



Air Quality

Air Quality Management Division
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STATIONARY SOURCE TECHNICAL SUPPORT DOCUMENT (STATEMENT of BASIS)

APPLICATION FOR:
Synthetic Minor, Minor Permit Revision

SUBMITTED BY:
Apple Inc.

PERMIT NUMBER:
AAIR16-0082

LOCATION:
21505 Reno Technology Way, Sparks, Nevada 89442

SIC code: 7374, "Computer Processing and Data Preparation and Processing Services"
NAICS code: 518210, "Computing Infrastructure Providers, Data Processing, Web Hosting, And
Related Services"

6/6/2025

EXECUTIVE SUMMARY

This TSD establishes the methodology related to the terms and conditions of its Minor Source Permit issued pursuant to DBOH Regulation 030. The TSD shall not serve as the operating authority.

Apple Inc. (Apple) is a data center operating at 21505 Reno Technology Way in Washoe County. The source operates 43 emergency engines to provide power to the facility in emergency situations. As a data center, the source is classified under SIC code 7374, “Computer Processing and Data Preparation and Processing Services” and NAICS code 518210, “Computing Infrastructure Providers, Data Processing, Web Hosting, And Related Services”.

Apple consists of four (4) 2,000 kW emergency engines, twelve (12) 2,750 kW emergency engines, and twenty-four (24) 4,000 kW emergency engines. The source also operates two (2) 250 kW emergency engines, one (1) 300 kW emergency engine, one (1) gasoline storage tank, and five (5) diesel storage tanks as insignificant activities. The 12 2,750 kW engines and 24 4,000 kW engines will each have selective catalytic reduction, diesel oxidation catalyst, and diesel particulate filter controls installed. All of the engines are subject to the federal requirements of 40 CFR Part 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ. Pursuant to DBOH Regulations 030, a minor source undergoing modification must obtain a Permit to Construct (PTC) before beginning construction.

Apple Inc. will remain classified as a synthetic minor source of regulated air pollutants, with the Source PTE provided below in Table 1. In addition, the permit will be issued, based on the Permit to Construct (PTC) permit application that was submitted on December 3, 2024.

Table 1: Source PTE – Summary (tons per year)

Pollutant	Major Source Threshold (PSD)	Major Source Threshold (Part 70)	Minor Source Threshold	Source PTE	Projected Actual Emissions	Allowable Emissions
PM10	250 ¹	100	5	6.69	0.15	1.71
PM2.5	250 ¹	100	5	6.69	0.15	1.71
CO	250 ¹	100	5	62.14	1.56	18.27
VOC		100	5	9.02	0.19	2.18
NO_x	250 ¹	100	5	679.07	8.11	95.0
SO₂		100	5	1.16	0.06	0.68
Pb			0.3	-	-	-
H₂S			5	-	-	-
TRS			5	-	-	-
HAP – single/total		10/25 ²		1.45	0.15	1.75

¹ Threshold is 100 tons per year for the 28 listed source categories listed in 40 CFR 51.166(b)

² 10 for one individual HAP, 25 for total combined HAPs

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ACRONYMS AND ABBREVIATIONS

(These terms may be seen in the technical support document)

AQMD	Northern Nevada Public Health Air Quality Management Division
bhp	brake horsepower
CARB	California Air Resources Board
CE	control efficiency
CF	control factor
CFR	Code of Federal Regulations
CO	carbon monoxide
DBOH Regulations	District Board of Health Regulations Governing Air Quality Management
DOM	date of manufacture
EF	emission factor
EI	emission increase
EPA	U.S. Environmental Protection Agency
EU	emission unit
g/kW-hr	grams per kilowatt-hour
gr/dscf	grains per dry standard cubic foot
GDO	gasoline dispensing operation
gpm	gallons per minute
HAP	hazardous air pollutant
H ₂ S	hydrogen sulfide
HHV	high heating value
HVLP	high volume, low pressure
kW	kilowatt
mg/dscm	milligrams per dry standard cubic meter
MMBtu	British thermal units (in millions)
NAICS	North American Industry Classification System
NO _x	nitrogen oxide
Pb	lead
PM _{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
PM ₁₀	particulate matter less than 10 microns in aerodynamic diameter
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTE	potential to emit
RACT	reasonably available control technology
RICE	reciprocating internal combustion engine
SCC	Source Classification Codes
scf	standard cubic feet
SIC	Standard Industrial Classification
SO ₂	sulfur dioxide
TSD	Technical Support Document
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator
VAEL	Voluntarily Accepted Emission Limit
VMT	vehicle miles traveled
VOC	volatile organic compound

I. SOURCE INFORMATION

A. General

Preparer: Brandon Koyama
Action Received: 11/25/2024
TSD Date: 6/6/2025
Company: Apple Inc.
Responsible Official: Pankaj Garg, Environmental Program Manager – Global Data Centers
Consultant: Tiffany Cuni, ERM
Permit Number: AAIR16-0082
Facility Name: Apple Inc.
Facility Address: 21505 Reno Technology Way, Sparks, Nevada 89442

B. Facility Description

Apple Inc. is a data center located in Hydrographic Area 083. This source category falls under Standard Industry Classification (SIC) code 7374, “Computer Processing and Data Preparation and Processing Services” and North American Industrial Classification System (NAICS) code 518210, “Computing Infrastructure Providers, Data Processing, Web Hosting, And Related Services”. This is a synthetic minor source of regulated air pollutants. This source consists of 40 emergency engines. The source also operates three emergency engines, one gasoline storage tank, and five diesel storage tanks as insignificant activities. Upon modification, 36 of the 40 engines will operate selective catalytic reduction (SCR), diesel oxidation catalyst (DOC), and diesel particulate filters (DPF) installed as control devices. The source has taken a voluntarily accepted emission limit (VAEL) through operational limitations to avoid becoming a major source. This source is subject to 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ.

C. Permitting History

1. The last permit was issued on June 6, 2024.
2. An application was received on December 3, 2024.
3. The draft permit and TSD were sent for review on 4/28/2025.
4. This permitting action is for the installation of SCR, DOC, and DPF on all System B emergency engines (B.001 through B.012).

D. Permitting Action

This source is an existing synthetic minor source that is submitting an application to voluntarily install SCR, DOC, and DPF controls to the 12 emergency engines in System B. No changes to the facility’s emissions limits were requested as part of this permitting action.

Table 2 below lists affected or relevant units, including SCC. A full list of the source’s emissions units can be found in Section VIII.A: List of Emissions Units.

Table 2: List of Affected Emissions Units

EU	Type	Manufacturer	Model No.	Rating	Serial No.	SCC
B.001-B.012	Emergency Engine	Cummins	2750DQLF	2,750 kW	N/A	20100102
CT.001, CT.004, CT.007, CT.010, CT.013, CT.016, CT.019, CT.022, CT.025, CT.028, CT.031, CT.034	Selective Catalytic Reduction	Miratech	SCRC-044-150-450	N/A	N/A	N/A
CT.002, CT.005, CT.008, CT.011, CT.014, CT.017, CT.020, CT.023, CT.026, CT.029, CT.032, CT.035	Diesel Oxidation Catalyst	Miratech	SCRC-044-150-450	N/A	N/A	N/A
CT.003, CT.006, CT.009, CT.012, CT.015, CT.018, CT.021, CT.024, CT.027, CT.030, CT.033, CT.036	Diesel Particulate Filters	Miratech	LTR2-DPF-Filter-Block	N/A	N/A	N/A

Due to the revisions to DBOH Regulations 030 and the provisions of DBOH Regulations 030.020.B.2 that went into effect on January 1, 2025, some of the emissions units at this facility are reclassified as insignificant activities as part of this permitting action. The emissions units reclassified as insignificant activities are shown below in Table 3. A full list of all insignificant activities can be found in Section VIII.B: List of Insignificant Activities.

Table 3: List of Emissions Units Reclassified as Insignificant Activities

Insignificant Activity ID	Description
IA.008-IA.009	Generac SD250 250 kW Wells 2 and 3 Emergency Engines
IA.010	Caterpillar C9 300 kW Well 4 Emergency Engine

E. Alternative Operating Scenario

No alternative operating scenario proposed.

II. EMISSIONS INFORMATION

A. Total Source Potential to Emit and Source Applicability

DBOH Regulation 030 permitting applicability is determined by calculating the emissions for all proposed emission units using 8,760 hours of operation (except for emergency engines or fire pumps which is using 500 hours) and emission factors provided by the manufacturer, source test results, EPA AP-42, and other reputable sources.

For all emergency engines, PTE for PM₁₀, PM_{2.5}, NO_x, CO, and VOC was calculated using manufacturers' specifications for operation at 100% load. SO₂ and total HAPs PTE was calculated using AP-42 Chapter 3.4 emission factors. To calculate projected actual emissions rates, estimated operating hours of 52 hours per year per engine and control efficiencies for SCR (NO_x control), DOC (CO and VOC control), and DPF (PM₁₀ and PM_{2.5} control) provided by the manufacturer were used. Allowable emissions were back-calculated using the requested 95 tpy NO_x limit. It was determined that all engines could operate 609 hours before exceeding the 95 tpy limit. Allowable emissions for PM₁₀, PM_{2.5}, CO, VOC, SO₂, and HAP were calculated using 609 hours. The emissions summary for DBOH Regulation 030 applicability is shown in Table 4.

Emissions from insignificant activities were calculated to determine permitting applicability but are not included in projected actual emissions.

Table 4. Source Applicability Emissions (tons per year)

Pollutant	Major Source Threshold (PSD)	Major Source Threshold (Part 70)	Minor Source Threshold	Source PTE	Projected Actual Emissions	Allowable Emissions
PM₁₀	250 ³	100	5	6.69	0.15	1.71
PM_{2.5}	250 ³	100	5	6.69	0.15	1.71
CO	250 ³	100	5	62.14	1.56	18.27
VOC		100	5	9.02	0.19	2.18
NO_x	250 ³	100	5	679.07	8.11	95.0

³ Threshold is 100 tons per year for the 28 listed source categories listed in 40 CFR 51.166(b)

SO₂		100	5	1.16	0.06	0.68
Pb			0.3	-	-	-
H₂S			5	-	-	-
TRS			5	-	-	-
HAP – single/total		10/25 ⁴		1.45	0.15	1.75

DBOH Regulation 030.200 states a source with a PTE for any regulated pollutant equal to or greater than the threshold of 5.0 tons per year shown in Table 4, will be applicable to the permitting requirements of DBOH Regulation 030.

This source exceeds the applicability limit for PM₁₀, PM_{2.5}, CO, VOC, NO_x, and SO₂ and is required to obtain an air quality permit as shown in Table 4. The source is taking a VAEL to avoid being subject to Part 70 permitting and will be subject to the emissions limits listed in Table 4.

B. Emission Units and PTE

The PTE and projected actual emissions for the affected emissions units are shown below in Table 5.

Table 5: System B PTE and Projected Actual Emissions (tons/year)

Pollutant	System B (B.001-B.012) PTE	System B Projected Actual Emissions
PM₁₀	1.46	0.04
PM_{2.5}	1.46	0.04
CO	10.49	0.25
VOC	3.41	0.05
NO_x	156.10	1.27
SO₂	0.54	0.01
Pb	-	-
H₂S	-	-
TRS	-	-
HAP - combined	0.34	0.04

C. Emissions Increase

The applicant did not propose a modification that would increase the source PTE. The decrease in projected actual emissions is due to the installation of SCR, DOC, and DPF on emissions units B.001 through B.012. The three emergency engines associated with Well 2, Well 3, and Well 4 have been reclassified as insignificant activities pursuant to DBOH Regulations 030.020.B.2. No other modifications occurred in this permitting action.

⁴ 10 for one individual HAP, 25 for total combined HAPs

Table 6: Permitting Action Emissions Increase (tons per year)

	Emissions Increase Due to PTC Units	Projected Actual Emissions Increase Due to Modified Emission Units	Emissions Decrease Due to Removed Units	Emissions Decrease Due to Units Reclassified as Insignificant	Permitting Action Emissions Increase	Minor Source Significance Threshold
PM10		-0.11		-0.06		15
PM2.5		-0.11		-0.06		10
CO		-0.84		-0.21		40
VOC		-0.30		-0.07		20
NO_x		-14.97		-0.96		100
SO₂		-		-0.06		20
Pb		-		-		0.6
H₂S		-		-		5
TRS		-		-		5
HAP - combined		-0.34		-0.06		

D. Operational Limits

The emergency engines shall be limited to operate 100 hours per year for testing and maintenance purposes, including nonemergency limitations. On May 1, 2015, the U.S. Court of Appeals for the D.C. Circuit issued a decision to vacate provisions in 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ that allowed emergency engines to operate for demand response and when there is a deviation of voltage or frequency. Therefore, AQMD is prohibiting sources from operating emergency generators for those activities, which is consistent with the court decision and EPA's implementation memo dated April 15, 2016. In order to utilize the generator to operate for demand response or when there is a deviation of voltage or frequency, the source must request that the engine be treated as a nonemergency engine.

E. Control Technology/Best Systems of Control Analysis

The applicant is proposing to voluntarily install SCR, DOC, and DPF controls on emissions units B.001 through B.012, each, to reduce the environmental impact of the source. SCR control efficiency for NO_x emissions is assumed to be 92%. DOC control efficiency for VOC and CO is assumed to be 86% and 77%, respectively. DPF control for PM10 and PM2.5 is assumed to be 75%. All control efficiencies were based on manufacturer specifications.

The operation of the SCR and DOC controls depend on the exhaust gas temperature to function effectively. For SCR, the exhaust gas temperature must reach approximately 572 °F for urea injection to occur and the catalyst to operate properly. Similarly, for DOC, the exhaust gas temperature must reach approximately 450 °F to effectively control CO and VOC emissions. This means that the SCR and DOC controls do not operate during periods of startup until the exhaust

gas reaches the required temperatures for proper control. DPF is passive control and does not depend on exhaust gas temperature. Apple assumes that the engine exhaust gas reaches the minimum required exhaust gas temperature in 60, 30, 25, and 20 minutes during startup at 25%, 50%, 75%, and 100% operating load, respectively. For periods of startup, emissions of NO_x, CO, and VOC are considered uncontrolled. The source monitors operating loads of each engine and operation of control devices to more accurately calculate emissions.

A BSC analysis is not required for this permitting action as the emissions increase does not exceed the minor source significance threshold detailed in DBOH Regulations 030.200.B.

F. Emissions Limits/Allowable Emissions

The following quantities of emissions are the facility's allowable emissions based upon the source's potential to emit, as determined by the physical and operational design of the equipment and any practically enforceable permit conditions that limit the emissions of the source based on use of emissions control equipment, controlled operating rates, hours of operation, or other emissions control methods. The following quantities are used to determine annual permit maintenance fees and are enforceable emissions limits:

1. The discharge of PM₁₀ to the atmosphere shall not exceed 1.71 tons per 12-month rolling period.
2. The discharge of PM_{2.5} to the atmosphere shall not exceed 1.71 tons per 12-month rolling period.
3. The discharge of sulfur dioxide to the atmosphere shall not exceed 0.68 tons per 12-month rolling period.
4. The discharge of nitrous oxides to the atmosphere shall not exceed 95.0 tons per 12-month rolling period.
5. The discharge of carbon monoxide to the atmosphere shall not exceed 18.27 tons per 12-month rolling period.
6. The discharge of volatile organic compounds to the atmosphere shall not exceed 2.18 tons per 12-month rolling period.
7. The discharge of total Hazardous Air Pollutants to the atmosphere shall not exceed 1.75 tons per 12-month rolling period.

The source shall comply with the emissions standards in 40 CFR 89.112 and 40 CFR 89.113 for new nonroad CI engines for the same model year and maximum engine power. The emission standards are provided in Table 7.

Table 7. Emission Standards for Emergency Diesel Generator, in g/kW-hr (g/bhp-hr)

Maximum Engine Power	Starting Model Year	CO	NMHC/VOC	NO _x	PM
kW > 560 (hp > 750)	2006	3.5 (2.6)	0.19 (0.14)	0.67 (0.50)	0.04 (0.03)

G. Monitoring

Apple is required to monitor hours of operation and fuel consumption for all emergency engines. The source also monitors operating loads of each engine as well as control device operation to more accurately calculate emissions to demonstrate compliance with the emissions limits.

H. Increment

Figure 1 below shows the PSD triggered areas in Washoe County.

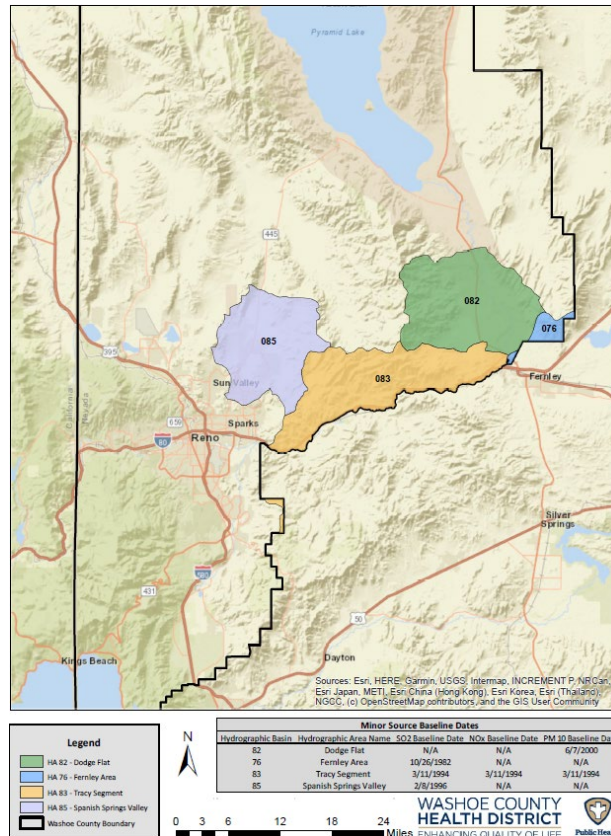


Figure 1: Washoe County PSD Triggered Areas

This source exists in HA 083 and is subject to increment consumption tracking. As the only new equipment being installed consists of control devices, no increment will be consumed.

I. Performance Testing

Upon installation and startup of the control technologies CT.001 through CT.036, Apple will be required to conduct performance testing on engines B.001 through B.012 to demonstrate compliance with the Tier 4F emissions limits. The source may opt to conduct pooled source testing in which at least one-third of the engines are tested during the initial source test, and subsequent source tests shall be conducted on a different one-third of the engines. Subsequent testing of pooled engines will be conducted at least every three years from the date of the previous source test, and all pooled engines are required to be tested at least once every nine years.

C.001 through C.012 and D.001 through D.012, which also operate with similar SCR, DOC, and DPF control devices, will also be required to perform source testing upon the renewal of Apple's Permit to Operate. Testing conditions for these engines will not be incorporated into the Permit to Operate as a part of this permitting action.

III. REGULATORY REVIEW

A. Local Regulatory Requirements

This source is subject to the permitting requirements of DBOH Regulations 030 and the synthetic minor permit requirements of DBOH Regulations 010.090.

B. Federally Applicable Regulations

The engines at this source are subject to 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ and so must meet the fuel requirements referenced therein from 40 CFR Subpart I, §80.510(b) for nonroad diesel fuel. The source must purchase diesel fuel that meets the per-gallon standard of 15 ppm maximum sulfur content, a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent. As all refiners and importers of non-road diesel fuel are also subject to these federal standards pursuant to 40 CFR §80.510, it is reasonable to assume the operators of the engines have very little opportunity, if any, to acquire fuel that violates these standards. Therefore, the Permittee is not required by the operating permit to monitor or keep records of the sulfur content, cetane index, or aromatic content of the diesel fuel used in their engines. (EU: B.001-B.012)

The engines at this source are subject to 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ. The source will meet the requirements of Subpart ZZZZ by meeting the requirements of Subpart IIII.

The emergency engines are stationary RICE manufactured after the year 2005, located at an area source of HAP emissions and operated according to the definition of an emergency stationary RICE under 40 CFR 63.6675. The emergency generator shall be limited to the operating provisions specified in 63.6640(f)(1) through (f)(4). Therefore, the emergency generator does not need to meet all the requirements of non-emergency engines as specified by 40 CFR 63, Subpart ZZZZ.

The emergency engines are existing commercial stationary RICE manufactured after the year 2005, located at an area source of HAP emissions and operated according to the definition of an emergency stationary RICE under 40 CFR 63.6675. The emergency generator shall be limited to the operating provisions specified in 63.6585(f). Therefore, the emergency generator does not need to meet all the requirements of non-emergency engines as specified by 40 CFR 63, Subpart ZZZZ.

The emergency engines are existing stationary ICE manufactured after the year 2005, located at an area source and operated according to the definition of an emergency stationary ICE under 40 CFR 60.4219. The emergency generator shall be limited to the operating provisions specified in 40 CFR 60.4211(f), Subpart IIII.

The emergency engines are powered by a constant-speed compression-ignition engine and are therefore exempt from the requirements of 40 CFR 89.113 that are referenced in 40 CFR Part 60 Subpart IIII.

IV. COMPLIANCE

A. Compliance Certification

The owner or operator shall follow the reporting schedule outlined below in Table 8.

Table 8: Reporting Schedule

Required Report	Applicable Period	Due Date ⁵
Annual Compliance Certification Report	Once per calendar year	March 31 each year
Annual Emissions Report	Once per calendar year	March 31 each year
Notification of Malfunctions, Startup, Shutdowns, or Deviations with Excess Emissions	As required	Within 24 hours of owner or operator learning of the event
Report of Malfunctions, Startup, Shutdowns, or Deviations with Excess Emissions	As required	Within 72 hours of notification
Deviation Report with Excess Emissions	As required	Along with annual report

B. Summary of Monitoring for Compliance

The permittee shall follow the compliance monitoring requirements outlined in Table 9.

Table 9: Compliance Monitoring Summary

EU	Process Description	Monitored Pollutants	Applicable Subsection Title	Requirements	Compliance Monitoring
A.001- A.004, B.001- B.012, C.001- C.012,	Emergency Engines	PM10, PM2.5, SO ₂ , NO _x CO, VOC, HAP	Synthetic Minor permit limit	Annual emissions limits.	Recordkeeping of hours of operation and fuel consumption required.

⁵ If the due date falls on a Saturday, Sunday, or federal or Nevada holiday, then the submittal is due on the next regularly scheduled business day.

D.001-D.012					
A.001-A.004, B.001-B.012, C.001-C.012, D.001-D.012	Emergency Engines	PM10, PM2.5, NMHC + NO _x , CO	40 CFR 60 Subpart IIII	Annual emissions limits. Emissions limitations based on hours of operation for testing and maintenance. Sulfur in No. 2 diesel fuel limited to 15 ppm.	Recordkeeping of hours of operation and fuel consumption. Records of fuel sulfur content. Manufacturer's emissions data.

V. NAAQS ANALYSIS

The NNPH AQMD does not require modeling for stationary sources to demonstrate NAAQS compliance, and therefore, no modeling was required for this source. Area monitoring throughout Washoe County is used to demonstrate compliance with the NAAQS. Table 10 below summarizes Washoe County's current design values in comparison to the NAAQS.

Table 10: Design Values and Attainment Status (as of December 31, 2024)

NAAQS		Design Value	Designations	
Pollutant (Averaging Time)	Level		Unclassifiable/ Attainment, or Maintenance	Non- Attainment (classification)
O ₃ (8-hour)	0.070 ppm	0.066 ppm	All HA's	---
PM _{2.5} (24-hour)	35 µg/m ³	34 µg/m ³	All HA's	---
PM _{2.5} (Annual)	9.0 µg/m ³	7.9 µg/m ³	All HA's	---
PM ₁₀ (24-hour)	150 µg/m ³	1.3 Expected Exceedances	All HA's ¹	---
CO (1-hour)	35 ppm	1.7 ppm	All HA's	---
CO (8-hour)	9 ppm	1.2 ppm	All HA's ²	---
NO ₂ (1-hour)	100 ppb	47 ppb	All HA's	---
NO ₂ (Annual Mean)	53 ppb	10 ppb	All HA's	---

SO ₂ (1-hour)	75 ppb	3 ppb	All HA's	---
Pb (Rolling 3-month average)	0.15 µg/m ³	n/a	All HA's	---

¹ Maintenance Area for PM₁₀ (1st 10-year maintenance plan expires January 6, 2026) [80 FR 76232](#)

² Maintenance Area for CO (2nd 10 year maintenance plan expires October 31, 2026) [81 FR 59490](#)

VI. PUBLIC PARTICIPATION

As this permitting action is for a source taking a VAEI to avoid being subject to Part 70 permitting, the AQMD will provide an opportunity for public participation. A copy of the application, draft Permit to Operate, this TSD, and Notice of Proposed Action (NPA) will be posted to the AQMD website for a 30-day public review period. Persons wishing to comment on this permitting action should refer to the comment submission procedure detailed on the NPA.

VII. RECOMMENDED ACTION

The AQMD recommends issuing a synthetic minor source Permit to Construct to Apple Inc. for the following control devices:

- CT.001, CT.004, CT.007, CT.010, CT.013, CT.016, CT.019, CT.022, CT.025, CT.028, CT.031, CT.034: Selective Catalytic Reduction
- CT.002, CT.005, CT.008, CT.011, CT.014, CT.017, CT.020, CT.023, CT.026, CT.029, CT.032, CT.035: Diesel Oxidation Catalyst
- CT.003, CT.006, CT.009, CT.012, CT.015, CT.018, CT.021, CT.024, CT.027, CT.030, CT.033, CT.036: Diesel Particulate Filters

Date

Brandon Koyama
Environmental Engineer II
Air Quality Management Division
Northern Nevada Public Health

Date

Genine Rosa, MS
Senior Air Quality Specialist
Air Quality Management Division
Northern Nevada Public Health

VIII. ATTACHMENTS

A. List of Emissions Units

A list of all emissions units owned and operated by Apple is shown below in Table 11.

Table 11: List of Emissions Units

EU	Type	Manufacturer	Model No.	Rating	Serial No.	SCC
System A: ENG001- ENG004	Emergency Engine	MTU	16V4000 G43	2,000 kW	N/A	20100102
System B: B.001- B.012	Emergency Engine	Cummins	2750DQLF	2,750 kW	N/A	20100102
CT.001, CT.004, CT.007, CT.010, CT.013, CT.016, CT.019, CT.022, CT.025, CT.028, CT.031, CT.034	Selective Catalytic Reduction	Miratech	SCRC-044-150-450	N/A	N/A	N/A
CT.002, CT.005, CT.008, CT.011, CT.014, CT.017, CT.020, CT.023, CT.026, CT.029, CT.032, CT.035	Diesel Oxidation Catalyst	Miratech	SCRC-044-150-450	N/A	N/A	N/A

CT.003, CT.006, CT.009, CT.012, CT.015, CT.018, CT.021, CT.024, CT.027, CT.030, CT.033, CT.036	Diesel Particulate Filters	Miratech	LTR2-DPF- Filter-Block	N/A	N/A	N/A
System C: C.001- C.012	Emergency Engine	Caterpillar	C175-20	4,000 kW	N/A	20100102
CT.037, CT.040, CT.043, CT.046, CT.049, CT.052, CT.055, CT.058, CT.061, CT.064, CT.067, CT.070	Selective Catalytic Reduction	Miratech	SCRC-044- 150-450	N/A	N/A	N/A
CT.038, CT.041, CT.044, CT.047, CT.050, CT.053, CT.056, CT.059, CT.062, CT.065, CT.068, CT.071	Diesel Oxidation Catalyst	Miratech	SCRC-044- 150-450	N/A	N/A	N/A

CT.039, CT.042, CT.045, CT.048, CT.051, CT.054, CT.057, CT.060, CT.063, CT.066, CT.069, CT.072	Diesel Particulate Filters	Miratech	LTR2-DPF- Filter-Block	N/A	N/A	N/A
System D: D.001- D.012	Emergency Engine	Caterpillar	C175-20	4,000 kW	N/A	20100102
CT.073, CT.076, CT.079, CT.082, CT.085, CT.088, CT.091, CT.094, CT.097, CT.100, CT.103, CT.106	Selective Catalytic Reduction	Miratech	SCRC-044- 150-450	N/A	N/A	N/A
CT.074, CT.077, CT.080, CT.083, CT.086, CT.089, CT.092, CT.095, CT.098, CT.101, CT.104, CT.107	Diesel Oxidation Catalyst	Miratech	SCRC-044- 150-450	N/A	N/A	N/A

CT.075, CT.078, CT.081, CT.084, CT.087, CT.090, CT.093, CT.096, CT.099, CT.102, CT.105, CT.108	Diesel Particulate Filters	Miratech	LTR2-DPF- Filter-Block	N/A	N/A	N/A
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B. List of Insignificant Activities

A list of all insignificant activities owned and operated by Apple is shown below in Table 12.

Table 12: List of Insignificant Activities

IA	Type	Manufacturer	Model No.	Rating	Serial No.
IA001	Diesel Fuel Tank (RMR01)	N/A	N/A	4,000 gal	N/A
IA002	Diesel Fuel Tank (RMR02)	N/A	N/A	5,000 gal	N/A
IA003	Diesel Fuel Tank (RMR03, RMR04)	N/A	N/A	6,700 gal	N/A
IA004	Diesel Fuel Tank (DT-01)	N/A	N/A	250 gal	N/A
IA005	Gasoline Fuel Tank (GT-01)	N/A	N/A	250 gal	N/A
IA006	Diesel Fuel Tank (Well 2, Well 3)	N/A	N/A	300 gal	N/A
IA007	Diesel Fuel Tank (Well 4)	N/A	N/A	660 gal	N/A
IA008- IA009	Emergency Engine	Generac	SD250	250 kW	N/A
IA010	Emergency Engine	Caterpillar	C9	300 kW	N/A

C. Emissions Inventory

[illegible]

Figure 2: B.001 Through B.007 Emissions Calculations

B-009	Design Emergency Generator (3000-01) GenSet Manufacturer: Cummins Model # 770DQGLF Serial # Unknown	Height	24	500	26.12	11.062	186.80	91.300	gal	2.750	1W	SCR (NO)	92%	PSL	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Hot Water = 140,000 Btu/gal
		Diameter (ft)								1.088	1W	SCR (VOC)	86%	PS ₂₀	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Still Cold = 11ppm
		Temperature (°F)										Carb (CO)	77%	PS ₁	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Still Cold = 500 isay
		Est. Volume (ft³)										DPP (PS)	73%	SO ₂	0.00001	lb/glb-hr	0.04	0.01	0.04	0.01	AP-42 Chapter 3, Table 3-4.1	Permitted Emission based on 12 isay
		Vol. Flow Rate (CFM)										CO	0.43	g/glb-hr	5.203	13.01	40.7	1.24	Manufactures Specification	1.340121 kg/W		
		Vol. Flow Rate (DPM3)										NO _x	0.40	g/glb-hr	3.50	8.87	0.81	0.25	Manufactures Specification			
												VOC	0.14	g/glb-hr	1.14	0.28	0.16	0.05	Manufactures Specification			
												HAPs	0.011	g/glb-hr	0.11	0.03	0.11	0.03	AP-42 Chapter 3, Table 3-4.3 & 3-4.4			
B-010	Design Emergency Generator (3000-01) GenSet Manufacturer: Cummins Model # 770DQGLF Serial # Unknown	Height	24	500	26.12	11.062	186.80	91.300	gal	2.750	1W	SCR (NO)	92%	PSL	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Hot Water = 140,000 Btu/gal
		Diameter (ft)								1.088	1W	SCR (VOC)	86%	PS ₂₀	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Still Cold = 11ppm
		Temperature (°F)										Carb (CO)	77%	PS ₁	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Still Cold = 500 isay
		Est. Volume (ft³)										DPP (PS)	73%	SO ₂	0.00001	lb/glb-hr	0.04	0.01	0.04	0.01	AP-42 Chapter 3, Table 3-4.1	Permitted Emission based on 12 isay
		Vol. Flow Rate (CFM)										CO	0.43	g/glb-hr	5.203	13.01	40.7	1.24	Manufactures Specification	1.340121 kg/W		
		Vol. Flow Rate (DPM3)										NO _x	0.40	g/glb-hr	3.50	8.87	0.81	0.25	Manufactures Specification			
												VOC	0.14	g/glb-hr	1.14	0.28	0.16	0.05	Manufactures Specification			
												HAPs	0.008	g/glb-hr	0.11	0.03	0.11	0.03	AP-42 Chapter 3, Table 3-4.3 & 3-4.4			
B-011	Design Emergency Generator (3000-01) GenSet Manufacturer: Cummins Model # 770DQGLF Serial # Unknown	Height	24	500	26.12	11.062	186.80	91.300	gal	2.750	1W	SCR (NO)	92%	PSL	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Hot Water = 140,000 Btu/gal
		Diameter (ft)								1.088	1W	SCR (VOC)	86%	PS ₂₀	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Still Cold = 11ppm
		Temperature (°F)										Carb (CO)	77%	PS ₁	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Still Cold = 500 isay
		Est. Volume (ft³)										DPP (PS)	73%	SO ₂	0.00001	lb/glb-hr	0.04	0.01	0.04	0.01	AP-42 Chapter 3, Table 3-4.1	Permitted Emission based on 12 isay
		Vol. Flow Rate (CFM)										CO	0.43	g/glb-hr	5.203	13.01	40.7	1.24	Manufactures Specification	1.340121 kg/W		
		Vol. Flow Rate (DPM3)										NO _x	0.40	g/glb-hr	3.50	8.87	0.81	0.25	Manufactures Specification			
												VOC	0.14	g/glb-hr	1.14	0.28	0.16	0.05	Manufactures Specification			
												HAPs	0.008	g/glb-hr	0.11	0.03	0.11	0.03	AP-42 Chapter 3, Table 3-4.3 & 3-4.4			
B-012	Design Emergency Generator (3000-01) GenSet Manufacturer: Cummins Model # 770DQGLF Serial # Unknown	Height	24	500	26.12	11.062	186.80	91.300	gal	2.750	1W	SCR (NO)	92%	PSL	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Hot Water = 140,000 Btu/gal
		Diameter (ft)								1.088	1W	SCR (VOC)	86%	PS ₂₀	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Still Cold = 11ppm
		Temperature (°F)										Carb (CO)	77%	PS ₁	0.06	g/glb-hr	0.49	0.12	0.12	0.04	Manufactures Specification	Still Cold = 500 isay
		Est. Volume (ft³)										DPP (PS)	73%	SO ₂	0.00001	lb/glb-hr	0.04	0.01	0.04	0.01	AP-42 Chapter 3, Table 3-4.1	Permitted Emission based on 12 isay
		Vol. Flow Rate (CFM)										CO	0.43	g/glb-hr	5.203	13.01	40.7	1.24	Manufactures Specification	1.340121 kg/W		
		Vol. Flow Rate (DPM3)										NO _x	0.40	g/glb-hr	3.50	8.87	0.81	0.25	Manufactures Specification			
												VOC	0.14	g/glb-hr	1.14	0.28	0.16	0.05	Manufactures Specification			
												HAPs	0.004	g/glb-hr	0.11	0.03	0.11	0.03	AP-42 Chapter 3, Table 3-4.3 & 3-4.4			
Nitrogen Oxide																						
											PM ₁₀	5.83	1.46	1.46	0.45							
											PM _{2.5}	5.83	1.46	1.46	0.45							
											SO ₄	0.54	0.13	0.54	0.16							
											NO _x	624.19	156.10	14.79	14.85							
											CO	41.93	10.49	9.76	2.87							
											VOC	13.68	3.41	4.81	1.49							
											HAPs	1.37	0.14	0.17	0.05							

Figure 3: B.008 Through B.012 Emissions Calculations