DOCKETED

Docket Number:	17-SPPE-01
Project Title:	McLaren Backup Generating Facility
TN #:	222096-1
Document Title:	Application for Small Power Plant Exemption for McLaren Backup Generating Facility - Appendix E-2_Part 1
Description:	N/A
Filer:	Marie Fleming
Organization:	DayZen LLC
Submitter Role:	Applicant Representative
Submission Date:	1/5/2018 10:58:49 AM
Docketed Date:	1/5/2018

Appendix E-2

BAAQMD Application for ATC

VANTAGE DATA CENTERS
2820 Northwestern Parkway, Santa Clara, CA 95051 vantagedatacenters.com

December 21, 2017

Via Mail

Gregory Stone
Supervising Air Quality Engineer
Bay Area Air Quality Management District
375 Beale Street
San Francisco, CA 94105

Re: Permit Application and Health Risk Assessment for Thirty Two (32) Diesel-Fueled Emergency Generators at 725 Mathew Street in Santa Clara, California (Plant ID: TBD)

Dear Mr. Stone:

We are pleased to submit the enclosed permit application and health risk assessment (HRA) for thirty-two (32) diesel-fueled emergency generators at the Vantage data center located at 725 Mathew Street in Santa Clara, California. The proposed new generators will be located at the McLaren data center site at 725 Mathew Street, hereafter referred to as "McLaren."

Thirty-one (31) of the 32 total project generators will be identical 3-megawatt (MW) Caterpillar generators. Each 3-MW generator is equipped with a California Air Resources Board (CARB) verified level 3 particulate filter. The same type of filter is used on each of the 31 generators. A copy of the CARB Executive Order verifying the filter is attached. One of the 32 generators will be a 500-kilowatt (kW) Generac life safety generator equipped with a California Air Resources Board (CARB) verified level 3 particulate filter. A copy of the CARB Executive Order verifying the filter is attached.

Since this is a new facility, we have numbered each of the generators from S1-S32 for easy tracking and reference in this application. The smaller 500-kW life safety generator was assigned S1, with the 31 3-MW Caterpillar generators following thereafter.

As required by the BAAQMD, included in this permit application are:

- Application Forms
  - Form P-101B (Authority to Construct/Permit to Operate)
  - Form ICE (Internal Combustion Engines)
  - Form HRSA (Health Risk Screening Analysis)
  - Form A (Abatement Device)
  - Manufacturer's Data Sheets
  - Form Appendix H
- Health risk assessment (HRA) (optional)
  - Facility map showing locations of the proposed emergency generators. Please see the attached HRA methodology memorandum from Ramboll Environ for this information.
- Enclosed is a check for $163,528 with fee estimate calculations included as an attachment to this letter.

The aforementioned HRA has been prepared for Vantage Data Centers Management Co. by Ramboll Environ. This HRA is submitted to the BAAQMD in support of the attached applications for authorities to construct.

Included in the HRA are background information for the project; a description of the refined dispersion modeling of the emergency generators that are the subject of this application; and the cancer risk calculated for the Maximally Exposed Individual Sensitive Receptor (MEISR) and the Maximally Exposed Individual Worker (MEIW). The HRA was conducted in accordance with the conservative (i.e., health-protective) health risk assessment guidance from the District.[1]

The Air Toxics Control Measure (ATCM) for Stationary Toxic Compression Ignition Engines (Section 93115, Title 17, California Code of Regulations [CCR]) limits maintenance and testing for non-emergency use to 50 hours per year for engines that emit less than 0.15 g/bhp-hr of diesel PM. This requirement is also incorporated into BAAQMD Rule 9-8-330.3. The proposed emergency generators meet this requirement. Thus, Vantage is requesting up to 50 hours per year for maintenance and testing activities for each engine and has accounted for this limit in the HRA.

The City of Santa Clara (City) prepared an Initial Study (IS) and adopted a Mitigated Negative Declaration (MND) and a Mitigation Monitoring and Reporting Plan (MMRP) for the McLaren data center on February 10, 2017. The IS, MND and MMRP included backup generation facilities. A copy of the MND, which includes the IS and MMRP and supporting technical studies, can be found here:

http://santaclaraca.gov/Home/Components/BusinessDirectory/BusinessDirectory/167/3649

[1] Bay Area Air Quality Management District (BAAQMD). 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. January.

VANTAGE DATA CENTERS
2820 Northwestern Parkway, Santa Clara, CA 95051 vantagedatacenters.com

As discussed in the in-person planning meeting at the BAAQMD on November 2, 2017, this application is being submitted concurrent to the submission of a Small Power Plant Exemption (SPPE) application to the California Energy Commission (CEC). Vantage does not expect an air permit to be granted until the CEC, the lead agency, completes its review and grants the SPPE.

Please contact Julia Luongo (415-426-5025) or Shari Libicki (415-726-1933) at Ramboll Environ, who assisted in the preparation of this application, if you have any questions about the information contained in this application. Otherwise, please contact Michael Stoner, Project Manager, at (925) 997-5726 with project-related questions.

Sincerely,

Spencer Myers

Director, Operations

Vantage Data Centers Management Co.

Attachments

- Fee calculations
- Application Forms
- Health Risk Assessment
- Modeling Files

Fee Estimation for BAAQMD Permit Application
32 Diesel Standby Generators at McLaren Plant #TBD
Dec-17

Device	Make	Model	Engine Fuel Usage (gal/hr)	Filing Fee	Initial Fee	Late Fee	Permit Fee	Back Fee	Toxic Fee	Risk Fee	Total per engine	Fee Schedule
S-1	Generac	2506C-E15TAG3	31.2	$ 474	$ 337	$ -	$ 239	$ -	$ 24	$ 811	**$ 1,885**	B
S-2	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 2,327	**$ 5,673**	B
S-3	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-4	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-5	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-6	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-7	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-8	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-9	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-10	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-11	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-12	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-13	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-14	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-15	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-16	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-17	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-18	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-19	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-20	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-21	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-22	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-23	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-24	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-25	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-26	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-27	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-28	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-29	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-30	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-31	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B
S-32	Caterpillar	C175-16	214.2	$ 474	$ 1,853	$ -	$ 926	$ -	$ 93	$ 1,853	**$ 5,199**	B

Total, this application $ 163,528

Conversions

19,300 BTU/lb diesel, from AP-42 Section 3.4
1,000,000 BTU/MMBTU
7.1 lb/gallon diesel, from AP-42 Section 3.4
137,030 BTU/gallon diesel, calculated from AP-42 Section 3.4

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form P-101B
Authority to Construct/
Permit to Operate

1. Application Information

BAAQMD Plant No. TBD Company Name Vantage Data Centers Management Co., LLC

Equipment/Project Description McLaren Data Center - Diesel Generators

2. Plant Information

If you have not previously been assigned a Plant Number by the District or if you want to update any plant data that you have previously supplied to the District, please complete this section.

Equipment Location 725 Mathew Street

City Santa Clara Zip Code 95050

Mail Address 725 Mathew Street

City Santa Clara State CA Zip Code 95050

Plant Contact _____ Title _____

Telephone ( ) _____ Fax ( ) _____ Email _____

NAICS (North American Industry Classification System) see www.census.gov/eos/www/naics/ 518210

3. Proximity to a School (K-12)

The sources in this permit application (*check one*) ☐ Are ■ Are not within 1,000 ft of the outer boundary of the nearest school.

4. Application Contact Information

All correspondence from the District regarding this application will be sent to the plant contact unless you wish to designate a different contact for this application.

Application Contact Spencer Myers Title Project Manager

Mail Address _____

City _____ State _____ Zip Code _____

Telephone (408) 712-4387 Fax ( ) _____ Email smyers@vantagedatacenters.com

5. Additional Information

The following additional information is required for all permit applications and should be included with your submittal. Failure to provide this information may delay the review of your application. Please indicate that each item has been addressed by checking the box. Contact the Engineering Division if you need assistance.

■ If a new Plant, a local street map showing the location of your business

■ A facility map, drawn roughly to scale, that locates the equipment and its emission points

■ Completed data form(s) and a pollutant flow diagram for each piece of equipment.
(See www.baaqmd.gov/forms/permits)

■ Project/equipment description, manufacturer's data

■ Discussion and/or calculations of the emissions of air pollutants from the equipment

6. Trade Secrets

Under the California Public Records Act, all information in your permit application will be considered a matter of public record and may be disclosed to a third party. If you wish to keep certain items separate as specified in Regulation 2, Rule 1, Section 2-1-402.7, please complete the following steps.

☐ Each page containing trade secret information must be labeled "trade secret" with the trade secret information clearly marked.

☐ A second copy, with trade secret information blanked out, marked "public copy" must be provided.

☐ For each item asserted to be trade secret, you must provide a statement which provides the basis for your claim.

7. Small Business Certification *You are entitled to a reduced permit fee if you qualify as a small business as defined in Regulation 3. In order to qualify, you must certify that your business meets all of the following criteria:*

☐ The business does not employ more than 10 persons and its gross annual income does not exceed $750,000.

☐ And the business is not an affiliate of a non-small business. (Note: a non-small business employs more than 10 persons and/or its gross income exceeds $750,000.)

8. Green Business Certification *You are entitled to a reduced permit fee if you qualify as a green business as defined in Regulation 3. In order to qualify, you must certify that your business meets all of the following criteria:*

☐ The business has been certified under the Bay Area Green Business Program coordinated by the Association of Bay Area Governments and implemented by participating counties.

☐ A copy of the certification is included.

9. Accelerated Permitting *The Accelerated Permitting Program entitles you to install and operate qualifying sources of air pollution and abatement equipment* ***without waiting for the District to issue a Permit to Operate****. To participate in this program you must certify that your project will meet all of the following criteria. Please acknowledge each item by checking each box.*

☐ Uncontrolled emissions of any single pollutant are each less than 10 lb/highest day, or the equipment has been precertified by the BAAQMD.

☐ Emissions of toxic compounds do not exceed the trigger levels identified in Table 2-5-1 (see Regulation 2, Rule 5).

☐ The source is not a diesel engine.

☐ The project is not subject to public notice requirements (the source is either more than 1000 ft. from the nearest school, or the source does not emit any toxic compound in Table 2-5-1).

☐ For replacement of abatement equipment, the new equipment must have an equal or greater overall abatement efficiency for all pollutants than the equipment being replaced.

☐ For alterations of existing sources, for all pollutants the alteration does not result in an increase in emissions.

☐ Payment of applicable fees (the minimum permit fee to install and operate each source). See Regulation 3 or contact the Engineering Division for help in determining your fees.

10. CEQA *Please answer the following questions pertaining to CEQA (California Environmental Quality Act).*

A. Has another public agency prepared, required preparation of, or issued a notice regarding preparation of a California Environmental Quality Act (CEQA) document (initial study, negative declaration, environmental impact report, or other CEQA document) that analyzes impacts of this project or another project of which it is a part or to which it is related? ■YES ☐NO If no, go to section 10B.

Describe the document or notice, preparer, and date of document or expected date of completion:

The City of Santa Clara (City) prepared an Initial Study (IS) and adopted a Mitigated Negative Declaration (MND) and a Mitigation Monitoring and Reporting Plan (MMRP) for the McLaren data center on February 10, 2017. http://santaclaraca.gov/Home/Components/BusinessDirectory/BusinessDirectory/167/3649

B. List and describe any other permits or agency approvals required for this project by city, regional, state or federal agencies:

The California Energy Commission (CEC) is reviewing a Small Power Plant Exemption (SPPE) application.

C. List and describe all other prior or current projects for which either of the following statements is true: (1) the project that is the subject of this application could not be undertaken without the project listed below, (2) the project listed below could not be undertaken without the project that is the subject of this application:

11. Certification *I hereby certify that all information contained herein is true and correct. (Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Send all application materials to the **BAAQMD Engineering Division, 375 Beale Street, Suite 600, San Francisco, CA 94105.**

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 1 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Generac Model: 2506C-E15TAG3 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL15.2NZS Engine Serial No.: unknown
Engine Displacement: 927.56 *(cu in)* Maximum rated output *(bhp)*: 762 Typical load as % of bhp rating: 100
Is this an emergency/standby engine? ■ Yes ☐ No
(Complete and check all that apply)
Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn
Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number: A 1 *(If unknown leave blank)* ■ New ☐ Existing
Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20+
Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.		

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 8 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 3400 Exhaust temperature at typical operation *(°F)* 1022

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	31.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	1560 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions <u>after</u> abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 2 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ■ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 2 *(If unknown leave blank)* ■ New ☐ Existing
Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD (*District use only*)
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD (*District use only*)
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT — **Form ICE** Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS — Name of person certifying (print)

Director of Construction — Title of person certifying

Signature of person certifying

12/20/17 — Date

Approved By: _____ Date: _____ (District Use Only)

Entered By: _____ Date: _____

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 3 *(If unknown leave blank)
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ■ Yes ☐ No
(Complete and check all that apply)
Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn
Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number: A 3 *(If unknown leave blank)* ■ New ☐ Existing
Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD (*District use only*)
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD (*District use only*)
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS — Name of person certifying (print)

Director of Construction — Title of person certifying

 — Signature of person certifying

12/20/17 — Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 4 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ☒ Yes ☐ No
(Complete and check all that apply)
Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn
Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 4 *(If unknown leave blank)* ☒ New ☐ Existing
Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/201

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*
(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a **fuel analysis** indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
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Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:

Source Description: Diesel Generator Source No.*: 5 *(If unknown leave blank)

Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*

Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition

Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017

EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown

Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60

Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ

☐ None *(If None is checked, please indicate below the items applicable to this engine.)*

☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled

☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver

☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 5 *(If unknown leave blank)* ☒ New ☐ Existing

Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)

☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +

Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:

Source Description: Diesel Generator Source No.*: 6 *(If unknown leave blank)*

Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*

Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition

Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017

EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown

Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60

Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ

☐ None *(If None is checked, please indicate below the items applicable to this engine.)*

☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled

☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver

☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 6 *(If unknown leave blank)* ☒ New ☐ Existing

Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)

☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +

Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a **fuel analysis** indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions <u>after</u> abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:

Source Description: Diesel Generator Source No.*: 7 *(If unknown leave blank)*

Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*

Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition

Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017

EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown

Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60

Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ

☐ None *(If None is checked, please indicate below the items applicable to this engine.)*

☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled

☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver

☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 7 *(If unknown leave blank)* ☒ New ☐ Existing

Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)

☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +

Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD (*District use only*)
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD (*District use only*)
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT | **Form ICE** Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT
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Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:

Source Description: Diesel Generator Source No.*: 8 *(If unknown leave blank)

Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*

Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition

Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017

EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown

Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60

Is this an emergency/standby engine? ■ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ

☐ None *(If None is checked, please indicate below the items applicable to this engine.)*

☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled

☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver

☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 8 *(If unknown leave blank)* ■ New ☐ Existing

Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)

☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +

Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD (*District use only*)
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD (*District use only*)
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/201

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**)
   Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions <u>after</u> abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		9/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

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Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 9 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 9 *(If unknown leave blank)* ☒ New ☐ Existing
Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD (*District use only*)
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD (*District use only*)
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a **fuel analysis** indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions <u>after</u> abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 10 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ■ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 10 *(If unknown leave blank)* ■ New ☐ Existing
Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions <u>after</u> abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		9/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 11 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ■ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 11 *(If unknown leave blank)* ■ New ☐ Existing
Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
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Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:

Source Description: Diesel Generator Source No.*: 12 *(If unknown leave blank)

Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*

Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition

Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017

EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown

Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60

Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ

☐ None *(If None is checked, please indicate below the items applicable to this engine.)*

☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled

☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver

☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 12 *(If unknown leave blank)* ☒ New ☐ Existing

Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)

☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +

Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction.		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:

Source Description: Diesel Generator Source No.*: 13 *(If unknown leave blank)

Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*

Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition

Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017

EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown

Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60

Is this an emergency/standby engine? ■ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ

☐ None *(If None is checked, please indicate below the items applicable to this engine.)*

☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled

☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver

☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 13 *(If unknown leave blank)* ■ New ☐ Existing

Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)

☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +

Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 14 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 14 *(If unknown leave blank)* ☒ New ☐ Existing
Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20
Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.		

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*
(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions <u>after</u> abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
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Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 15 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ■ Yes ☐ No
(Complete and check all that apply)
Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn
Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number: A 15 *(If unknown leave blank)* ■ New ☐ Existing
Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +
Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*
(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20
Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.		

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

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Form ICE
Internal Combustion Engines

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1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 16 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 16 *(If unknown leave blank)* ☒ New ☐ Existing
Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20
Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.		

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*
(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 628.4 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 17 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 17 *(If unknown leave blank)* ☒ New ☐ Existing
Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 18 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ■ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 18 *(If unknown leave blank)* ■ New ☐ Existing
Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**)
   Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions <u>after</u> abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
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Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 19 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 19 *(If unknown leave blank)* ☒ New ☐ Existing
Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20
Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.		

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 20 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number: A 20 *(If unknown leave blank)* ☒ New ☐ Existing
Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20
Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.		

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*
(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 21 *(If unknown leave blank)
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ■ Yes ☐ No
(Complete and check all that apply)
Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn
Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 21 *(If unknown leave blank)* ■ New ☐ Existing
Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +
Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*
(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20
Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.		

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a **fuel analysis** indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 gal/hr or SCF/hr	Maximum Fuel Use Rate[2]	gal/hr or SCF/hr
Annual Fuel Usage[3]	10710 gal/yr or therm/yr or SCF/yr	Annual Fuel Usage[3]	gal/yr or therm/yr or SCF/yr
Typical Heat Content[4]	BTU/gal or BTU/SCF	Typical Heat Content[4]	BTU/gal or BTU/SCF
Sulfur Content[4]	wt% liquids or ppmv gases	Sulfur Content[4]	wt% liquids or ppmv gases

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
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Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 22 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ■ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 22 *(If unknown leave blank)* ■ New ☐ Existing
Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*
(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel

Fuel Code[1] 98 Name ULSD

Maximum Fuel Use Rate[2] 214.2 *gal/hr or SCF/hr*

Annual Fuel Usage[3] 10710 *gal/yr or therm/yr or SCF/yr*

Typical Heat Content[4] _____ *BTU/gal or BTU/SCF*

Sulfur Content[4] _____ *wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐

Others – ☐ Check here and attach a separate list under each fuel used.

Secondary Fuel

Fuel Code[1] _____ Name _____

Maximum Fuel Use Rate[2] _____ *gal/hr or SCF/hr*

Annual Fuel Usage[3] _____ *gal/yr or therm/yr or SCF/yr*

Typical Heat Content[4] _____ *BTU/gal or BTU/SCF*

Sulfur Content[4] _____ *wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐

Others – ☐ Check here and attach a separate list under each fuel used.

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

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Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 23 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 23 *(If unknown leave blank)* ☒ New ☐ Existing
Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/2

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions <u>after</u> abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 24 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ■ Yes ☐ No
(Complete and check all that apply)
Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn
Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number: A 24 *(If unknown leave blank)* ■ New ☐ Existing
Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +
Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*
(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions <u>after</u> abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
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Form ICE
Internal Combustion Engines

Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:

Source Description: Diesel Generator Source No.*: 25 *(If unknown leave blank)

Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*

Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition

Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017

EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown

Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60

Is this an emergency/standby engine? ■ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ

☐ None *(If None is checked, please indicate below the items applicable to this engine.)*

☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled

☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver

☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 25 *(If unknown leave blank)* ■ New ☐ Existing

Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)

☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +

Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
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Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's ***equipment specifications****.*

1. SUMMARY ■ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 26 *(If unknown leave blank)
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ■ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ■ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ■ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number: A 26 *(If unknown leave blank)* ■ New ☐ Existing
Device type: ■ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20

Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital ☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____
(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 27 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 27 *(If unknown leave blank)* ☒ New ☐ Existing
Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/2
Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.		

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*
(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 gal/hr or SCF/hr	Maximum Fuel Use Rate[2]	gal/hr or SCF/hr
Annual Fuel Usage[3]	10710 gal/yr or therm/yr or SCF/yr	Annual Fuel Usage[3]	gal/yr or therm/yr or SCF/yr
Typical Heat Content[4]	BTU/gal or BTU/SCF	Typical Heat Content[4]	BTU/gal or BTU/SCF
Sulfur Content[4]	wt% liquids or ppmv gases	Sulfur Content[4]	wt% liquids or ppmv gases

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions <u>after</u> abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
Engineering Division (415) 749-4990
www.baaqmd.gov fax (415) 749-5030

Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 28 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 28 *(If unknown leave blank)* ☒ New ☐ Existing
Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20
Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.		

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*
(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Continued on reverse side

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Form ICE
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and complete one Form P for each emission point..*

Emission point number P _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 45.17

Diameter of stack outlet *(inches)* 20.08 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ☐ Horizontal ■ Vertical End of outlet *(check one)* ■ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 25630 Exhaust temperature at typical operation *(°F)* 891.9

5. RISK ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 801.37 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ■ Commercial ☐ Hospital

☐ Day care center ☐ Other _____

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 132.4 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel code table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel		Secondary Fuel	
Fuel Code[1]	98	Fuel Code[1]	
Name	ULSD	Name	
Maximum Fuel Use Rate[2]	214.2 *gal/hr or SCF/hr*	Maximum Fuel Use Rate[2]	*gal/hr or SCF/hr*
Annual Fuel Usage[3]	10710 *gal/yr or therm/yr or SCF/yr*	Annual Fuel Usage[3]	*gal/yr or therm/yr or SCF/yr*
Typical Heat Content[4]	*BTU/gal or BTU/SCF*	Typical Heat Content[4]	*BTU/gal or BTU/SCF*
Sulfur Content[4]	*wt% liquids or ppmv gases*	Sulfur Content[4]	*wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Abated Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐
Others – ☐ Check here and attach a separate list under each fuel used.				

1. *Fuel Codes:* Diesel (**98**) Bio Diesel B100 (**815**) Bio Diesel B20 Blend (**816**) Gasoline (**551**) Natural Gas (**189**) Landfill Gas (**511**) Digester Gas (**493**) Liquid Petroleum Gas (LPG) (**160**)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions <u>after</u> abatement by an add-on abatement device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

SPENCER MYERS	Director of Construction		12/20/17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Approved By: _____ Date: _____ Entered By: _____ Date: _____

(District Use Only)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600, San Francisco, CA 94105
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Form ICE
Internal Combustion Engines

*Form ICE is to be completed for all internal combustion engines except turbines. (For turbines, submit Form C). Submit one form for each engine. If this is a new engine or a modification to an existing engine, you must also complete Form HRSA Health Risk Screen Analysis. Additional forms and all District regulations and rules are available on the District's web site. Contact your assigned permit engineer or the Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's **equipment specifications**.*

1. SUMMARY ☒ New Construction ☐ Modification ☐ Loss of Exemption

Company Name: Vantage Data Centers Management Co, LLC. Plant No.*:
Source Description: Diesel Generator Source No.*: 29 *(If unknown leave blank)*
Initial Date of Operation: ASAP *(Not required for modification of an existing permitted source)*
Operating Schedule: *Typical hrs/day* 0.5 *Days/week* 1 *Weeks/yr* 50 *Maximum hrs/day* 24

2. ENGINE INFORMATION ☐ *Check here if applying for a multiple location permit. (See Reg. 2-1-413 for requirements)*

Engine Type: *(Check one)* ☒ 4 Stroke ☐ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition
Engine Manufacturer: Caterpillar Model: C175-16 Model Year: 2017
EPA/CARB Engine Family Name: HCPXL106.NZS Engine Serial No.: unknown
Engine Displacement: 5155.8 *(cu in)* Maximum rated output *(bhp)*: 4423 Typical load as % of bhp rating: 60
Is this an emergency/standby engine? ☒ Yes ☐ No

(Complete and check all that apply)

Certification: ☐ EPA Certified ☐ CARB Certified CARB Executive Order No.: Ramboll Environ
☐ None *(If None is checked, please indicate below the items applicable to this engine.)*
☐ Naturally aspirated ☐ Supercharged ☐ Turbocharged ☐ Inter-cooled ☐ After-cooled
☐ Timing retard ≥ 4° ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver
☐ Compressor driver ☐ Tub grinder driver ☐ Other:

3. ABATEMENT DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on abatement device.*
☐ *Check here if the engine has more than one add-on abatement device and complete a separate Form A for each additional abatement device.*

Abatement device number A 29 *(If unknown leave blank)* ☒ New ☐ Existing
Device type: ☒ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)
☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: Johnson Matthey CRT +
Make, Model, and Rated Capacity: Johnson Matthey CRT +

Abatement device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Pollutant Name	Wt % Reduction	Basis Code
Particulates	85	9
Organics	70	9
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide	80	12/20/20
Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.		

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*
(1) Source testing or other measurement by plant
(2) Source testing or measurement by BAAQMD *(District use only)*
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by BAAQMD *(District use only)*
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

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