D R A F T

FACT SHEET FOR: OP25S2-008 **DATE:**

NDEE ID: 117197

Name of Source: Westwood Solutions LLC

Source Classification: Class II Synthetic Minor at time of issuance
Area Source of Hazardous Air Pollutants (HAPs)

Regulatory changes may supersede information in this document. If the source should add or change equipment or change processes such that a NESHAP or NSPS subpart becomes an applicable requirement, it is the source's obligation to comply with that subpart and applicable requirements whether or not they are identified in the associated permitting action or Title 129. Also note that the NESHAP and NSPS subparts are subject to change. Detailed information related to NESHAP and NSPS subparts can be found on the NDEE Air Toxics Notebook and NDEE NSPS Notebook located on the NDEE website (http://dee.ne.gov/). The NDEE website can also be used to find other permit related and facility specific information that is not identified in this fact sheet.

DESCRIPTION OF THE SOURCE OR ACTIVITY:

This operating permit, OP25S2-008 approves the operation of an existing electronic data center which includes diesel-fired emergency generators equipped with belly tanks that will provide backup electricity to facility operations in the event of a loss of power from the grid or other emergency event. The facility also has an emergency fire pump and cooling towers.

Data centers typically contain physical and virtual infrastructure to house computer, server and networking systems and components for information technology needs, which involve storing, processing and serving large amounts of electronic data to clients.

PERMIT HISTORY

Date Issued	Number	Status
03/31/2023	CP22-003	Active
TBD	OP25S2-008	Active

PERMIT ACTION:

Permitted Emission Points are detailed in the table below:

Emission Point			
Control Equipment ID# and Description	**Emission Unit Description**	**Applicable NSPS Requirements**	**Applicable NESHAP Requirements**
Emission Point ID#: B1G1 - B1G34, B2G18 - B2G34			
None	EUs (51 units): Type 1 Emergency Generator Engines; maximum capacity: 25.5 MMBtu/hr (each engine); permitted fuel: ultra-low sulfur diesel; manufacture: post 2022, installation:	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section 001.01	40 CFR Part 63, NESHAP Subpart A; Title 129, Chapter 13, Section 002.01

	2024 and 2025	40 CFR Part 60, NSPS Subpart IIII; Title 129, Chapter 12, Section 001.80	40 CFR Part 63, NESHAP Subpart ZZZZ; Title 129, Chapter 13, Section 002.78
Emission Point ID#: B2G2 - B2G17			
None	EUs (16 units): Type 1 Emergency Generator Engines; maximum capacity: 26.7 MMBtu/hr (each engine); permitted fuel: ultra-low sulfur diesel; manufacture: post 2022, installation: 2025	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section 001.01	40 CFR Part 63, NESHAP Subpart A; Title 129, Chapter 13, Section 002.01
		40 CFR Part 60, NSPS Subpart IIII; Title 129, Chapter 12, Section 001.80	40 CFR Part 63, NESHAP Subpart ZZZZ; Title 129, Chapter 13, Section 002.78
Emission Point ID#: B1CG1 - B1CG7, B2CG1 – B2CG7			
None	EUs (14 units): Type 2 Emergency Generator Engines; maximum capacity: 20.6 MMBtu/hr (each engine); permitted fuel: ultra-low sulfur diesel; manufacture: post 2022, installation: 2024	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section 001.01	40 CFR Part 63, NESHAP Subpart A; Title 129, Chapter 13, Section 002.01
		40 CFR Part 60, NSPS Subpart IIII; Title 129, Chapter 12, Section 001.80	40 CFR Part 63, NESHAP Subpart ZZZZ; Title 129, Chapter 13, Section 002.78
Emission Point ID#: HUBGEN			
None	EU (1 unit): HUBGEN Generator Engine; maximum capacity: 2.96 MMBtu/hr permitted fuel: ultra-low sulfur diesel; manufacture: post 2022, installation: 2024	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section 001.01	40 CFR Part 63, NESHAP Subpart A; Title 129, Chapter 13, Section 002.01
		40 CFR Part 60, NSPS Subpart IIII; Title 129, Chapter 12, Section 001.80	40 CFR Part 63, NESHAP Subpart ZZZZ; Title 129, Chapter 13, Section 002.78
Emission Point ID#: FP1			
None	EU (1 unit): Fire Pump Generator Engine; maximum capacity: 1.75 MMBtu/hr permitted fuel: ultra-low sulfur diesel; manufacture: post 2022, installation: 2024	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section 001.01	40 CFR Part 63, NESHAP Subpart A; Title 129, Chapter 13, Section 002.01
		40 CFR Part 60, NSPS Subpart IIII; Title 129, Chapter 12, Section 001.80	40 CFR Part 63, NESHAP Subpart ZZZZ; Title 129, Chapter 13, Section 002.78

Emission Point ID#: B1CT1 -B1CT7, B2CT1 – B2CT7			
None	Process Cooling Towers (14 units) in Buildings 1-2; two (2) cells per tower, 28 total; 5,160 gpm per cell; maximum circulation rate: 144,480 gpm (total)	None	None

TYPE AND QUANTITY OF AIR CONTAMINANT EMISSIONS ANTICIPATED:

The following table summarizes the potential and actual emissions:

Regulated Pollutant	Potential Emissions as limited by permit (tons/year)	Actual Emissions[2] (tons/year)
Particulate Matter (PM)	7.49	N/A
Particulate Matter less than or equal to 10 microns (PM_{10})	5.97	N/A
Particulate Matter less than or equal to 2.5 microns ($PM_{2.5}$)	4.56	N/A
Sulfur Dioxide (SO_2)	0.04	N/A
Oxides of Nitrogen (NO_x)	71.93	N/A
Carbon Monoxide (CO)	24.28	N/A
Volatile Organic Compounds (VOCs)	9.39	N/A
Greenhouse Gases (GHGs)[1]	4,374.15	N/A
Carbon Dioxide Equivalents (CO_2e)[1]	4,388.94	N/A
Hazardous Air Pollutants (HAPs)		
Benzene	0.02	N/A
All Other HAPs	0.02	N/A
Total HAPs	0.04	N/A

[1] The U.S. Supreme Court ruled in 2014 that greenhouse gases (GHGs) may not be used to determine whether a source is a Class I (major) source. Utility Air Regulatory Group v. EPA, 134 S.Ct. 2427 (2014). Therefore, potential emissions of GHGs will not be used to determine a source's operating permit classification at this time. However, GHGs are still regulated air pollutants so GHGs and CO_2e will continue to be calculated and reported in this fact sheet.

[2]Actual Emissions are from air emissions inventories. The source has not yet been required to submit an air emission inventory.

SUPPLEMENTAL INFORMATION:

Title 129, Chapter 12 - New Source Performance Standards (NSPS) and Emission Limits for Existing Sources

The following NSPS are identified as applicable to the source:

40 CFR 60 Subpart A – General Provisions

This subpart, adopted by reference in Title 129, Chapter 12, Section 001.01, applies to those units covered by the specific NSPS as discussed below. The source is required to submit notification of the date construction commenced postmarked no later than 30 days after such date (40 CFR 60.7(a)(1)), and

notification of the actual date of initial start-up of the equipment postmarked within 15 days after such date (40 CFR 60.7(a)(3)).

Subpart IIII - Stationary Compression Ignition Internal Combustion Engines: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.80, applies to new, modified and reconstructed compression ignition (CI) internal combustion engines (ICE). New engines are subject to this regulation if construction of the CI ICE commenced after July 11, 2005, and if the engine was manufactured after April 1, 2006, for CI ICE that are not fire pump engines, or after July 1, 2006, for CI ICE that are fire pump engines. This rule is applicable to the CI ICE and the fire pump that will be operated at the facility. The engines will each be classified as emergency engines under this regulation.

The Type 1 and Type 2 engines will be certified to meet the EPA Tier 2 standards for nonroad engines. The HUB engine will be certified to meet the EPA Tier 3 standards for nonroad engines. The EPA Tier standards are an NSPS requirement but do not establish the emission limit for the engines because the Tier standards are based on a weighted cycle and cannot be used for comparison to the actual emissions from the engine. In addition, the diesel fire pump will be required to meet the standards in 40 CFR Part 60 Subpart IIII Table 4. The emission calculations rely on not-to-exceed values provided by the vendors for the emergency engines and on AP-42 for the fire pump engine.

In order for a stationary engine to be considered an emergency ICE under NSPS Subpart IIII, it must meet the run time restrictions in 40 CFR 60.4211(f). There is no restriction on use of an emergency ICE in emergency situations within the requirements of NSPS Subpart IIII, though other requirements may limit the emergency operations of the engines. Each engine is restricted to a maximum of 100 hours per calendar year of operation for maintenance checks and readiness testing. Each engine is allowed up to 50 hours per calendar year of non-emergency operation other than maintenance, testing and demand response; however, any non-emergency run time must be counted as part of the 100 hours per calendar year for maintenance and testing. The source will equip each emergency ICE with a non-resettable hour meter prior to startup of the unit in order to verify compliance with the run time restrictions for emergency and non-emergency operations. An Initial Notification under NSPS Subpart A is not required for emergency stationary ICE. The facility will retain records of the emergency and non-emergency operations for each engine as recorded through the engine's non-resettable hour meter.

The following NSPS are identified as not applicable to the source:

Subpart Kb – Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction or Modification Commenced after July 23, 1984: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.19, applies to volatile organic liquid (VOL) storage vessels, including petroleum liquid storage vessels that were constructed, reconstructed or modified after July 23, 1984, and on or before October 4, 2023. VOL storage tanks are subject to this rule only if they meet one of the following criteria:

- The storage vessel has a maximum storage capacity greater than or equal to 151 m^3 (39,890 gallons) and stores a VOL with a maximum true vapor pressure exceeding 3.5 kilopascals (kPa) [0.51 pounds per square inch absolute (psia)]; or
- The storage vessel has a maximum storage capacity greater than or equal to 75 m^3 (19,812.9 gallons) but less than 151 m^3 and stores a VOL with a maximum true vapor pressure exceeding 15.0 kPa (2.2 psia).

The diesel belly tanks and the diesel fire pump tank will each have a storage capacity less than 19,812.9 gallons. In addition, diesel fuel has a maximum true vapor pressure less than 2.2 psia. Therefore, NSPS Subpart Kb does not apply to this facility.

Subpart Kc – Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction or Modification Commenced after October 4, 2023: This subpart applies to volatile organic liquid (VOL) storage vessels, including

petroleum liquid storage vessels that were constructed, reconstructed or modified after October 4, 2023. VOL storage tanks are subject to this rule if they have a maximum storage capacity greater than or equal to 20,000 gallons. The diesel belly tanks and the diesel fire pump tank will each have a storage capacity less than 20,000 gallons, therefore, NSPS Subpart Kb does not apply to this facility.

Subpart JJJJ – Stationary Spark Ignition Internal Combustion Engines: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.81, is applicable to new, modified and reconstructed stationary spark ignition (SI) ICE. All of the currently installed and proposed engines for the project will be categorized as CI ICE. As such, NSPS Subpart JJJJ does not apply.

Title 129, Chapter 13, Sections 002 and 003 - National Emission Standards for Hazardous Air Pollutants (NESHAP)

The following NSPS are identified as applicable to the source:

Subpart A – General Provisions: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.01, applies to all sources subject to a NESHAP standard unless otherwise stated in the rule. Westwood Solutions is subject to this subpart because it is subject to Subpart ZZZZ.

Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.78, is applicable to stationary reciprocating internal combustion engines (RICE) operated at a major or area source of HAP emissions. The emergency engines at the source are subject to this subpart, with the source classified as an area source for HAP emissions. However, in accordance with 40 CFR 63.6590(c), for new or reconstructed stationary RICE located at an area source of HAP emissions, the only requirement under Subpart ZZZZ is to meet the requirements of NSPS Subpart IIII for CI ICE. The units will also be in compliance with NESHAP Subpart ZZZZ because the proposed CI ICE at the facility will be in compliance with NSPS Subpart IIII.

The following NESHAP are identified as not applicable to the source:

40 CFR 63, Subpart Q – Industrial Process Cooling Towers:

This subpart, adopted by reference in Title 129, Chapter 13, Section 002.09, applies to industrial process cooling towers that are operated with chromium-based water treatment chemical and are either Major Sources or located at Major sources of HAPs. The non-contact induced draft cooling towers at the source do not use chromium, and Fireball is an area source of HAP emissions. Therefore, Subpart Q does not apply.

40 CFR 63, Subpart EEEE – Organic Liquids Distribution (Non-Gasoline):

This subpart, adopted by reference in Title 129, Chapter 28, Section 002.58, applies to affected sources at organic liquids distribution (non-gasoline) operations, including storage tanks, at Major Sources of HAPs. This regulation does not apply since the source is an area source of HAP emissions and is not a gasoline distribution facility.

Title 129, Chapter 15 - Compliance

Process Weight Rate

Title 129, Chapter 15, Section 001.01, limits PM (filterable) emissions to the amounts shown in Table 15-1 during any one hour. These process weight rate limits, which are based on throughput of the emission units, vary as throughputs change. Since the potential to emit for each emission point is less than the process weight rate limitations, these PM limitations were not included in Condition III of this permit.

Particulate Emissions from Combustion Sources

All of the PM emission points subject to the Chapter 15, Section 001.02 limitations are in compliance with those limitations, as the potential to emit for each emission point is less than the limitations. Therefore, these PM limitations were not included in Condition III of this permit.

Opacity Limitations from Emission Units (Section 001.04)

Specific Condition I.(J) specifies that no person shall cause or allow emissions, from any source, which has an opacity equal to or greater than twenty percent (20%). Opacity must be determined using an EPA-approved method or recorded by a continuous opacity monitoring system which has been operated and maintained pursuant to 40 CFR Part 60 Appendix B except as provided for in Chapter 15, Sections 001.05 and 001.05E [Title 129, Chapter 15, Section 001.04].

SPECIFIC PERMIT CONDITIONS DISCUSSION:

Condition III includes conditions that are specific to the emissions units and emission points listed in each respective condition. Permit conditions that require no additional discussion are not included in this section.

III.(A) Specific Conditions for Emergency Generator Engines

(A)(1)(a) This condition authorizes the operating conditions of the emergency engines described in the application with the identified fuel type. This condition also specifies that the source must comply with all applicable operating, monitoring, recordkeeping, and reporting requirements for compliance with NSPS Subparts A and IIII, and NESHAP Subparts A and ZZZZ.

(A)(2)(a) Emission limits for PM, NO_x, CO, and VOC (expressed as NMHC) are derived using not-to-exceed values for emissions data from the engines' manufacturers. The manufacturer states in the emissions data sheets that calculated values are not proven by tests and therefore the accuracy cannot be guaranteed. Therefore, initial and ongoing performance testing will be required to be conducted on a subset of the generators to verify the accuracy of the emissions data.

(A)(2)(c) Requires the source to conduct ongoing performance testing on ten percent (10%) of all installed engines. For example, if 15 Type I engines and 5 Type II engines are installed, the number to test would be two (2) (10% of 15 = 1.5, rounded up to two (2) Type I engines and one (1) (10% of 5 = 0.5, rounded up to 1) Type II engine.

(A)(2)(c)(i) Requires the source to conduct ongoing testing of all constructed engines on a rotating basis. Rotating basis means that the selection of engines of each type to be tested will be engines that have not been previously tested. Once all the engines have undergone performance tests, previously tested engines may be included again. Regular ongoing performance testing is required, as performance testing at data centers in other states have shown a significant variation in performance testing results among engines of the same type.

(A)(2)(c)(i)1. If any engine fails its performance test, it must be retested within 90 days. If the engine fails its retest, a four (4) of the same type of engine (Type 1 or Type 2) must be tested as a means of demonstrating compliance with permit limits.

(A)(3)(a) Each generator engine is limited to 500 emergency operating hours (and 100 hours of non-emergency operation as prescribed in 40 CFR 60.4211(f) and 40 CFR 63.6640(f)) per rolling 12-month period so that they are considered emergency generator engines and do not need to be included in a 1-hour NO_2 modeling analysis. Compliance is demonstrated with each emergency engine having an installed and operating non-resettable hour meter to record operating hours.

Per the factsheet for Construction Permit CP22-003, the source is required to meet modeled input file parameters to restrict maintenance and testing operation of the emergency engines to no more than eight (8) engines at one time to between 7:00 up until 7:00 PM CDT/CST to

ensure the assumptions used in the air quality impact analysis remain valid. It is the NDEE's understanding that a test for readiness on an emergency engine generally takes between 30 minutes to four (4) hours per engine. The time interval prescribed in Condition III.(A)(3)(a)(iii) allows for a test to be completed in the time period prescribed as well as for the source to operate under other non-emergency situations.

The limitation on the hours of operations for non-emergency situations prescribed in Condition III.(A)(3)(a)(iii) align with EPA's Tyler Fox Memorandum entitled "Additional Clarification Regarding Application of Appendix W modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard" dated March 1, 2011:

> "Another aspect of intermittent emissions worth noting is the distinction between intermittent emissions that can be schedule with some degree of flexibility vs. intermittent emissions that cannot be scheduled. For example, a portion of emissions from an emergency generator are likely to be associated with regular testing of the equipment that may be required to ensure its reliable operation, while that portion of emergency generator emissions associated with actual emergency use typically cannot be scheduled. In this case it may be appropriate to include a permit condition that restricts operation of the emergency generator during testing certain hours of the day, which may mitigate that source's contribution to ambient NO_2 levels based on dispersion conditions."

While placing such limitations, the NDEE also considers meteorological conditions in order to minimize impacts. Limiting non-emergency operating hours to begin no earlier than 7:00 AM and to be completed no later than 7:00 PM takes advantage of hours of maximum convective vertical dispersion, which in turn limit ground level concentrations of NO_2 from emergency engines.

(A)(3)(b) Requirements to allow for alternative operating scenario for large-scale electrical infrastructure maintenance of equipment owned by the source. Large-scale electrical maintenance is any maintenance on the electrical system that requires a longer maintenance duration and/or number of engines outside the restrictions otherwise required.

This prescribes limitations for non-emergency operations of the engines for the purposes of maintenance and testing of the engines themselves; prescribes limitations for non-emergency operations of engines for purposes of large-scale electrical infrastructure maintenance to be conducted in accordance with the National Fire Protection Association (NFPA) standards. Regardless of the operating scenario, the engines are subject to hour limitations prescribed for non-emergency situations in 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ.

During operation of engines for the purposes of NFPA testing, it is NDEE's understanding that the maximum number of engines that can physically be operated based on the design of the facility is 18 engines at one time. In addition, as indicated by the source, when operating the emergency stationary engines for the purpose of NFPA testing, the facility will minimize the runtime of each engine as necessary to complete testing. It is NDEE's understanding that NFPA testing of electrical equipment is designed to ensure safety of employees and reliability of the electrical systems. The tests are designed to maximize reliability to the data center electrical systems, which in turn decreases the likelihood that the emergency engines will be used for emergency power.

The source is permitted to run the additional engines not to exceed twenty (20) calendar days per calendar year, only during the hours of 6:00 a.m. to 9:00 p.m. CDT/CST and only during the months of March through November. The hours of operation and time of the year were considered when drafting the condition to ensure minimization of NO_2 levels based on dispersion conditions.

(A)(3)(c) Construction Permit CP22-003, issued March 31, 2023, limited fuel usage limit of 844,550 gallons per rolling 12-month period to maintain particulate matter emissions below Nebraska's thresholds for air dispersion modeling. In operating permit application OP25S2-008 and its addendum, the source requested to limit fuel usage rates to 391,607 gallons per rolling 12-month period for all permitted generator engines keeps the facility in a Class II synthetic minor operating permit status. This limit will be verified using engine-generator controllers that calculate the fuel consumption for each unit based on load, speed and run-time, required in Condition III.(A)(3)(c)(i).

(A)(3)(d) Requires the source to comply with all of the applicable operational and monitoring requirements and limitations of NSPS Subparts A and IIII.

.(A)(3)(e) Limits the source to only operating no more than eight (8) engines at one time for non-emergency operations. This is the current standard for data centers as it prevents them from testing all engines at once and lessens the direct impact of emissions.

(A)(3)(f) Requires the source to maintain a 150-foot distance from the fence line to any emergency engine. This was a modeling requirement and allows for some air dispersion before the emissions reach the ambient air.

(A)(3)(h) If the source doesn't install, configure, operate and maintain the engines according to manufacturer's written instructions, additional records including, but not limited to, a maintenance plan and records of conducted maintenance shall be kept. To demonstrate compliance with emission limitations, performance testing will be performed within one (1) year, and subsequent performance testing for every 8760 hours of engine operation or every three years, whichever comes first.

(A)(3)(i) Visible emission surveys are only required during periods of operation during daylight hours. NDEE considers normal operations as those periods of time when any engine is carrying load or providing electricity for the site. This includes periods of emergency operations and large-scale electrical infrastructure maintenance evolutions when building load is supported by engines. Engine operations during monthly and/or annual testing and engine operations with a duration of one (1) hour or less are not considered normal operations for purposes of this condition as the engines are not anticipated to carry load or provide electricity during these events. Records of the surveys are to be kept, per Condition III.(A)(4)(d), to demonstrate compliance with Title 129, Chapter 15, Section 001.04 and must be kept onsite.

III.(B) Specific Conditions for Emergency Cooling Towers

(B)(2)(b) Requirement for the source to be limited to 3,200 ppm for TDS concentration of any grab sample from the cooling tower water. This verifies the assumptions made in the PTE calculations submitted in the permit application based on the design basis for the towers.

(B)(3)(a) Limits Westwood to a drift loss of 0.0005 percent for each cooling tower to verify assumptions made in PTE calculations. The only practical way to ensure this is to maintain the manufacturer's certification.

Insignificant Activities

The following table contains a description of insignificant activities at the source at the time of permit issuance, in accordance with operating permit application OP25S2-008, received February 27, 2025, including any supporting information received prior to issuance of the permit:

Insignificant Activity ID	Unit Description	Insignificance Criteria
-	Welding : Brazing Soldering, and welding equipment, and cutting torches related to manufacturing and construction activities.	HAP emissions less than reporting levels in Title 129 Appendix I
Engine Belly Tanks to EUs B1G1 – B1G34, B2G2 – B2G34, B1CG1 – B1CG7, B2CG1- B2CG7, HUBGEN, and FP1	Diesel storage tanks, maximum capacity: 4,961 gallons (each), installation: 2024	Annual Fuel Throughput for Entire Facility < 1,000,000 Gallons

Although not required, NDEE recommends that the source submit a written notification to NDEE if there are additions or changes to the list of insignificant activities identified above, containing the following suggested information:

- A brief description of the addition or change within the permitted source;
- The date on which the addition or change occurred;
- Any change in potential emissions; and
- The criteria, as defined the in Operating Permit Application Forms, used to determine that the addition or change to the list of insignificant activities qualifies as insignificant.

This notification helps the NDEE keep an up to date list on file for compliance purposes. In addition, because emissions from insignificant activities must be counted toward major source (Class I) applicability, it is important to know if a source makes additions or changes to the list of insignificant activities that would cause a change in potential to emit at the source, and ultimately whether the source has a change in classification (i.e., Class I vs. Class II).

REVISED SPECIFIC PERMIT CONDITIONS:

The following terms and conditions from the construction permit(s) listed were not incorporated into this permit, or have been modified as discussed below:

Permit Number and Issuance Date	Specific Condition	Reason Modified or Not Included In Operating Permit
#CP22-003 March 31, 2023	III.(A)(1)	Some Type 1 Emergency Generator Engines (B2G2 – B2G17) had a capacity of 26.7 MMBtu/hr; higher than that specified in CP22-003. The source submitted an equipment update on April 15, 2024 per Condition II.(E).
#CP22-003 March 31, 2023	III.(A)(2)(b)	Initial screening of NO_X emissions had to be completed within 60 days of the commencement of operations.
#CP22-003 March 31, 2023	III.(A)(2)(c)	Initial performance testing for the emission units in Condition III.(A)(1) have been completed.

#CP22-003 March 31, 2023	III.(A)(2)(d)	The operating permit does not include emission units that have not yet been installed. CP22-003 permits 136 Type 1 emergency generator engines, and 40 Type 2 emergency generator engines. This OP has 67 Type 1 emergency generator engines, and 14 Type 2 emergency generator engines. The requirement for performing testing to be conducted within 180 days of commencement of operations cannot be included as part of the operating permit.

Fact Sheet Attachment

PTE Summary

Site Wide Fuel Limit[1,2] 391,607 gal/yr

Pollutant	Emergency Generators Type 1	Emergency Generators Type 2	HUB Gen/ Booster Gen	Diesel Fire Pump	Storage Tanks	Cooling Towers	Total
	(ton/yr)						(ton/yr)
PM	2.43	-	-	-	-	5.07	7.49
PM_{10}	2.43	-	-	-	-	3.55	5.97
$PM_{2.5}$	2.43	-	-	-	-	2.13	4.56
SO_x	0.04	-	-	-	-	-	0.04
NO_x	71.93	-	-	-	-	-	71.93
CO	24.28	-	-	-	-	-	24.28
VOC	9.33	-	-	-	0.05	-	9.39
GHGs	4,374.15	-	-	-	-	-	4,374.15
CO_2e	4,388.94	-	-	-	-	-	4,388.94
Highest Individual HAP: Benzene	0.02	-	-	-	2.64E-05	-	0.02
Total HAPs	0.04	-	-	-	1.79E-03	-	0.04

[1] The facility requested a fuel limit in CP22-003 for all diesel-fired engines. The PTE presented here assumes the worst-case, which is if Type 1 engines consumed the entire fuel limit. This is worst-case because it assumes that Type 1 engines consumer fuel allocated for Type 2 engines have lower emissions than Type 1 engines. It also assumes that Type 1 engines consumer fuel allocated for the HUB Gen and Diesel Fire Pump, which have significantly lower emissions profiles than Type 1 engines.

[2] Source requested site-wide fuel limit in operating permit application 24S2-008 and addenum, submitted February 27, 2025 and May 5, 2025, respectively.

Fact Sheet Attachment

Gen Type 1: B1G1 - B1G34, B2G2 - B2G34

Hours of Operation[1]	500	hrs/yr	
Number of Units	67	Type 1 Engines	
Diesel Fuel Heat Content	0.137	MMBtu/gal	
Diesel Fuel Capacity	26.7	MMBtu/hr	(B2G2 - B2G17)
Diesel Fuel Capacity	25.5	MMBtu/hr	(B1G1 - B1G34, B2G18 - B2G34)
Facility Wide Fuel Limit	391,607	gal/yr	

Pollutant	Emission Factor by Load With Safety Factor			
	25%	50%	75%	100%
	(gal/hr)			
	60	104	146	186
	(lb/hr)			
NO_x	8.100	18.900	34.800	68.330
CO	7.440	4.640	7.960	8.620
HC (VOC)	2.860	2.653	2.836	2.985
PM	0.744	0.464	0.995	0.796

Pollutant	PTE per engine[1] (lb/gal)	PTE per engine[2] (lb/MMBtu)	PTE per engine[2] (lb/hr)	PTE per engine (tpy)	Fuel Limit PTE for Type 1 (tpy)[3]
PM	1.24E-02	-	1.00	0.25	2.43
PM_{10}[4]	1.24E-02	-	1.00	0.25	2.43
$PM_{2.5}$[4]	1.24E-02	-	1.00	0.25	2.43
SO_x	-	1.52E-03	3.86E-02	9.66E-03	4.06E-02
NO_x[5]	0.37	-	68.33	17.08	71.93
CO	0.12	-	8.62	2.16	24.28
VOC	4.77E-02	-	2.99	0.75	9.33
Hazardous Air Pollutants					
Acetaldehyde	-	2.52E-05	6.43E-04	1.61E-04	6.76E-04

Acrolein	-	7.88E-06	2.01E-04	5.02E-05	2.11E-04
Benzene	-	7.76E-04	1.98E-02	4.95E-03	2.08E-02
Formaldehyde	-	7.89E-05	2.01E-03	5.03E-04	2.12E-03
Naphthalene	-	1.30E-04	3.32E-03	8.29E-04	3.49E-03
Polycyclic Aromatic Hydrocarbons	-	8.20E-05	2.09E-03	5.23E-04	2.20E-03
Toluene	-	2.81E-04	7.17E-03	1.79E-03	7.54E-03
Xylene	-	1.93E-04	4.92E-03	1.23E-03	5.18E-03
Total HAPs	-	1.57E-03	4.01E-02	1.00E-02	4.22E-02
Greenhouse Gases[6]					
CO_2	-	163.05	4,157.87	1,039.47	4,373.93
CH_4	-	6.61E-03	0.17	4.22E-02	0.18
N_2O	-	1.32E-03	3.37E-02	8.43E-03	0.04
GHGs (mass basis)	-	-	4,158.08	1,039.52	4,374.15
GHGs (CO_2e basis)	-	-	4,172.14	1,043.04	4,388.94

[1] NO_x, CO, VOC, and PM emission factors (lb/gal) derived from vendor's confidential emission data sheet by calculating the emission factor for each pollutant at varying loads and then selecting the worst-case lb/gal emission rate for each pollutant. The VOC emission factor assumes all HC is VOC.

[2] SO_2 emission factor from AP-42 Table 3.4-1, based on maximum fuel sulfur content of 15 ppm (ULSD). HAP emission factors from AP-42 Tables 3.4-3 and 3.4-4.

[3] PTE if Type 1 generators combusts the entire proposed facility-wide fuel limit.

[4] Conservatively assuming PM = PM_{10} = $PM_{2.5}$

[5] Note that air dispersion modeling for the annual average utilized an annualized hourly emission rate for NOx, based on the proposed fuel limit.

[6] GHG emission factors from 40 CFR 98, Subpart C, Tables C-1 and C-2. CO_2e is the sum of each GHG pollutant multiplied by its GWP found in 40 CFR 98, Subpart A, Table A-1, as published on October 30, 2009

Fact Sheet Attachment

Gen Type 2: B1CG1 - B1CG7

Hours of Operation [1]	500	hrs/yr
Number of Units	14	Type 2 Engines
Diesel Fuel Heat Content	0.137	MMBtu/gal
Diesel Fuel Capacity	20.6	MMBtu/hr
Facility Wide Fuel Limit	391,607	gal/yr

Pollutant	Emission Factor by Load With Safety Factor			
	25%	50%	75%	100%
	(gal/hr)			
	46	80	115	150
	(lb/hr)			
NO_x	5.000	12.200	23.400	35.770
CO	2.700	2.300	3.800	6.314
HC (VOC)	2.065	1.556	1.263	1.094
PM	0.295	0.189	0.347	0.337

Pollutant	PTE per engine[1] (lb/gal)	PTE per engine[2] (lb/MMBtu)	PTE per engine[2] (lb/hr)	PTE per engine (tpy)	Fuel Limit PTE for Type 1 (tpy)[3]
PM	6.41E-03	-	0.35	8.68E-02	1.26
PM_{10}[4]	6.41E-03	-	0.35	8.68E-02	1.26
$PM_{2.5}$[4]	6.41E-03	-	0.35	8.68E-02	1.26
SOx	-	1.52E-03	3.12E-02	7.80E-03	4.06E-02
NOx[5]	0.24	-	35.77	8.94	46.69
CO	5.87E-02	-	6.31	1.58	11.49
VOC	4.49E-02	-	2.07	0.52	8.79
Hazardous Air Pollutants					
Acetaldehyde	-	2.52E-05	5.19E-04	1.30E-04	6.76E-04
Acrolein	-	7.88E-06	1.62E-04	4.06E-05	2.11E-04

Benzene	-	7.76E-04	1.60E-02	4.00E-03	2.08E-02
Formaldehyde	-	7.89E-05	1.63E-03	4.06E-04	2.12E-03
Naphthalene	-	1.30E-04	2.68E-03	6.70E-04	3.49E-03
Polycyclic Aromatic Hydrocarbons	-	8.20E-05	1.69E-03	4.22E-04	2.20E-03
Toluene	-	2.81E-04	5.79E-03	1.45E-03	7.54E-03
Xylene	-	1.93E-04	3.98E-03	9.94E-04	5.18E-03
Total HAPs	-	1.57E-03	3.24E-02	8.11E-03	4.22E-02
Greenhouse Gases[6]					
CO_2	-	163.05	3,358.91	839.73	4,373.93
CH_4	-	6.61E-03	0.14	3.41E-02	0.18
N_2O	-	1.32E-03	2.72E-02	6.81E-03	0.04
GHGs (mass basis)	-	-	3,359.07	839.77	4,374.15
GHGs (CO_2e basis)	-	-	3,370.44	842.61	4,388.94

[1] NOx, CO, VOC, and PM emission factors (lb/gal) derived from vendor's confidential emission data sheet by calculating the emission factor for each pollutant at varying loads and then selecting the worst-case lb/gal emission rate for each pollutant. The VOC emission factor assumes all HC is VOC.

[2] SO_2 emission factor from AP-42 Table 3.4-1, based on maximum fuel sulfur content of 15 ppm (ULSD). HAP emission factors from AP-42 Tables 3.4-3 and 3.4-4.

[3] PTE if Type 2 generators combusts the entire proposed facility-wide fuel limit.

[4] Conservatively assuming PM = PM10 = PM2.5

[5] Note that air dispersion modeling for the annual average utilized an annualized hourly emission rate for NOx, based on the proposed fuel limit.

[6] GHG emission factors from 40 CFR 98, Subpart C, Tables C-1 and C-2. CO_2e is the sum of each GHG pollutant multiplied by its GWP found in 40 CFR 98, Subpart A, Table A-1, as published on October 30, 2009

Fact Sheet Attachment

Gen: HUBGEN

Hours of Operation [1]	500	hrs/yr
Number of Units	1	HUB Engines
Diesel Fuel Heat Content	0.137	MMBtu/gal
Diesel Fuel Capacity	2.96	MMBtu/hr
Maximum Fuel Throughput	10,800	gal/yr

Pollutant	Emission Factor by Load With Safety Factor			
	25%	50%	75%	100%
	(gal/hr)			
	NA	NA	NA	22
	(lb/hr)			
NO_x	NA	NA	NA	3.130
CO	NA	NA	NA	0.393
HC (VOC)	NA	NA	NA	NA
PM	NA	NA	NA	3.02E-02

Pollutant	PTE per engine[1] (lb/gal)	PTE per engine[2] (lb/MMBtu)	PTE per engine[2] (lb/hr)	PTE per engine (tpy)	Fuel Limit PTE for Type 1 (tpy)[3]
PM	1.40E-03	-	3.02E-02	7.55E-03	7.55E-03
PM_{10}[4]	1.40E-03	-	3.02E-02	7.55E-03	7.55E-03
$PM_{2.5}$[4]	1.40E-03	-	3.02E-02	7.55E-03	7.55E-03
SOx	-	0.29	0.86	0.21	0.21
NOx[5]	1.45E-01	-	3.13	0.78	0.78
CO	1.82E-02	-	0.39	0.10	0.10
VOC	-	0.36	1.07	0.27	0.27
Hazardous Air Pollutants					
1,3-Butadiene	-	3.91E-05	1.16E-04	2.89E-05	2.89E-05
Acetaldehyde	-	7.67E-04	2.27E-03	5.68E-04	5.68E-04

Acrolein	-	9.25E-05	2.74E-04	6.85E-05	6.85E-05
Benzene	-	9.33E-04	2.76E-03	6.90E-04	6.90E-04
Formaldehyde	-	1.18E-03	3.49E-03	8.73E-04	8.73E-04
Naphthalene	-	8.48E-05	2.51E-04	6.28E-05	6.28E-05
Polycyclic Aromatic Hydrocarbons	-	8.32E-05	2.46E-04	6.16E-05	6.16E-05
Toluene	-	4.09E-04	1.21E-03	3.03E-04	3.03E-04
Xylene	-	2.85E-04	8.44E-04	2.11E-04	2.11E-04
Total HAPs	-	3.87E-03	1.14E-02	2.84E-03	2.84E-03
Greenhouse Gases[6]					
CO_2	-	163.05	482.64	120.66	120.66
CH_4	-	6.61E-03	1.96E-02	4.89E-03	4.89E-03
N_2O	-	1.32E-03	3.92E-03	9.79E-04	9.79E-04
GHGs (mass basis)	-	-	482.66	120.67	120.67
GHGs (CO_2e basis)	-	-	484.30	121.07	121.07

[1] NOx, CO, VOC, and PM emission factors (lb/gal) derived from vendor's confidential emission data sheet by calculating the emission factor for each pollutant at varying loads and then selecting the worst-case lb/gal emission rate for each pollutant. The VOC emission factor assumes all HC is VOC.

[2] SO_2 and VOC emission factor from AP-42 Table 3.3-1.. HAP emission factors from AP-42 Table 3.3-2.

[3] PTE if HUB engine combusts fuel at maximum consumption (3 MMBtu/hr) for 500 hr/yr. It is not possible for 1 HUB engine to combust the entirety of the facility-wide fuel limit.

[4] Conservatively assuming PM = PM10 = PM2.5

[5] Note that air dispersion modeling for the annual average utilized an annualized hourly emission rate for NOx, based on the proposed fuel limit.

[6] GHG emission factors from 40 CFR 98, Subpart C, Tables C-1 and C-2. CO_2e is the sum of each GHG pollutant multiplied by its GWP found in 40 CFR 98, Subpart A, Table A-1, as published on October 30, 2009

Fact Sheet Attachment

Gen: BP1

Hours of Operation [1]	0	hrs/yr
Number of Units	0	Booster Engines *(at time of permit issuance, this engine has not yet been installed)*
Diesel Fuel Heat Content	0.137	MMBtu/gal
Diesel Fuel Capacity	2.96	MMBtu/hr
Maximum Fuel Throughput	10,800	gal/yr

Pollutant	Emission Factor by Load With Safety Factor			
	25%	50%	75%	100%
	(gal/hr)			
	NA	NA	NA	21.6
	(lb/hr)			
NO_x	NA	NA	NA	3.130
CO	NA	NA	NA	0.393
HC (VOC)	NA	NA	NA	NA
PM	NA	NA	NA	3.02E-02

Pollutant	PTE per engine[1] (lb/gal)	PTE per engine[2] (lb/MMBtu)	PTE per engine[2] (lb/hr)	PTE per engine (tpy)	Fuel Limit PTE for Type 1 (tpy)[3]
PM	1.40E-03	-	3.02E-02	0.00E+00	0.00E+00
PM_{10}[4]	1.40E-03	-	3.02E-02	0.00E+00	0.00E+00
$PM_{2.5}$[4]	1.40E-03	-	3.02E-02	0.00E+00	0.00E+00
SOx	-	0.29	0.86	0.00	0.00
NOx[5]	1.45E-01	-	3.13	0.00	0.00
CO	1.82E-02	-	0.39	0.00	0.00
VOC	-	0.36	1.07	0.00	0.00
Hazardous Air Pollutants					
1,3-Butadiene	-	3.91E-05	1.16E-04	0.00E+00	0.00E+00
Acetaldehyde	-	7.67E-04	2.27E-03	0.00E+00	0.00E+00

Acrolein	-	9.25E-05	2.74E-04	0.00E+00	0.00E+00
Benzene	-	9.33E-04	2.76E-03	0.00E+00	0.00E+00
Formaldehyde	-	1.18E-03	3.49E-03	0.00E+00	0.00E+00
Naphthalene	-	8.48E-05	2.51E-04	0.00E+00	0.00E+00
Polycyclic Aromatic Hydrocarbons	-	8.32E-05	2.46E-04	0.00E+00	0.00E+00
Toluene	-	4.09E-04	1.21E-03	0.00E+00	0.00E+00
Xylene	-	2.85E-04	8.44E-04	0.00E+00	0.00E+00
Total HAPs	-	3.87E-03	1.14E-02	0.00E+00	0.00E+00
Greenhouse Gases[6]					
CO_2	-	163.05	482.64	0.00	0.00
CH_4	-	6.61E-03	1.96E-02	0.00E+00	0.00E+00
N_2O	-	1.32E-03	3.92E-03	0.00E+00	0.00E+00
GHGs (mass basis)	-	-	482.66	0.00	0.00
GHGs (CO_2e basis)	-	-	484.30	0.00	0.00

[1] NOx, CO, VOC, and PM emission factors (lb/gal) derived from vendor's confidential emission data sheet by calculating the emission factor for each pollutant at varying loads and then selecting the worst-case lb/gal emission rate for each pollutant. The VOC emission factor assumes all HC is VOC.

[2] SO_2 and VOC emission factor from AP-42 Table 3.3-1.. HAP emission factors from AP-42 Table 3.3-2.

[3] PTE if Booster engine combusts fuel at maximum consumption (3 MMBtu/hr) for 500 hr/yr. It is not possible for 1 Booster engine to combust the entirety of the facility-wide fuel limit.

[4] Conservatively assuming PM = PM10 = PM2.5

[5] Note that air dispersion modeling for the annual average utilized an annualized hourly emission rate for NOx, based on the proposed fuel limit.

[6] GHG emission factors from 40 CFR 98, Subpart C, Tables C-1 and C-2. CO_2e is the sum of each GHG pollutant multiplied by its GWP found in 40 CFR 98, Subpart A, Table A-1, as published on October 30, 2009

Fact Sheet Attachment

Gen: FIREPUMP

Hours of Operation [1]	500	hrs/yr
Number of Units	1	Fire Pump Engine
Diesel Fuel Heat Content	0.137	MMBtu/gal
Diesel Fuel Capacity	1.754	MMBtu/hr
Maximum Fuel Throughput	6,400	gal/yr

Pollutant	Emission Factor by Load With Safety Factor			
	25%	50%	75%	100%
	(gal/hr)			
	NA	NA	NA	12.8
	(lb/hr)			
NO_x	NA	NA	NA	1.467
CO	NA	NA	NA	0.342
HC (VOC)	NA	NA	NA	3.85E-02
PM	NA	NA	NA	4.70E-02

Pollutant	PTE per engine[1] (lb/gal)	PTE per engine[2] (lb/MMBtu)	PTE per engine[2] (lb/hr)	PTE per engine (tpy)	Fuel Limit PTE for Type 1 (tpy)[3]
PM	3.67E-03	-	4.70E-02	1.18E-02	1.18E-02
PM_{10}[4]	3.67E-03	-	4.70E-02	1.18E-02	1.18E-02
$PM_{2.5}$[4]	3.67E-03	-	4.70E-02	1.18E-02	1.18E-02
SOx	-	0.29	0.51	0.13	0.13
NOx[5]	1.15E-01	-	1.47	0.37	0.37
CO	2.67E-02	-	0.34	8.55E-02	8.55E-02
VOC	-	0.36	0.63	0.16	0.16
Hazardous Air Pollutants					
1,3-Butadiene	-	3.91E-05	6.86E-05	1.71E-05	1.71E-05
Acetaldehyde	-	7.67E-04	1.35E-03	3.36E-04	3.36E-04

Acrolein	-	9.25E-05	1.62E-04	4.06E-05	4.06E-05
Benzene	-	9.33E-04	1.64E-03	4.09E-04	4.09E-04
Formaldehyde	-	1.18E-03	2.07E-03	5.17E-04	5.17E-04
Naphthalene	-	8.48E-05	1.49E-04	3.72E-05	3.72E-05
Polycyclic Aromatic Hydrocarbons	-	8.32E-05	1.46E-04	3.65E-05	3.65E-05
Toluene	-	4.09E-04	7.17E-04	1.79E-04	1.79E-04
Xylene	-	2.85E-04	5.00E-04	1.25E-04	1.25E-04
Total HAPs	-	3.87E-03	6.72E-03	1.68E-03	1.68E-03
Greenhouse Gases[6]					
CO_2	-	163.05	285.93	71.48	71.48
CH_4	-	6.61E-03	1.16E-02	2.90E-03	2.90E-03
N_2O	-	1.32E-03	2.32E-03	5.80E-04	5.80E-04
GHGs (mass basis)	-	-	285.95	71.49	71.49
GHGs (CO_2e basis)	-	-	286.91	71.73	71.73

[1] NOx, CO, VOC, and PM emission factors (lb/gal) derived from vendor's confidential emission data sheet by calculating the emission factor for each pollutant at varying loads and then selecting the worst-case lb/gal emission rate for each pollutant. The VOC emission factor assumes all HC is VOC.

[2] SO_2 and VOC emission factor from AP-42 Table 3.3-1.. HAP emission factors from AP-42 Table 3.3-2.

[3] PTE if Fire pump engine combusts fuel at maximum consumption (MMBtu/hr) for 500 hr/yr. It is not possible for 1 Fire pump engine to combust the entirety of the facility-wide fuel limit.

[4] Conservatively assuming PM = PM10 = PM2.5

[5] Note that air dispersion modeling for the annual average utilized an annualized hourly emission rate for NOx, based on the proposed fuel limit.

[6] GHG emission factors from 40 CFR 98, Subpart C, Tables C-1 and C-2. CO_2e is the sum of each GHG pollutant multiplied by its GWP found in 40 CFR 98, Subpart A, Table A-1, as published on October 30, 2009

Fact Sheet Attachment

EP: Diesel Fuel Belly Tanks

Product stored #2 Fuel Oil (diesel)

Maximum Fuel Throughput 391,607 gal/yr

Pollutant	% by Weight in Diesel[1] (lb/gal)	PTE[1] (lb/yr)	PTE[1] (tpy)
VOC	-	105.70	0.05
Hazardous Air Pollutants			
Ethylbenzene	0.33	0.35	1.74E-04
Benzene	0.05	0.05	2.64E-05
Cumene	0.30	0.32	1.59E-04
n-Hexane	0.87	0.92	4.60E-04
Toluene	0.33	0.35	1.74E-04
Xylene	0.63	0.67	3.33E-04
Naphthalene	0.87	0.92	4.60E-04
Total HAPs	3.38	3.57	1.79E-03

[1] Based on estimates obtained from Tanks ESP program. The Tanks ESP output for each type was multiplied by the number of tanks of each type (67 for Type 1; 14 for Type 2). The throughputs input into Tanks ESP was based on assuming the fuel limit was allocated to each tank proportional to its size.

Fact Sheet Attachment

Cooling Towers: B1CT1 -B1CT7, B2CT1 - B2CT7

Circulation rate:	144,480	gal/min
	8,668,800	gal/hr
	75,938,688	Mgal/yr (based on 8,760 hrs/yr)
Number of Towers:	14	
Number of Cells/Tower:	2	
Total Number of Cells:	28	
Drift loss percent:	0.0005	%
Water density:	8.34	lbs/gal
TDS concentration:	3,200	ppm single sample event

Emission Factor Calculation for PM and PM_{10}

Emission factor equation from AP-42, Section 13.4-2 (01/1995)

PM emission factor = $\left(\frac{ppm\ TDS}{1{,}000{,}000\ lbs\ water}\right)\left(\frac{8.34\ lbs}{gal}\ water\right)\left(\frac{1{,}000\ gal}{1\ Mgal}\right)\left(\frac{0.001}{100}\ driftloss\right)$

PM emission factor = 1.33E-04 lbs/Mgal single sample event (highest hourly rate)

Hourly Emissions = (lbs/Mgal single sample event)(hourly throughput gal/hr)(1 Mgal/1,000 gal)
Annual Emissions = (lbs/Mgal average annual rate)(annual throughput Mgal/yr)/(2,000 lbs/ton)

Cooling Tower Emission Summary

Pollutant	Potential Emissions	
	(lbs/hr)	(tpy)
PM	1.16	5.07
PM_{10} [1]	0.81	3.55

$PM_{2.5}$ [1]	0.49	2.13

[1] PM10 and PM2.5 Emission Factors conservatively estimated based on "Final Methodology to Calculate PM10 and PM2.5 Significance Threhsolds, Appendix A", South Coast Air Quality Management District (October 2006).