Company Name:	Valara Holdings High Performance Compute Center	**Permit Writer:**	Tyler D. Dunlop
Agency Air Number:	2060-0674	**Date:**	September 17, 2025
Permit Number:	CP-50000316 v1.0		

DATE APPLICATION RECEIVED: May 06, 2025

PROJECT DESCRIPTION

Construction of a high performance compute center consisting of twenty-four natural gas fired generators that provide power to the facility throughout the entire year. The facility has requested federally enforceable emissions limitations of 100 TPY for NO_x, CO, and VOC, 25 TPY for total hazardous air pollutants (HAPs), and 10 TPY for any single HAP to remain below Title V, §112(g), and PSD thresholds.

FACILITY DESCRIPTION

SIC CODE: 7374 – Computer Processing and Data Preparation and Processing Services
NAICS CODE: 518210 – Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services

Valara Holdings High Performance Compute Center will host computing services to common ownership entities. The facility will be powered by twenty-four natural gas fired generators throughout the year. Each generator is equipped with selective catalytic reduction (SCR) control devices for NO_x and oxidation catalyst control devices for CO, VOC, formaldehyde, and other HAPs.

OPERATING PERMIT INCORPORATION

Upon completion of construction, the facility will need to request a conditional major operating permit.

EMISSIONS

The facility consists of twenty-four 2103 kW (2820 bhp or 15.84 MMBtu/hr) natural gas fired Cummins C2000N6CD D-6411 generators that provide power to the facility 8760 hours per year. Each generator is equipped with SCR and oxidation catalyst technology to control emissions. Manufacturer specifications provide emission factors for NO_x, CO, VOC, and formaldehyde. These factors are as follows:
NO_x: 0.94 g/bhp-hr
CO: 1.66 g/bhp-hr
VOC: 0.36 g/bhp-hr
Formaldehyde: 0.18 g/bhp-hr

AP-42 emission factors for natural gas 4-stroke lean burn engines were used for PM, SO_2, and HAPs (excluding formaldehyde). The SCR controls NO_x with an efficiency of 90%. The oxidation catalyst controls CO by 93.8%, VOC by 95%, formaldehyde by 92.2%, and other HAPs by 90%. All emission factors assume the engines are operating at 100% load.

Example Calculations
NO_x
Emission Factor: 0.94 g/bhp-hr
Engine Output: 2820 bhp

$$NO_x\ Emissions = 0.94\frac{g}{bph-hr} * 2820\ bhp * \frac{1\ lb}{453.592\ g} = 5.84\frac{lb}{hr}\ per\ engine\ uncontrolled$$

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$$5.84\,\frac{lb}{hr} * 24\ engines = 140.26\,\frac{lb}{hr}\ facility\ wide\ uncontrolled$$

$$140.26\,\frac{lb}{hr} * \frac{8760\,\frac{hr}{yr}}{2000\,\frac{lb}{ton}} = 614.32\,\frac{ton}{yr}\,facility\ wide\ uncontrolled$$

Control Device Efficiency = 90%

$$140.26\,\frac{lb}{hr} * (1 - 0.90) = 14.03\,\frac{lb}{hr}\ facility\ wide\ controlled$$

$$14.03\,\frac{lb}{hr} * \frac{8760\,\frac{hr}{yr}}{2000\,\frac{lb}{ton}} = 61.43\,\frac{ton}{yr}\,facility\ wide\ controlled$$

Formaldehyde
Emission Factor = 0.18 g/bhp-hr

$$Formaldehyde\ Emissions = 0.18\,\frac{g}{bph - hr} * 2820\ bhp * \frac{1\ lb}{453.592\ g} = 1.12\,\frac{lb}{hr}\ per\ engine\ uncontrolled$$

$$1.12\,\frac{lb}{hr} * 24\ engines = 26.86\,\frac{lb}{hr}\ facility\ wide\ uncontrolled$$

$$26.86\,\frac{lb}{hr} * \frac{8760\,\frac{hr}{yr}}{2000\,\frac{lb}{ton}} = 117.64\,\frac{ton}{yr}\,facility\ wide\ uncontrolled$$

Control Device Efficiency = 92.2%

$$26.86\,\frac{lb}{hr} * (1 - 0.922) = 2.09\,\frac{lb}{hr}\ facility\ wide\ controlled$$

$$2.09\,\frac{lb}{hr} * \frac{8760\,\frac{hr}{yr}}{2000\,\frac{lb}{ton}} = 9.18\,\frac{ton}{yr}\,facility\ wide\ controlled$$

VOC
Emission Factor = 0.18 g/bhp-hr

$$VOC\ Emissions = 0.36\,\frac{g}{bph - hr} * 2820\ bhp * \frac{1\ lb}{453.592\ g} = 2.24\,\frac{lb}{hr}\ per\ engine\ uncontrolled$$

$$2.24\,\frac{lb}{hr} * 24\ engines = 53.72\,\frac{lb}{hr}\ facility\ wide\ uncontrolled$$

$$53.72\,\frac{lb}{hr} * \frac{8760\,\frac{hr}{yr}}{2000\,\frac{lb}{ton}} = 235.27\,\frac{ton}{yr}\,facility\ wide\ uncontrolled$$

Control Device Efficiency = 95%

$$53.72\,\frac{lb}{hr} * (1 - 0.95) = 2.69\,\frac{lb}{hr}\ facility\ wide\ controlled$$

$$2.69\,\frac{lb}{hr} * \frac{8760\,\frac{hr}{yr}}{2000\,\frac{lb}{ton}} = 11.76\,\frac{ton}{yr}\,facility\ wide\ controlled$$

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Note that all calculations are performed without rounding until the final facility emission values are obtained.

PROJECT EMISSIONS						
Pollutant	**Uncontrolled**		**Controlled**		**PTE**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
PM	3.80	16.63	--	--	3.80	16.63
PM_{10}	3.80	16.63	--	--	3.80	16.63
$PM_{2.5}$	3.80	16.63	--	--	3.80	16.63
SO_2	0.22	0.98	--	--	0.22	0.98
NO_x	140.26	614.32	14.03	61.43	140.26	<100.0
CO	247.69	1084.87	15.36	67.26	247.69	<100.0
Total VOC*	80.57	352.91	4.78	20.94	80.57	<100.0
Formaldehyde (HAP)	26.86	117.64	2.09	9.18	26.86	<10.0
Acetaldehyde (HAP)	3.18	13.92	0.32	1.39	3.18	<10.0
Other HAPs	4.20	18.37	0.42	1.84	4.20	<10.0
Total HAPs	34.23	149.93	2.83	12.41	34.23	<25.0

*Total VOC emissions are the sum of the calculated VOC and formaldehyde emissions.
Emissions calculations vary between the facility and SCDES due to differences in rounding. The values listed in the table above reflect the most conservative values.

While the above emissions are calculated using emission factors provided in part by specifications for the Cummins C2000N6CD D-6411 generator, the facility may choose to install other model generators, provided they have emissions which will not cause the facility to exceed any limitations established in the permit. The facility shall notify the Department upon requesting the operating permit the quantity, model, and specifications of the generators installed at the facility during construction.

SOURCE TEST REQUIREMENTS

40 CFR 60 Subpart JJJJ requires that the facility purchase a certified engine or conduct performance testing for NO_x, CO, and VOC in accordance with § 60.4243(b)(2)(ii). Under 40 CFR 60 Subpart JJJJ, when calculating emissions of VOC, emissions of formaldehyde should not be included (§ 60.4244(f)).

The facility shall conduct initial and subsequent performance testing for formaldehyde to establish the controlled emission factor for the engines.

REGULATIONS

Applicable - Section II(E) *(Synthetic Minor)*

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Synthetic Minor Limits					
Permit ID	**Equipment ID**	**Permit Issue Date**	**Pollutant**	**Emission Limit (TPY)**	**Explanation**
CP-50000316 v1.0	Facility Wide	This Permit	NO_x	<100.0 (TV) <250.0 (PSD)	Facility is requesting a limit on NO_x emissions to remain below PSD and Title V thresholds.
CP-50000316 v1.0	Facility Wide	This Permit	CO	<100.0 (TV) <250.0 (PSD)	Facility is requesting a limit on CO emissions to remain below PSD and Title V thresholds.
CP-50000316 v1.0	Facility Wide	This Permit	VOC	<100.0 (TV) <250.0 (PSD)	Facility is requesting a limit on VOC emissions to remain below PSD and Title V thresholds.
CP-50000316 v1.0	Facility Wide	This Permit	Single HAP	<10.0	Facility is requesting a limit on single HAP emissions to remain below Title V and §112(g) thresholds.
CP-50000316 v1.0	Facility Wide	This Permit	Total Combined HAPs	<25.0	Facility is requesting a limit on total HAPs emissions to remain below Title V and §112(g) thresholds.

To comply with the federally enforceable limits in the table above, the facility will maintain records adequate enough to calculate a 12-month rolling sum for these pollutants and will operate and maintain control devices in accordance with manufacturer's emission-related written instructions (§ 60.4243). The facility shall meet specified monitoring, recordkeeping, and reporting requirements detailed in the construction permit.

Not Applicable - Standard No. 1 *(Emissions from Fuel Burning Operations)*
This facility does not have any fuel burning operations as defined in SC Regulation 61-62.1 Section I(31). The facility's natural gas engines are not used for the purpose of indirect heating.

Not Applicable - Standard No. 3 (state only) *(Waste Combustion and Reduction)*
This facility does not have any waste combustion and reduction activities. The engines only burn natural gas meeting the definition of virgin fuel as defined in SC Regulation 61-62.1 Section I(99).

Applicable - Standard No. 4 *(Emissions from Process Industries)*
This facility is not one of the listed process industries in the standard. Section VIII does not apply to this facility because the PM emissions at this facility are only a result of the combustion of liquids or gases used solely as fuel. Therefore, the facility does not have a process weight as defined in SC Regulation 61.62.1Section I(73). The facility is subject to the 20% opacity limit in section IX of this standard.

Not Applicable - Standard No. 5 *(Volatile Organic Compounds)*

The facility does not meet the definition of an existing process (SC Regulation 61-62.5, Standard No. 5, Section I(A)(18)) as it was not in existence or under construction prior to July 1, 1979/1980. This facility does not match the description of any of the plants described in Section II of this standard to meet the applicability in Section I(B)(2).

Not Applicable - Standard No. 5.2 *(Control of Oxides of Nitrogen (NOx))*
The generators at this facility are stationary combustion sources constructed after June 25th, 2004. However, the generators are also subject to 40 CFR 60 Subpart JJJJ, which has the same limit as this standard. Section I(B)(7) of this standard exempts any equipment from this standard which has a more stringent or equivalent limit from 40 CFR 60, 61, or 63.

Not Applicable - Standard No. 7 *(Prevention of Significant Deterioration)*
This facility has control technologies equipped on its generators to keep its potential to emit regulated pollutants below 250 TPY. Additionally, this facility is requesting federally enforceable limits on NO_x, CO, and VOC to remain below the 250.0 TPY threshold. Therefore, this facility is not a major source as defined in Section B(32)(a) of this standard. The facility isn't one of the listed categories in B(32)(a) that have a major source threshold of 100 TPY.

Applicable - 61-62.6 *(Control of Fugitive Particulate Matter)*
This facility is subject to section III of this standard.

40 CFR 60 and 61-62.60 *(New Source Performance Standards (NSPS))*

Applicable – Subpart JJJJ (*Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*)
The generators at this facility are spark ignition engines fired on natural gas. The engines are being constructed after the applicable construction date of June 12, 2006.

The facility is required under § 60.4243(b)(2)(ii) to conduct an initial performance test and subsequent performance testing every 8760 hours of operation or every 3 years, whichever comes first. Under Subpart A § 60.8(b)(4), the Department may consider a waiver for the facility to test a subset of engines as representative for continuing performance tests (those after the initial performance test). This waiver would be contingent on the results of the initial performance tests and the facility fulfilling the criteria set forth in Section VII(2) of the document "Clean Air Act National Stack Testing Guidance" published by the EPA in 2009. This criteria is as follows:

(1) the units are located at the same facility;
(2) the units are produced by the same manufacturer, have the same model number or other manufacturer's designation in common, and have the same rated capacity and operating specifications;
(3) the units are operated and maintained in a similar manner; and
(4) the delegated agency, based on documentation submitted by the facility,
    (a) determines that the margin of compliance for the identical units tested is significant and can be maintained on an on-going basis; or
    (b) determines based on a review of sufficient emissions data that, though the margin of compliance is not substantial, other factors allow for the determination that the variability of emissions for

identical tested units is low enough for confidence that the untested unit will be in compliance.[3] These factors may include, but are not limited to, the following:

(i) historical records at the tested unit showing consistent/invariant load;
(ii) fuel characteristics yielding low variability (e.g., oil) and therefore assurance that emissions will be constant and below allowable levels;
(iii) statistical analysis of a robust emissions data set demonstrates sufficiently low variability to convey assurance that the margin of compliance, though small, is reliable.

The Department will also consider any air quality concerns in the area when the request for a waiver is submitted.

40 CFR 61 and 61-62.61 *(National Emission Standards for Hazardous Air Pollutants (NESHAP))*

Not Applicable - This facility does not emit the pollutants in a way that is subject to this standard (asbestos, benzene, beryllium, coke oven emissions, arsenic, mercury, radionuclides, radon, or vinyl chloride).

40 CFR 63 and 61-62.63 *(National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories)*

Applicable – Subpart ZZZZ (*National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*)
The generators at this facility are stationary reciprocating engines which are subject to 40 CFR 60 Subpart JJJJ. By complying with Subpart JJJJ, the facility will comply with Subpart ZZZZ as established in § 63.6590(c).

Not Applicable - 61-62.68 *(Chemical Accident Prevention Provisions)*
This facility does not store any chemicals applicable to this standard.

Not Applicable - 40 CFR 64 *(Compliance Assurance Monitoring)*
This facility is taking emission limits to avoid becoming a Title V facility.

AMBIENT AIR STANDARDS REVIEW

Applicable - Standard No. 2 *(Ambient Air Quality Standards)*
See modeling summary dated September 17, 2025

Not Applicable - Standard No. 8 (state only) *(Toxic Air Pollutants)*
This facility only burns natural gas which is a virgin fuel. Therefore, this standard is not applicable.

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PERIODIC MONITORING					
Equipment ID	**Applicable Requirement (Limiting Condition)**	**Measured Parameter**	**Required Monitoring Frequency**	**Reporting Frequency**	**Monitoring Basis/ Justification (Monitoring Condition)**
GEN	40 CFR 60 Subpart JJJJ (B.5)	--	--	--	Post 11/1990 Federal Regulation. Monitoring inherently adequate.
GEN	40 CFR 63 Subpart ZZZZ (C.3)	--	--	--	Post 11/1990 Federal Regulation. Monitoring inherently adequate.
GEN	Std. 4 20% Opacity (B.4)	Opacity	--	--	Facility is subject to 20% opacity limit as it is constructed after December 31, 1985. Proper operation and maintenance of generators as required under 40 CFR 60 Subpart JJJJ should be adequate. No further monitoring required.
GEN	Std. 2 (I.1)	Temperature	Every 15 minutes	On-site Records	Controlled emissions were modeled so demonstration of proper operation of control device is required. (B.14)
Facility	<100.0 & <250.0 TPY NO_x, CO, and VOC (B.1)	Calculated Emissions	Monthly	Semiannual	Direct comparison to limits (B.2, B.3). Proper operation and maintenance of control device(s) is required (B.14).
Facility	<10.0 TPY Single HAP (B.1)	Calculated Emissions	Monthly	Semiannual	Direct comparison to limit (B.2). Proper operation and maintenance of control device(s) is required (B.14).
Facility	<25.0 TPY Total Combined HAPs (B.1)	Calculated Emissions	Monthly	Semiannual	Direct comparison to limit (B.2). Proper operation and maintenance of control device(s) is required (B.14).

PUBLIC NOTICE

This construction permit(s) has undergone a 30-day public notice period, in accordance with SC Regulation 61-62.1, Section II(N) and SC Regulation 61-62.1, Section II(E)), to establish federally enforceable limits on NO_x, CO, VOC, Single HAP, and Total Combined HAP. The comment period was open from July 18, 2025 to August 16, 2025 and the draft permit was placed on the BAQ website during that time period. Comments were received during the comment period.

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SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.