bhp	NOx	EPA Tier 4 certified engine	NOx: 0.50 g/bhp-hr or 40 ppmv @ 15% O_2

TABLE 4. SOURCE TEST REQUIREMENTS

Emission & Limit Test Points	Pollutants	Parameters	Test Methods [(a),(b)]
Engine 1 (DID 398661) Engine 2 (DID 398662) Engine 3 (DID 398663) Engine 4 (DID 398664) Engine 5 (DID 398665) Engine 6 (DID 398666) Engine 7 (DID 398667) Engine 8 (DID 398668)	NO_x	ppmv, lb/hr	EPA Method 7E, ARB 1-100
	ROC		EPA Method 18
	CO		EPA Method 10, ARB 1-100
	PM	g/bhp-hr	EPA Method 5
	Sampling Point Det.	Dry, Mol. Wt	EPA Method 1
	Stack Flow Rate		EPA Method 2 or 19
	O_2		EPA Method 3
	Moisture Content		EPA Method 4
	Fuel Gas Flow Rate	BTU/gal	
	Higher Heating Value		
	Total Sulfur Content		

Table Notes:

(a) For CO and O_2 a minimum of three 40-minute runs shall be obtained during each test.

(b) USEPA Methods 1-4 to be used to determine O_2, dry MW, moisture content, CO_2, and stack flow rate. Alternatively USEPA Method 19 may be used to determine stack flow rate.

(c) SO_x emissions to be determined by mass balance calculation.

(d) Procedures to obtain the required operating loads shall be clearly defined in the source test plan.

Santa Barbara County Air Pollution Control District – Equipment List

ATC/PTO 16106 / FID: 11651 Google - Mentor Drive / SSID: 11399

A PERMITTED EQUIPMENT

1 Engine 1

Device ID #	398661	*Maximum Rated BHP*	779.00
Device Name	Engine 1	*Serial Number*	TBD
Engine Use	Electrical Power	*EPA Engine Family Name*	NCPXL18.1HTH
Manufacturer	Caterpillar Inc.	*Operator ID*	
Model Year	2022	*Fuel Type*	CARB Diesel - ULSD
Model	C18		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	4.00	*Annual Hours*	50
Location Note	301 Mentor Drive, Santa Barbara, CA 93111		
Device Description	Tier 4 Final Engine; Turbocharged, Air-to-Air Aftercooled, and equipped with an Ammonia Slip Catalyst, Diesel Oxidation Catalyst, SCR and PTOX-DPF-Active		

2 Engine 2

Device ID #	398662	*Maximum Rated BHP*	779.00
Device Name	Engine 2	*Serial Number*	TBD
Engine Use	Electrical Power	*EPA Engine Family Name*	NCPXL18.1HTH
Manufacturer	Caterpillar Inc.	*Operator ID*	
Model Year	2022	*Fuel Type*	CARB Diesel - ULSD
Model	C18		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	4.00	*Annual Hours*	50
Location Note	301 Mentor Drive, Santa Barbara, CA 93111		
Device Description	Tier 4 Final Engine; Turbocharged, Air-to-Air Aftercooled, and equipped with an Ammonia Slip Catalyst, Diesel Oxidation Catalyst, SCR and PTOX-DPF-Active		

3 Engine 3

Device ID #	398663	*Maximum Rated BHP*	779.00
Device Name	Engine 3	*Serial Number*	TBD
Engine Use	Electrical Power	*EPA Engine Family Name*	NCPXL18.1HTH
Manufacturer	Caterpillar Inc.	*Operator ID*	
Model Year	2022	*Fuel Type*	CARB Diesel - ULSD
Model	C18		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	4.00	*Annual Hours*	50
Location Note	301 Mentor Drive, Santa Barbara, CA 93111		
Device Description	Tier 4 Final Engine; Turbocharged, Air-to-Air Aftercooled, and equipped with an Ammonia Slip Catalyst, Diesel Oxidation Catalyst, SCR and PTOX-DPF-Active		

4 Engine 4

Device ID #	398664	*Maximum Rated BHP*	779.00
Device Name	Engine 4	*Serial Number*	TBD
Engine Use	Electrical Power	*EPA Engine Family Name*	NCPXL18.1HTH
Manufacturer	Caterpillar Inc.	*Operator ID*	
Model Year	2022	*Fuel Type*	CARB Diesel - ULSD
Model	C18		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	4.00	*Annual Hours*	50
Location Note	301 Mentor Drive, Santa Barbara, CA 93111		
Device Description	Tier 4 Final Engine; Turbocharged, Air-to-Air Aftercooled, and equipped with an Ammonia Slip Catalyst, Diesel Oxidation Catalyst, SCR and PTOX-DPF-Active		

5 Engine 5

Device ID #	398665	*Maximum Rated BHP*	779.00
Device Name	Engine 5	*Serial Number*	TBD
Engine Use	Electrical Power	*EPA Engine Family Name*	NCPXL18.1HTH
Manufacturer	Caterpillar Inc.	*Operator ID*	
Model Year	2022	*Fuel Type*	CARB Diesel - ULSD
Model	C18		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	4.00	*Annual Hours*	50
Location	301 Mentor Drive, Santa Barbara, CA 93111		
Note			
Device Description	Tier 4 Final Engine; Turbocharged, Air-to-Air Aftercooled, and equipped with an Ammonia Slip Catalyst, Diesel Oxidation Catalyst, SCR and PTOX-DPF-Active		

6 Engine 6

Device ID #	398666	*Maximum Rated BHP*	779.00
Device Name	Engine 6	*Serial Number*	TBD
Engine Use	Electrical Power	*EPA Engine Family Name*	NCPXL18.1HTH
Manufacturer	Caterpillar Inc.	*Operator ID*	
Model Year	2022	*Fuel Type*	CARB Diesel - ULSD
Model	C18		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	4.00	*Annual Hours*	50
Location	301 Mentor Drive, Santa Barbara, CA 93111		
Note			
Device Description	Tier 4 Final Engine; Turbocharged, Air-to-Air Aftercooled, and equipped with an Ammonia Slip Catalyst, Diesel Oxidation Catalyst, SCR and PTOX-DPF-Active		

7 Engine 7

Device ID #	398667	*Maximum Rated BHP*	779.00
Device Name	Engine 7	*Serial Number*	TBD
Engine Use	Electrical Power	*EPA Engine Family Name*	NCPXL18.1HTH
Manufacturer	Caterpillar Inc.	*Operator ID*	
Model Year	2022	*Fuel Type*	CARB Diesel - ULSD
Model	C18		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	4.00	*Annual Hours*	50
Location Note	301 Mentor Drive, Santa Barbara, CA 93111		
Device Description	Tier 4 Final Engine; Turbocharged, Air-to-Air Aftercooled, and equipped with an Ammonia Slip Catalyst, Diesel Oxidation Catalyst, SCR and PTOX-DPF-Active		

8 Engine 8

Device ID #	398668	*Maximum Rated BHP*	779.00
Device Name	Engine 8	*Serial Number*	TBD
Engine Use	Electrical Power	*EPA Engine Family Name*	NCPXL18.1HTH
Manufacturer	Caterpillar Inc.	*Operator ID*	
Model Year	2022	*Fuel Type*	CARB Diesel - ULSD
Model	C18		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	4.00	*Annual Hours*	50
Location Note	301 Mentor Drive, Santa Barbara, CA 93111		
Device Description	Tier 4 Final Engine; Turbocharged, Air-to-Air Aftercooled, and equipped with an Ammonia Slip Catalyst, Diesel Oxidation Catalyst, SCR and PTOX-DPF-Active		

air pollution control district
SANTA BARBARA COUNTY

DRAFT

PERMIT EVALUATION FOR AUTHORITY TO CONSTRUCT/PERMIT TO OPERATE 16106 - 02

1.0 BACKGROUND

This permit addresses requirements of the State's Airborne Toxic Control Measure for Stationary Compression Ignition Engines (DICE ATCM). On March 17, 2005, District Rule 202 {*Exemptions to Rule 201*} was revised to remove the compression-ignited engine (e.g., diesel) permit exemption for units rated over 50 brake horsepower (bhp). That exemption was removed to allow the District to implement the DICE ATCM.

These new Tier 4 Final engines were installed at Google, LLC's quantum computing research campus at 301 Mentor Drive in Santa Barbara, CA 93111 following issuance of ATC-PTO 16106 on 6/18/2024. Google, LLC submitted this permit modification application to the District on July 29, 2025 due to a need for additional daily hours of operation of each engine to accommodate load testing requirements. This permit modification authorizes an increase in daily hours of operation from 2 hr/day to 4 hr/day per engine.

The engines are located within 1,000 feet of St Raphael school. As a result, maintenance and testing of the engines shall not occur during between 7:30 a.m. and 3:30 p.m. on days school is in session and during school sponsored activities as required by Condition 2.e. The District considers the after-school daycare and school sponsored sporting events which occur at St. Raphael as school sponsored activities.

2.0 DICE ATCM/NESHAP COMPLIANCE

Owners of New Stationary DICE E/S engines are subject to the requirements of Table 1 of the ATCM. The ATCM requires that the hours of operation be monitored with a non-resettable hour meter, that CARB Diesel Fuel be used (or approved alternative) and that detailed records of use be recorded and reported.

The Federal NESHAP for reciprocating internal combustion engines (RICE NESHAP) established inspection and maintenance requirements for emergency standby diesel engines. Engines at residential, institutional, and commercial facilities are exempt from these new requirements. Additionally, engines constructed after 2005 are subject to federal New Source Performance Standards (NSPS) and are not subject to further requirements under NESHAP. The engines on this permit are exempt from the requirements of the RICE NESHAP because the engines were constructed after 2005.

3.0 EMISSIONS

Emissions: Mass emission estimates are based on the maximum allowed hours for maintenance and testing. Emissions are determined by the following equations:

E1, lb/day = Engine Rating (bhp) * EF (g/bhp-hr) * Daily Hours (hr/day) * (lb/453.6 g)
E2, tpy = Engine Rating (bhp) * EF (g/bhp-hr) * Annual Hours (hr/yr) * (lb/453.6 g) * (ton/2000 lb)

The emission factors (EF) were chosen based on each engine's rating and age. Unless engine specific data was provided, default emission factors are used as documented on the District's webpage at http://www.ourair.org/dice/emission-factors/. Daily hours are assumed to be 4 hrs/day as specified by the applicant.

4.0 REEVALUATION REVIEW (not applicable)

5.0 BACT ANALYSIS

Best Available Control Technology was required for this project because NOx emissions exceeded the 25 lb/day criteria pollutant threshold for BACT. BACT for diesel emergency standby generators over 750 bhp was determined to be EPA certified Tier 4 final engines. See Table 2 of this permit and the *BACT Documentation* Attachment for additional discussion on this topic.

6.0 AQIA

The project is not subject to the Air Quality Impact Analysis requirements of Regulation VIII.

7.0 OFFSETS/ERCs

Offsets: The emission offset thresholds of Regulation VIII are not exceeded.

ERCs: This source does not generate emission reduction credits.

8.0 AIR TOXICS

A health risk assessment (HRA) was not performed for this permitting action. An HRA was conducted for ATC 16106 and the California Environmental Quality Act (CEQA), which included eight (8) new Tier 4 diesel generators operating 50 hours/year for maintenance and testing, plus 10 hours/year for emergency use. The HRA also included two (2) existing diesel engines with the same operating hours for maintenance and testing, and emergency use. The HRA showed the facility-wide cancer risk was 3.0 in a million, and both the chronic non-cancer hazard index and the 8-hour chronic non-cancer hazard index was less than 0.1.

Per District guidelines, if a facility's toxic emissions result in a cancer risk equal to or greater than 10 in a million, it is considered a *significant risk* facility. For non-cancer risk, if a facility's toxic emissions result in a Hazard Index greater than 1.0, it is considered a *significant risk* facility. Based on the HRA conducted for ATC 16106, it can be seen with certainty that the proposed permitting action to increase the maintenance and testing by 30 hours for one year for eight (8) engines will not create a significant risk to the surrounding community.

9.0 CEQA / LEAD AGENCY

The District is the lead agency under CEQA for this project. This project is exempt from CEQA pursuant to the Environmental Review Guidelines for the Santa Barbara County APCD (revised April 30, 2015). Appendix A (*APCD Projects Exempt from CEQA* and *Equipment or Operations Exempt from CEQA*) provides an exemption specifically for Engines – Diesel-fired emergency/standby engines that comply with the applicable state Air Toxics Control Measure (ATCM). No further action is necessary.

10.0 SCHOOL NOTIFICATION

The project is located within 1,000 feet of St. Raphael School. A school notice pursuant to the requirements of H&SC §42301.6 was required prior to permit issuance.

10.0 PUBLIC and AGENCY NOTFICATION PROCESS/COMMENTS ON DRAFT PERMIT

10.1 A public notice for the original ATC-PTO 16106 project was issued on 12/16/2025 and ended on 1/15/2026. Any public comments received during this time, as well as District responses, may be found in the original permit file.

11.0 FEE DETERMINATION

Fees for this permit were assessed pursuant to Schedule A.3 of Rule 210.

12.0 RECOMMENDATION

It is recommended that this permit be granted with the conditions as specified in the permit.

AQ Engineer/Technician	Date	Supervisor	Date

13.0 ATTACHMENT(S)

A. Fee Statement
B. IDS Tables
C. Air Toxics Documentation
D. BACT Analysis

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Authority to Construct/Permit to Operate 16106 - 02

ATTACHMENT A
Fee Statement

air pollution control district
SANTA BARBARA COUNTY

FEE STATEMENT
ATC/PTO Mod No. 16106 02
FID: 11651 Google - Mentor Drive / SSID: 11399

Permit Fee

Minimum Eval Fee	**$1,404.00**

Fee Statement Grand Total = $1,404

Notes:

(1) Fee Schedule Items are listed in District Rule 210, Fee Schedule "A".
(2) The term "Units" refers to the unit of measure defined in the Fee Schedule.

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ATTACHMENT B
IDS Tables

PERMIT POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}	$PM_{2.5}$
lb/day	27.52	7.68	142.88	0.32	1.12	1.12	1.12
lb/hr							
TPQ							
TPY	0.17	0.05	0.89	0.01	0.01	0.01	0.01

FACILITY POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}	$PM_{2.5}$
lb/day	86.02	11.58	176.68	0.4	3.06	3.06	3.06
lb/hr							
TPQ							
TPY	0.91	0.09	1.31	0.03	0.03	0.03	0.03

STATIONARY SOURCE POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}	$PM_{2.5}$
lb/day	86.02	11.58	176.68	0.4	3.06	3.06	3.06
lb/hr							
TPQ							
TPY	0.91	0.09	1.31	0.03	0.03	0.03	0.03

Notes:
(1) Emissions in these tables are from IDS.
(2) Because of rounding, values in these tables shown as 0.00 are less than 0.005, but greater than zero.

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Authority to Construct/Permit to Operate 16106 - 02

ATTACHMENT C
Air Toxics Documentation

MEMORANDUM

TO: Project File for SSID 11399 Google – Mentor Drive
FROM: Agnieszka Letts
SUBJECT: HRA Results for ATC/PTO 16106
DATE: February 13, 2024
Cc: Toxics Group

Background

In January 2024, an air toxics Health Risk Assessment (HRA) was conducted by Google for their proposed installation of eight new emergency standby diesel-fired generators at 301 Mentor Drive in Goleta. This HRA also included the two existing emergency standby diesel-fired generators at this facility permitted under District PTO 15225-R1. The HRA was conducted as part of the California Environmental Quality Act (CEQA) review of this project and was used for District permitting purposes as well. The HRA was conducted using the California Air Resource Board's (CARB) "Hot Spots" Analysis and Reporting Program software (HARP2) in accordance with California Office of Environmental Health Hazard Assessment (OEHHA) guidance and SBCAPCD's *Modeling Guideline for Health Risk Assessments* (June 2020, Form-15i). During the District's review of the modeling files, no errors were found. The model was based on the emissions from each of the ten engines operating 50 hours/year for maintenance and testing plus an additional 10 hours for emergency use.

Health Risk Assessment Modeling Results

The results of the HRA are shown in Table 1.1, *Summary of Results*, in the attached Health Risk Assessment report. As shown in Table 1.1, none of the results are above the District's significant risk thresholds.

Conclusion

Per District guidelines, if a facility's toxic emissions result in a cancer risk equal to or greater than 10 in a million, it is considered a significant risk facility. For non-cancer risk, if a facility's toxic emissions result in a Hazard Index greater than 1.0, it is considered a significant risk facility. The HRA modeling results show that the ATC 16106 Generator Set Permitting Project at 301 Mentor Drive in Goleta will not present a significant risk to the surrounding community.

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ATTACHMENT C
Air Toxics Documentation

References

- Google. January 2024. *Google 301 Mentor Drive: ATC 16105 Generator Set Permitting Project Health Risk Assessment (Emergency Use Analysis)* prepared by Google.
- Santa Barbara County Air Pollution Control District. June 2020. *Modeling Guidelines for Health Risk Assessments* (Form-15i). http://www.ourair.org/wp-content/uploads/apcd-15i.pdf.

Attachments

Google's Google 301 Mentor Drive: ATC 16105 Generator Set Permitting Project Health Risk Assessment (Emergency Use Analysis) is attached to this memo.

The applicant's emission calculations and HRA modeling files may be found in the following location:

\\sbcapcd.org\shares\Toxics\SourceFiles\SSID11399_Google_Mentor_Drive\ATC-PTO 16106\Memo Regarding HRA for ATC - PTO 16106.docx

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ATTACHMENT C
Air Toxics Documentation

Google 301 Mentor Drive: ATC 16106
Generator Set Permitting Project
Health Risk Assessment
(Emergency Use Analysis)

1.0 SUMMARY

The following air toxics Health Risk Assessment (HRA) was prepared in response to a request from the Santa Barbara County Air Pollution Control District (District) in an Incompleteness Letter dated January 9, 2024. The HRA was conducted using the California Air Resource Board's (CARB) "Hot Spots" Analysis and Reporting Program software (HARP2) which integrates the emissions inventory, air dispersion modeling, and risk analysis components of an HRA. This HRA was also prepared in accordance with California Office of Environmental Health Hazard Assessment (OEHAA) guidance and SBCAPCD's *Modeling Guideline for Health Risk Assessments* (June 2020, Form-15i). Cancer, chronic non-cancer Hazard Index (HI), and acute non-cancer HI risk values were calculated from estimates of routine maintenance and testing emissions plus projected emergency usage emissions (totaling approximately 60 hours per year, per engine), and compared to significance thresholds adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

Table 1.1 – Summary of Results

Maximally Exposed Individual (MEI)	HRA Risk	Significant Threshold
Residential Cancer Risk	2.99×10^{-6}	10×10^{-6}
Worker Cancer Risk	2.39×10^{-6}	10×10^{-6}
Point of Maximum Impact (PMI)	7.26×10^{-6}	
Residential Chronic HI	<0.01	1
8-hr Residential Chronic HI	<0.01	1
Worker Chronic HI	<0.01	1
8-hr Worker Chronic HI	<0.01	1
PMI Chronic HI	<0.01	
Residential Acute HI	N/A	1
Worker Acute HI	N/A	1
PMI Acute HI	N/A	1

Based on these results, the emissions from the proposed generator set and current existing generators do not present a significant risk to the surrounding community.

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Authority to Construct/Permit to Operate 16106 - 02

ATTACHMENT C
Air Toxics Documentation

2.0 MODELING INFORMATION

The stack parameter inputs to HARP are outlined in Table 2.1.

Table 2.1 – Summary of Stack Parameter Inputs

Source ID	Source Name	Source Type	UTM E (m)	UTM N (m)	Stack Height (ft)	Stack Dia (ft)	Stack Temp (degF)	Stack Flow (cfm)
1	EXISTING GENERATOR 1	POINT	241461.3	3813628	13	0.58	868.3	6813
2	EXISTING GENERATOR 2	POINT	241465.6	3813625	13	0.58	868.3	6813
3	NEW GENERATOR 1	POINT	241487.4	3813662	9.27	0.42	836.8	2469
4	NEW GENERATOR 2	POINT	241492.4	3813662	9.27	0.42	836.8	2469
5	NEW GENERATOR 3	POINT	241497.4	3813662	9.27	0.42	836.8	2469
6	NEW GENERATOR 4	POINT	241502.4	3813661	9.27	0.42	836.8	2469
7	NEW GENERATOR 5	POINT	241507.4	3813661	9.27	0.42	836.8	2469
8	NEW GENERATOR 6	POINT	241512.4	3813661	9.27	0.42	836.8	2469
9	NEW GENERATOR 7	POINT	241517.4	3813661	9.27	0.42	836.8	2469
10	NEW GENERATOR 8	POINT	241522.2	3813660	9.27	0.42	836.8	2469

The urban option was enabled, and a flagpole height of 1.5 meters was used for all receptors. Receptors were placed in a grid with 25-meter spacing going out 0.5 kilometer from the facility center and Property Boundary receptors were placed every 25 meters along facility perimeter. The meteorological data set for the 2012-2016 Santa Barbara Airport was used.[1] The Maximum Exposed Individual Resident (MEIR) receptor is roughly 150 m from the facility boundary and the Maximum Exposed Individual Worker (MEIW) receptor is roughly 15 m from the facility boundary. Building downwash was included, and the building information is shown in Table 2.2. The easting and northing coordinates in the table represent the outer vertices of the main facility building.

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ATTACHMENT C
Air Toxics Documentation

Table 2.2 – Summary of Building Information

Building ID	Building Tier	Height (m)	Building Point	Relative UTM E (m)	Relative UTM N (m)
MAIN BUILDING	1	10.9728	1	241519.2	3813672
			2	241523.6	3813676
			3	241527.9	3813768
			4	241523.8	3813772
			5	241496.5	3813774
			6	241491.8	3813769
			7	241487.3	3813678
			8	241491.7	3813673

Figure 2.1 – Property Boundary, Emission Source, and Buildings

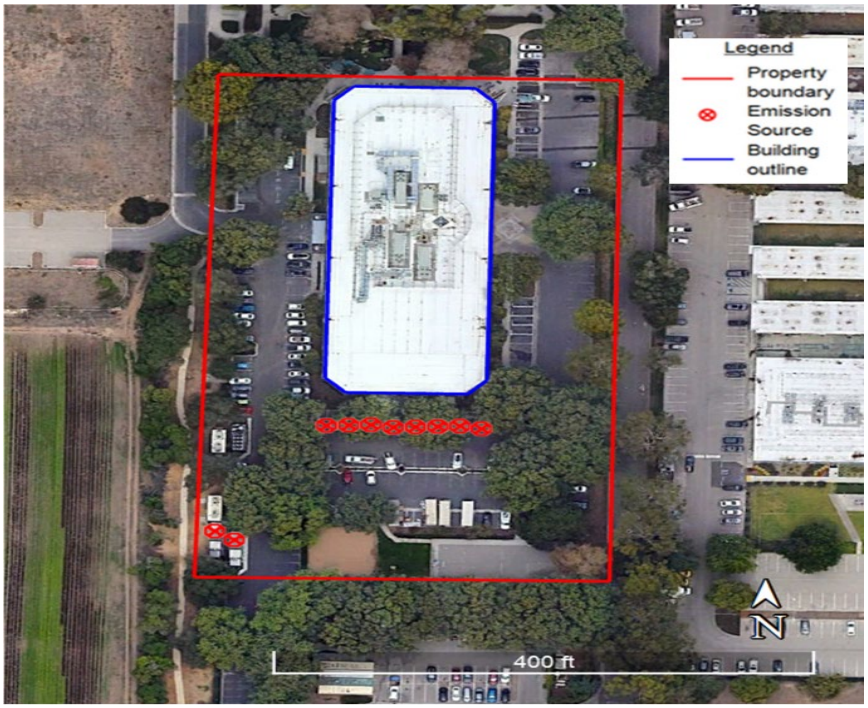

Figure 2-1 shows all HRA emission sources and nearby buildings within the facility boundary. All source stacks are located on the south side of the facility.

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ATTACHMENT C
Air Toxics Documentation

3.0 EMISSIONS

Emissions for this HRA were estimated using the proposed 50 hours per year for each of eight (8) new Tier 4 diesel generators for maintenance and testing, plus 10 hours each per year for emergency use, resulting in approximately 2.06 lbs of diesel particulate matter (DPM) per engine. Additionally, each of two (2) existing engines operated with the same maintenance, testing, and emergency use runtime limits was estimated to produce roughly 29.22 lbs of DPM per year. Total facility-wide emissions modeled in this HRA were 74.91 lbs per year.

Generator TAC emissions were reported as DPM, only per OEHHA guidance[2]. The full inventory of emissions reported can be found in the HARP2 database included with this submission as an electronic attachment.

4.0 RESULTS

A summary of all relevant risk results can be found in Table 4.1. All calculated risks for both MEIR and MEIW receptors were below the relevant risk thresholds for cancer, chronic non-cancer, and acute noncancer.

There are no acute risks associated with DPM in this HRA. A detailed breakdown of risks by top contributing sources and pollutants is outlined in Appendix A. Additionally, available risk isopleths can be found in Appendix B.

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ATTACHMENT C
Air Toxics Documentation

Table 4.1 – Summary of Results

Maximally Exposed Individual (MEI)	Receptor ID	Location (UTME, UTMN)	HRA Risk	Significant Threshold
Residential Cancer Risk	808	241700.26, 3813724.99	2.99×10^{-6}	10×10^{-6}
Worker Cancer Risk	839	241450.26, 3813749.99	2.39×10^{-6}	10×10^{-6}
Point of Maximum Impact (PMI)	1689	241553.26, 3813684.99	7.26×10^{-6}	
Residential Chronic HI	808	241700.26, 3813724.99	<0.01	1
8-hr Residential Chronic HI	808	241700.26, 3813724.99	<0.01	1
Worker Chronic HI	839	241450.26, 3813749.99	<0.01	1
8-hr Worker Chronic HI	839	241450.26, 3813749.99	<0.01	1
PMI Chronic HI	1689	241553.26, 3813684.99	<0.01	
Residential Acute HI	N/A	N/A	N/A	1
Worker Acute HI	N/A	N/A	N/A	1
PMI Acute HI	N/A	N/A	N/A	1

5.0 ATTACHMENTS

The HARP 2 database along with all relevant input and output files for this project are included with this submission.

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ATTACHMENT C
Air Toxics Documentation

APPENDIX A – Risk Driver Tables

The tables in this appendix summarize all risk contributions by pollutants and sources that account for greater than 5% of each risk characterization. Due to the particularly low or no risk associated with chronic, 8-hr chronic, and acute risks (i.e., HI < 0.01), a detailed breakdown of those risks by chemical and source are not outlined below.

Table A.1 – Cancer Risk by Pollutant at the MEIR

Pollutant	Cancer Risk Contribution at the MEIR (in a million)	Percentage Contribution to Total Cancer Risk
Total	2.99	100%
Diesel PM	2.99	100%

Table A.2 – Cancer Risk by Source at the MEIR

HARP 2 Source ID	Cancer Risk Contribution at the MEIR (in a million)	Percentage Contribution to Total Cancer Risk
Total	2.99	100%
Source 1	0.66	22.2%
Source 2	0.66	22.0%
Source 4	0.35	11.8%
Source 3	0.35	11.6%
Source 6	0.24	8.0%
Source 5	0.22	7.4%

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Table A.3 – Cancer Risk by Source at the MEIW

Pollutant	Cancer Risk Contribution at the MEIW (in a million)	Percentage Contribution to Total Cancer Risk
Total	2.39	100%
Diesel PM	2.39	100%

Table A.4 – Cancer Risk by Source at the MEIW

HARP 2 Source ID	Cancer Risk Contribution at the MEIW (in a million)	Percentage Contribution to Total Cancer Risk
Total	2.39	100%
Source 8	0.28	11.9%
Source 9	0.28	11.8%
Source 7	0.27	11.4%
Source 10	0.27	11.4%
Source 6	0.27	11.3%
Source 5	0.25	10.4%
Source 2	0.24	10.2%
Source 1	0.24	9.9%
Source 4	0.19	8.1%

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ATTACHMENT C
Air Toxics Documentation

APPENDIX B – Isopleth Maps

The images in this appendix show the isopleths for all relevant risk thresholds. Modeled cancer risk for both residential and worker exposure did not exceed 10 in a million anywhere within the model area. As a result, no 10 in a million isopleth was mapped. Chronic and acute risk isopleths are not mapped below because no risk results were estimated above either of the non-cancer hazard indexes of 0.1 or 1.0.

Figure B.1 – Residential Cancer Risk Isopleth

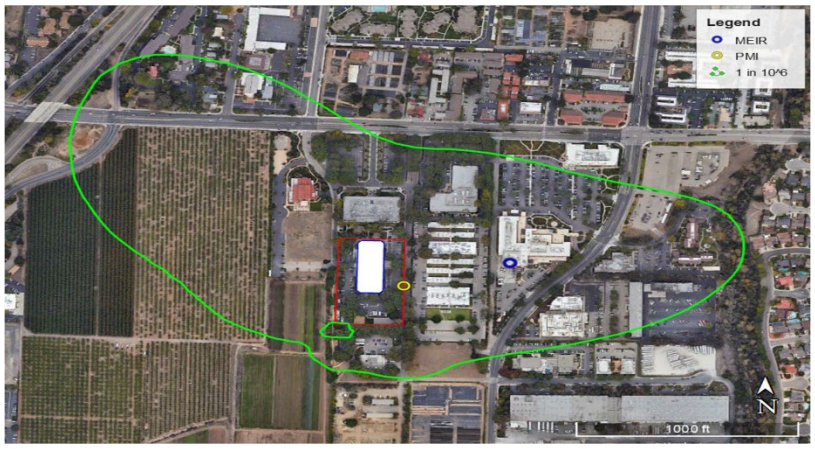
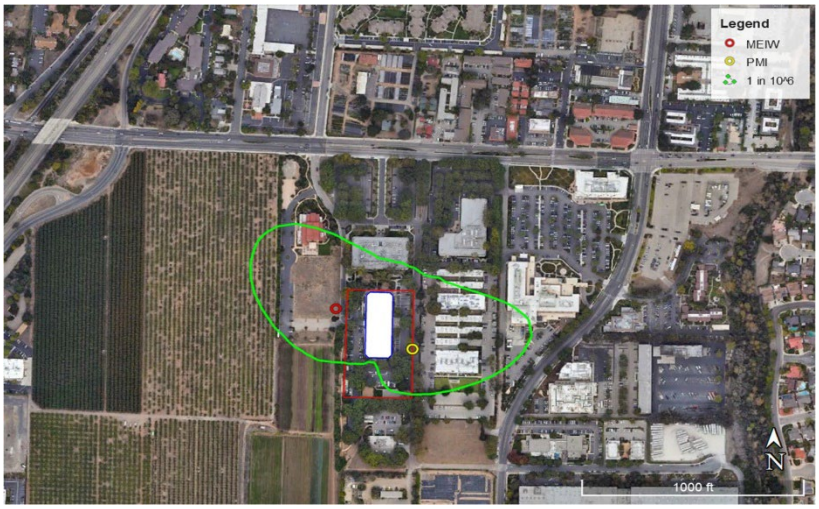


Figure B.2 – Worker Cancer Risk Isopleth



Authority to Construct/Permit to Operate Modification 16106-01

ATTACHMENT D
BACT Documentation

BACT DETERMINATION

1. Pollutant(s): NOx

2. Emission Units: Eight (8) 779 bhp Tier 4 final Emergency Standby Diesel Generators

3. BACT Determination Summary: Emergency Standby Diesel Engines over 750 bhp:
   Technology: Tier 4 Final Certified Engine
   Performance Standard: NOx Emission Standard of 0.50 g/bhp-hr

4. Level of Stringency: [x] Achieved in Practice
   [ ] Technologically Feasible
   [ ] RACT, BARCT, NSPS, NESHAPS, MACT

5. BACT Selection Process Discussion: A Tier 4 Final Engine is the highest Tier standard available for an engine in this horsepower range and therefore satisfies BACT.

6. BACT Effectiveness: BACT is expected to be effective over all operating loads.

7. BACT During Non-Standard Operations: Non-standard operations were not identified by the applicant.

8. Operating Constraints: Use of CARB diesel fuel

9. Continuously Monitored BACT: CEMS are not required for this project.

10. Source Testing Requirement: None. Pursuant to District policy, EPA certified Tier 4 final engines are not subject to initial source testing. Source testing is only required upon District request.

11. Compliance Averaging Times: None.

12. Multi-Phase Projects: This is not a multi-phase project.

13. Referenced Documents: The BACT Guidelines are found online at:
    SJVAPCD BACT Guidelines: Microsoft Word - Final Update to BACT 3.1.1 for Emergency Diesel IC Engine Generators 4-29-22.docx (valleyair.org)

    SacMetro AQMD BACT Guidelines:
    https://www.airquality.org/StationarySources/Documents/IC%20Engine%20Compression%20Standby%20Diesel%20Fired%20BACT%20330.pdfv

14. PSD BACT: Not Applicable