

DRAFT ENGINEERING EVALUATION
Vantage Data Centers Management Co., LLC
Application: 28827
Plant: 20295
2820 Northwestern Parkway, Santa Clara, CA 95051

BACKGROUND

Vantage Data Centers Management Co., LLC (Vantage) has applied for a synthetic minor operating permit (SMOP) for the 44 existing emergency generators located at the facility. Based on the current engineering policy, the facility PTE for NOx exceeds 100 tons per year based upon each engine’s permitted non-emergency hours of operation plus 100 hours per year of emergency operation per engine.

These generator sets provide backup electricity.

Engine source numbers, characteristics, and permitting history are summarized in the table below.

Table 1: Summary of Existing Plant Sources and Permitting History							
Source	Manufacturer	Model	BHP	EPA Engine Family	Year	A#:	Date Permitted
17	Caterpillar	3516B	2,848	4CPXL78.1ERK	2004	9467	5/17/2004
18	Caterpillar	3516B	2,848	4CPXL78.1ERK	2004	9467	5/17/2004
19	Caterpillar	3516B	2,848	4CPXL78.1ERK	2004	9467	5/17/2004
21	Caterpillar	3516B	2,848	5CPXL78.1ERK	2005	12612	8/10/2005
22	Caterpillar	3516B	2,848	5CPXL78.1ERK	2005	12612	8/10/2005
23	Caterpillar	3516B	2,848	5CPXL78.1ERK	2005	12612	8/10/2005
24	Caterpillar	C175-16	4,423	ACPXL106.T2E	2010	22174	11/4/2010
25	Caterpillar	C175-16	4,423	ACPXL106.T2E	2010	22174	11/4/2010
26	Caterpillar	C175-16	4,423	ACPXL106.T2E	2010	22174	11/4/2010
27	Caterpillar	C175-16	4,423	ACPXL106.T2E	2010	22174	11/4/2010
33	MTU	3000-XC6DT2	4,680	AMDDL95.4XTR	2010	23123	11/21/2011
34	MTU	3000-XC6DT2	4,680	AMDDL95.4XTR	2010	23123	11/21/2011
35	MTU	3000-XC6DT2	4,680	AMDDL95.4XTR	2010	23123	11/21/2011
36	MTU	3000-XC6DT2	4,680	AMDDL95.4XTR	2010	23123	11/21/2011
37	MTU	3000-XC6DT2	4,680	AMDDL95.4XTR	2010	23123	11/21/2011
38	MTU	3000-XC6DT2	4,680	AMDDL95.4XTR	2010	23123	11/21/2011
39	Cummins	2750DQLF	4,060	CCEXL060.AAD	2012	24697	10/26/2012
40	Cummins	2750DQLF	4,060	CCEXL060.AAD	2012	24697	10/26/2012
41	Cummins	2750DQLF	4,060	CCEXL060.AAD	2012	24697	10/26/2012
42	Cummins	2750DQLF	4,060	CCEXL060.AAD	2012	24697	10/26/2012
43	Cummins	2750DQLF	4,060	CCEXL060.AAD	2012	24697	10/26/2012
45	Caterpillar	3516C	2,937	ECPXL78.1NZS	2014	27291	10/13/2015
46	MTU	20V4000G83L	4,680	FMDDL95.4XTR	2016	27640	2/29/2016
47	MTU	20V4000G83L	4,680	FMDDL95.4XTR	2016	27640	2/29/2016

Table 1: Summary of Existing Plant Sources and Permitting History							
Source	Manufacturer	Model	BHP	EPA Engine Family	Year	A#:	Date Permitted
48	MTU	20V4000G83L	4,680	FMDDL95.4XTR	2016	27640	2/29/2016
49	Cummins	2750DQLF	4,060	GCEXL060.AAD	2016	27640	2/29/2016
50	Cummins	2750DQLF	4,060	GCEXL060.AAD	2016	27640	2/29/2016
51	Cummins	2750DQLF	4,060	GCEXL060.AAD	2016	27640	2/29/2016
52	Cummins	2750DQLF	4,060	GCEXL060.AAD	2016	27640	2/29/2016
53	Caterpillar	C175-16	4,423	FCPXL106.NZS	2015	28448	6/6/2017
54	Caterpillar	C175-16	4,423	FCPXL106.NZS	2015	28448	6/6/2017
55	Caterpillar	C175-16	4,423	FCPXL106.NZS	2015	28448	6/6/2017
56	Caterpillar	C175-16	4,423	FCPXL106.NZS	2015	28448	6/6/2017
57	Caterpillar	C175-16	4,423	FCPXL106.NZS	2015	28448	6/6/2017
58	Caterpillar	C175-16	4,423	FCPXL106.NZS	2015	28448	6/6/2017
59	Caterpillar	C175-16	4,423	FCPXL106.NZS	2015	28448	6/6/2017
60	Caterpillar	C175-16	4,423	FCPXL106.NZS	2015	28448	6/6/2017
61	Caterpillar	C175-16	4,423	FCPXL106.NZS	2015	28448	6/6/2017
62	Caterpillar	C175-16	4,423	FCPXL106.NZS	2015	28448	6/6/2017
63	Caterpillar	C175-16	4,423	FCPXL106.NZS	2015	28448	6/6/2017
64	Cummins	2750DQLF	4,060	JCEXL060.AAD	2018	29209	8/2/2018
65	Generac	SD130	198	JFPXL06.7DGB	2018	29358	8/2/2018
66	Caterpillar	C175-16	4,423	HCPXL106.NZS	2017	29209	8/2/2018
67	Caterpillar	C175-16	4,423	NCPXL106.NZS	2022	31662	AC

As of the date of this evaluation, S67 has been granted an authority to construct (AC) but not a permit to operate (PO).

Sources S17, S18, S19, S21, S22, S23, and S65 are unabated. The remaining sources have Johnson Matthey CRT+ diesel particulate filters that control diesel particulate by 85%. Additionally, S67 has an EcoCube Series 5 SCR that controls NOx to make the engine compliant with EPA Tier 4 standards.

EMISSIONS

Current facility-wide emissions are summarized in the table below. These emissions are based only on permitted non-emergency use. Emissions calculations and assumptions can be found in the engineering evaluations for Applications 9467, 12612, 22174, 23123, 24697, 27291, 27640, 28448, 29209, 29359, and 31662.

Table 2: Facility Wide PTE - Current sources (Permitted Usage Only)

Source	A/ N	Status	bhp	hr/yr	g/bhp-hr, abated					tpy				
					NOx	CO	POC	PM ₁₀	SO ₂	NOx	CO	POC	PM ₁₀	SO ₂
17	9467	PO	2,848	26	6.18	0.90	0.15	0.100	0.18	0.504	0.073	0.012	0.008	0.015
18	9467	PO	2,848	26	6.18	0.90	0.15	0.10	0.18	0.504	0.073	0.012	0.008	0.015
19	9467	PO	2,848	26	6.18	0.90	0.15	0.10	0.18	0.504	0.073	0.012	0.008	0.015
21	12612	PO	2,848	50	5.74	0.44	0.15	0.068	N/A	0.901	0.069	0.024	0.011	0.024
22	12612	PO	2,848	50	5.74	0.44	0.15	0.068	N/A	0.901	0.069	0.024	0.011	0.024
23	12612	PO	2,848	50	5.74	0.44	0.15	0.068	N/A	0.901	0.069	0.024	0.011	0.024
24	22174	PO	4,423	50	4.39	1.42	0.23	0.018	N/A	1.070	0.346	0.056	0.004	0.005
25	22174	PO	4,423	50	4.39	1.42	0.23	0.018	N/A	1.070	0.346	0.056	0.004	0.005
26	22174	PO	4,423	50	4.39	1.42	0.23	0.018	N/A	1.070	0.346	0.056	0.004	0.005
27	22174	PO	4,423	50	4.39	1.42	0.23	0.018	N/A	1.070	0.346	0.056	0.004	0.005
33	23123	PO	4,680	50	4.19	1.42	0.22	0.045	0.0136	1.081	0.366	0.057	0.012	0.004
34	23123	PO	4,680	50	4.19	1.42	0.22	0.045	0.0136	1.081	0.366	0.057	0.012	0.004
35	23123	PO	4,680	50	4.19	1.42	0.22	0.045	0.0136	1.081	0.366	0.057	0.012	0.004
36	23123	PO	4,680	50	4.19	1.42	0.22	0.045	0.0136	1.081	0.366	0.057	0.012	0.004
37	23123	PO	4,680	50	4.19	1.42	0.22	0.045	0.0136	1.081	0.366	0.057	0.012	0.004
38	23123	PO	4,680	50	4.19	1.42	0.22	0.045	0.0136	1.081	0.366	0.057	0.012	0.004
39	24697	PO	4,060	26	4.56	2.60	0.24	0.045	0.0136	0.531	0.303	0.028	0.005	0.002
40	24697	PO	4,060	26	4.56	2.60	0.24	0.045	0.0136	0.531	0.303	0.028	0.005	0.002
41	24697	PO	4,060	26	4.56	2.60	0.24	0.045	0.0136	0.531	0.303	0.028	0.005	0.002
42	24697	PO	4,060	26	4.56	2.60	0.24	0.045	0.0136	0.531	0.303	0.028	0.005	0.002
43	24697	PO	4,060	50	4.56	2.60	0.24	0.045	0.0136	1.020	0.582	0.054	0.010	0.003
45	27291	PO	2,937	50	3.78	0.70	0.19	0.001	0.0055	0.612	0.113	0.031	0.000	0.001
46	27640	PO	4,680	50	3.80	0.80	0.20	0.015	0.0055	0.980	0.206	0.052	0.004	0.001
47	27640	PO	4,680	50	3.80	0.80	0.20	0.015	0.0055	0.980	0.206	0.052	0.004	0.001
48	27640	PO	4,680	50	3.80	0.80	0.20	0.015	0.0055	0.980	0.206	0.052	0.004	0.001
49	27640	PO	4,060	50	3.61	0.80	0.20	0.015	0.0055	0.808	0.179	0.045	0.003	0.001
50	27640	PO	4,060	50	3.61	0.80	0.20	0.015	0.0055	0.808	0.179	0.045	0.003	0.001
51	27640	PO	4,060	50	3.61	0.80	0.20	0.015	0.0055	0.808	0.179	0.045	0.003	0.001
52	27640	PO	4,060	50	3.61	0.80	0.20	0.015	0.0055	0.808	0.179	0.045	0.003	0.001
53	28448	PO	4,423	36	3.97	1.10	0.36	0.080	0.0055	0.697	0.193	0.063	0.014	0.001
54	28448	PO	4,423	36	3.97	1.10	0.36	0.080	0.0055	0.697	0.193	0.063	0.014	0.001
55	28448	PO	4,423	36	3.97	1.10	0.36	0.080	0.0055	0.697	0.193	0.063	0.014	0.001
56	28448	PO	4,423	36	3.97	1.10	0.36	0.080	0.0055	0.697	0.193	0.063	0.014	0.001
57	28448	PO	4,423	36	3.97	1.10	0.36	0.080	0.0055	0.697	0.193	0.063	0.014	0.001
58	28448	PO	4,423	36	3.97	1.10	0.36	0.080	0.0055	0.697	0.193	0.063	0.014	0.001
59	28448	PO	4,423	36	3.97	1.10	0.36	0.080	0.0055	0.697	0.193	0.063	0.014	0.001
60	28448	PO	4,423	36	3.97	1.10	0.36	0.080	0.0055	0.697	0.193	0.063	0.014	0.001
61	28448	PO	4,423	36	3.97	1.10	0.36	0.080	0.0055	0.697	0.193	0.063	0.014	0.001
62	28448	PO	4,423	36	3.97	1.10	0.36	0.080	0.0055	0.697	0.193	0.063	0.014	0.001

Table 2: Facility Wide PTE - Current sources (Permitted Usage Only)

Source	A/ N	Status	bhp	hr/yr	g/bhp-hr, abated					tpy				
					NOx	CO	POC	PM ₁₀	SO ₂	NOx	CO	POC	PM ₁₀	SO ₂
63	28448	PO	4,423	36	3.97	1.10	0.36	0.080	0.0055	0.697	0.193	0.063	0.014	0.001
64	29209	PO	4,060	50	3.60	0.70	0.20	0.014	0.0055	0.806	0.157	0.045	0.003	0.001
65	29358	PO	198	50	2.70	0.08	0.12	0.120	0.0055	0.029	0.001	0.001	0.001	0.000
66	29209	PO	4,423	50	4.17	1.27	0.16	0.011	0.0055	1.017	0.310	0.039	0.003	0.001
67	31662	AC	4,423	50	0.50	1.12	0.14	0.012	0.0280	0.122	0.273	0.034	0.003	0.007
Total										34.550	10.111	2.019	0.363	0.200

PLANT CUMULATIVE INCREASE

Cumulative Increase is defined as the sum of all emissions increases authorized by authorities to construct and permits to operate issued to a facility since the applicable cumulative increase baseline date, which is April 5, 1991, for POC, NOx, SO2, PM10, and CO, and August 31, 2016, for PM2.5. The cumulative increase for the facility is summarized in the table below.

Pollutant	Current	Application Emissions	Cumulative Increase
NOX	26.626	0.000	26.626
POC	2.121	0.000	2.121
CO	12.081	0.000	12.081
PM10	0.306	0.000	0.306
PM2.5	0.042	0.000	0.042
SO2	0.073	0.000	0.073

HEALTH RISK ASSESSMENT

This application does not contain new sources of toxic air contaminants (TACs). Therefore, a health risk assessment (HRA) was not conducted.

STATEMENT OF COMPLIANCE

Each of the facility’s 44 engines has previously been determined to comply with all applicable local, state, and federal air quality related requirements. The purpose of this evaluation is specifically to determine the facility’s compliance with BAAQMD Regulation 2, Rule 6 and applicability of the federal permitting requirements outlined in Title V of the Clean Air Act, as amended in 1990.

Offsets

Regulation 2-2-302 requires that offsets be provided if a facility is permitted to emit more than 10 tons per year of POC or NOx (either from the facility if more than 35 tons per year

or from the District Small Facility Banking Account). In accordance with District Policy¹, the standard potential to emit for emergency engines is based on 150 hr/yr operation (50 hr/yr non-emergency plus 100 hr/yr emergency purposes).

The assumption of 100 hours per year of emergency operation is used to determine the applicability of certain District permitting regulations, such as New Source Review and Title V Major Facility Review. The District Policy is not used to determine the quantity of emission offsets required for a project that triggers New Source Review or for PSD. It is also not applicable for purposes of the Toxics New Source Review requirements of District Reg. 2-5 (per Regulation 2-5-111).

Facility-wide PTE using the District Policy is summarized below.

Table 4: Facility Wide PTE - Current sources with 100 hrs/yr emergency use														
Source	A/ N	Status	bhp	hr/yr	g/bhp-hr, abated					tpy				
					NOx	CO	POC	PM ₁₀	SO ₂	NOx	CO	POC	PM ₁₀	SO ₂
17	9467	PO	2,848	126	6.18	0.90	0.15	0.100	0.18	2.445	0.356	0.059	0.040	0.071
18	9467	PO	2,848	126	6.18	0.90	0.15	0.10	0.18	2.445	0.356	0.059	0.040	0.071
19	9467	PO	2,848	126	6.18	0.90	0.15	0.10	0.18	2.445	0.356	0.059	0.040	0.071
21	12612	PO	2,848	150	5.74	0.44	0.15	0.068	N/A	2.703	0.207	0.071	0.032	0.072
22	12612	PO	2,848	150	5.74	0.44	0.15	0.068	N/A	2.703	0.207	0.071	0.032	0.072
23	12612	PO	2,848	150	5.74	0.44	0.15	0.068	N/A	2.703	0.207	0.071	0.032	0.072
24	22174	PO	4,423	150	4.39	1.42	0.23	0.018	N/A	3.211	1.038	0.168	0.013	0.015
25	22174	PO	4,423	150	4.39	1.42	0.23	0.018	N/A	3.211	1.038	0.168	0.013	0.015
26	22174	PO	4,423	150	4.39	1.42	0.23	0.018	N/A	3.211	1.038	0.168	0.013	0.015
27	22174	PO	4,423	150	4.39	1.42	0.23	0.018	N/A	3.211	1.038	0.168	0.013	0.015
33	23123	PO	4,680	150	4.19	1.42	0.22	0.045	0.0136	3.242	1.099	0.170	0.035	0.011
34	23123	PO	4,680	150	4.19	1.42	0.22	0.045	0.0136	3.242	1.099	0.170	0.035	0.011
35	23123	PO	4,680	150	4.19	1.42	0.22	0.045	0.0136	3.242	1.099	0.170	0.035	0.011
36	23123	PO	4,680	150	4.19	1.42	0.22	0.045	0.0136	3.242	1.099	0.170	0.035	0.011
37	23123	PO	4,680	150	4.19	1.42	0.22	0.045	0.0136	3.242	1.099	0.170	0.035	0.011
38	23123	PO	4,680	150	4.19	1.42	0.22	0.045	0.0136	3.242	1.099	0.170	0.035	0.011
39	24697	PO	4,060	126	4.56	2.60	0.24	0.045	0.0136	2.571	1.466	0.135	0.025	0.008
40	24697	PO	4,060	126	4.56	2.60	0.24	0.045	0.0136	2.571	1.466	0.135	0.025	0.008
41	24697	PO	4,060	126	4.56	2.60	0.24	0.045	0.0136	2.571	1.466	0.135	0.025	0.008
42	24697	PO	4,060	126	4.56	2.60	0.24	0.045	0.0136	2.571	1.466	0.135	0.025	0.008
43	24697	PO	4,060	150	4.56	2.60	0.24	0.045	0.0136	3.061	1.745	0.161	0.030	0.009
45	27291	PO	2,937	150	3.78	0.70	0.19	0.001	0.0055	1.836	0.340	0.092	0.001	0.003
46	27640	PO	4,680	150	3.80	0.80	0.20	0.015	0.0055	2.941	0.619	0.155	0.012	0.004
47	27640	PO	4,680	150	3.80	0.80	0.20	0.015	0.0055	2.941	0.619	0.155	0.012	0.004
48	27640	PO	4,680	150	3.80	0.80	0.20	0.015	0.0055	2.941	0.619	0.155	0.012	0.004
49	27640	PO	4,060	150	3.61	0.80	0.20	0.015	0.0055	2.423	0.537	0.134	0.010	0.004

¹ BAAQMD Policy: Calculating Potential to Emit for Emergency Backup Power Generators. Approval date June 3, 2019. (Referred to as "District Policy" in this engineering evaluation).

Table 4: Facility Wide PTE - Current sources with 100 hrs/yr emergency use

Source	A/ N	Status	bhp	hr/yr	g/bhp-hr, abated					tpy				
					NOx	CO	POC	PM ₁₀	SO ₂	NOx	CO	POC	PM ₁₀	SO ₂
50	27640	PO	4,060	150	3.61	0.80	0.20	0.015	0.0055	2.423	0.537	0.134	0.010	0.004
51	27640	PO	4,060	150	3.61	0.80	0.20	0.015	0.0055	2.423	0.537	0.134	0.010	0.004
52	27640	PO	4,060	150	3.61	0.80	0.20	0.015	0.0055	2.423	0.537	0.134	0.010	0.004
53	28448	PO	4,423	136	3.97	1.10	0.36	0.080	0.0055	2.632	0.729	0.239	0.053	0.004
54	28448	PO	4,423	136	3.97	1.10	0.36	0.080	0.0055	2.632	0.729	0.239	0.053	0.004
55	28448	PO	4,423	136	3.97	1.10	0.36	0.080	0.0055	2.632	0.729	0.239	0.053	0.004
56	28448	PO	4,423	136	3.97	1.10	0.36	0.080	0.0055	2.632	0.729	0.239	0.053	0.004
57	28448	PO	4,423	136	3.97	1.10	0.36	0.080	0.0055	2.632	0.729	0.239	0.053	0.004
58	28448	PO	4,423	136	3.97	1.10	0.36	0.080	0.0055	2.632	0.729	0.239	0.053	0.004
59	28448	PO	4,423	136	3.97	1.10	0.36	0.080	0.0055	2.632	0.729	0.239	0.053	0.004
60	28448	PO	4,423	136	3.97	1.10	0.36	0.080	0.0055	2.632	0.729	0.239	0.053	0.004
61	28448	PO	4,423	136	3.97	1.10	0.36	0.080	0.0055	2.632	0.729	0.239	0.053	0.004
62	28448	PO	4,423	136	3.97	1.10	0.36	0.080	0.0055	2.632	0.729	0.239	0.053	0.004
63	28448	PO	4,423	136	3.97	1.10	0.36	0.080	0.0055	2.632	0.729	0.239	0.053	0.004
64	29209	PO	4,060	150	3.60	0.70	0.20	0.014	0.0055	2.417	0.470	0.134	0.009	0.004
65	29358	PO	198	150	2.70	0.08	0.12	0.120	0.0055	0.088	0.003	0.004	0.004	0.000
66	29209	PO	4,423	150	4.17	1.27	0.16	0.011	0.0055	3.050	0.929	0.117	0.008	0.004
67	31662	AC	4,423	150	0.50	1.12	0.14	0.012	0.0280	0.366	0.819	0.102	0.009	0.020
Total										116.309	34.629	6.862	1.298	0.699

Regulation 2-2-303 requires that offsets be provided if a Major Facility emits more than 1.0 ton per year of PM10 or SO2. Vantage is not a Major Facility. Therefore, Regulation 2-2-303 is not applicable.

As shown above, only NOx emissions currently require offsets based on the facility's PTE. The required NOx offsets were provided by the facility in Application 31662. Because the facility has provided the necessary NOx offsets, Permit Condition #26526 will be amended to remove the 35 tpy NOx emissions restriction.

BAAQMD Regulation 2, Rule 6, Major Facility Review

The facility is subject to Regulation 2, Rule 6, because its potential to emit is greater than 100 tpy of NOx.

As shown above, the facility's natural PTE exceeds 100 tpy of NOx emissions; however, this application will include a condition limiting the use of the engines including emergency use so that the emissions of any criteria pollutant will not exceed 95 tons in any consecutive 12-months. The application will be processed using synthetic minor procedures, including submittal to EPA, public notice, and responses to any comments before issuance.

The facility is therefore expected to comply with BAAQMD Regulation 2, Rule 6, and the BAAQMD does not consider the facility to be a major facility for Title V.

PERMIT CONDITIONS

Condition 26526 will apply to all sources.

Condition # 26526:

Parts 1 – 43 of this condition establish the practically enforceable permit terms that ensure this plant is classified as a Synthetic Minor Facility under BAAQMD Regulation 2, Rule 6 – Major Facility Review and ensure it is not subject to the permitting requirements of Title V of the Federal Clean Air Act as amended in 1990 and 40 CFR Part 70. Any revision to a part establishing this plant’s status as a Synthetic Minor Facility or any new permit term that would limit emissions of a new or modified source for the purpose of maintaining the facility as a Synthetic Minor must undergo the procedures specified by Rule 2-6, Section 423.

After issuance of a synthetic minor permit, facilities must have emissions that are below the following thresholds, which are set forth in BAAQMD Regulation 2-6-423.2.1:

- 95 tons per year of any regulated air pollutant except CO₂e, as defined in 40 CFR 98;
- 9 tons per year of any single hazardous air pollutant, as defined in section 112(b) of the federal Clean Air Act; and
- 23 tons per year of any combination of hazardous air pollutants as defined in section 112(b) of the federal Clean Air Act.

The parts below acknowledge that the current potential to emit for ~~all pollutants are below these thresholds~~ **NO_x exceeds 95 tons per year**. Nonetheless, by accepting the synthetic minor permit, the facility accepts the obligation to limit the emissions in every consecutive 12-month period to no more than the thresholds above.

~~1. Notwithstanding any other limits in Vantage Data Centers’ permit for Plant # 20295, facility-wide NO_x emissions for the purposes of testing and maintenance shall be less than 35 tons in any consecutive 12-month period. This limit is imposed because Offsets were provided by the District in accordance with Regulation 2-2-302 for emission increases in Applications 9467, 12612, 22174, 23123, 24697, 27291, 27640 and 28448. [Basis: Regulation 2-2-302]~~

~~21. In order to demonstrate compliance with the 35 tons per year (tpy) limit for NO_x excluding emergency operation and 95 tpy limit of NO_x including all operationsemissions,~~ the owner/operator shall estimate the monthly emissions of NO_x in the manner below. If the total NO_x per every consecutive 12-month period is less than 95 tpy, compliance with the limits for all other pollutants will be presumed.

- a. The owner/operator shall calculate NO_x emissions for all instances of operation using load data, the time period of operation, and the results of the ISO 8178-D2 testing for each engine.
- b. The results of the above calculations shall be summarized for every month by the end of the subsequent month.
- c. Every month by the end of the month, the owner/operator shall summarize the calculated emissions for the previous 12-month periods ~~s for (1) testing and maintenance, and (2) total operations.~~

[Basis: ~~Regulation 2-2-302, and~~ Regulation 2-6-231]

32. The owner/operator shall submit a facility-wide annual NOx emissions summary and supporting calculations for each calendar year to the District's Director of Compliance & Enforcement by July 31st of each year.

[Basis: ~~Regulation 2-2-302 and~~ Regulation 2-6-423]

43. The owner/operator shall report any non-compliance with the conditions of the permit within 10 days of discovery of the non-compliance to the District's Director of Compliance & Enforcement.

[Basis: Regulation 2-6-423]

Conditions 22850, 24405, 26528, 25018, 25389, 26387, 25629, and 27743 will continue to apply to existing sources, as summarized below.

Condition 22850:

S17, 18, 19, 21, 22, 23, 24, 25, 26, 27, 45, 46, 47, 48, 49, 50, 51, 52, 64, 65, 66, and 67:

1. The owner/operator shall not exceed 50 hours per year per engine for reliability-related testing.
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
2. The owner/operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, State or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited.
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
3. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
4. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
 - a. Hours of operation for reliability-related activities (maintenance and testing).
 - b. Hours of operation for emission testing to show compliance with emission limits.
 - c. Hours of operation (emergency).
 - d. For each emergency, the nature of the emergency condition.
 - e. Fuel usage for each engine(s).

[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

5. At School and Near-School Operation:
If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply:

The owner/operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:

- a. Whenever there is a school sponsored activity (if the engine is located on school grounds)
- b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session.

"School" or "School Grounds" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, athletic field, or other areas of school property but does not include unimproved school property.

[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

Condition 24405:

S17, 18, 19, 24, 25, 26, 27, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 45, 64, 65, and 66

1. The owner/operator shall abate emissions from the engine with the associated diesel particulate filter (DPF) at all times. [Basis: Cumulative Increase]
2. The owner/operator shall operate and maintain the DPF in accordance with the CARB Executive Order for the verified DPF. [Basis: Cumulative Increase]
3. In order to determine compliance with Part 2, the owner/operator shall install and maintain any required monitoring equipment specified in the CARB Executive Order. [Basis: Cumulative Increase]
4. The owner/operator shall keep adequate records that demonstrate compliance with Part 2. The owner/operator shall record the date, equipment parameters and action taken for any maintenance activity required to

demonstrate compliance. The owner/operator shall keep such records for at least 36 months from the date the record was made and make the records available to the District upon request. [Basis: Recordkeeping]

5. The owner/operator shall keep on file the applicable CARB Executive Order for the DPF and make it available to the District upon request. [Basis: Recordkeeping]

Condition 26528:
S17, 18, and 19

S-17 through S-20 shall be fueled exclusively with diesel. This condition is equivalent to and replaces Condition 21465 fuel having a sulfur content no greater than 0.05% by weight. Application 9467 for Plant 798.

1. S-17 through S-20 shall be fueled exclusively with diesel fuel having a sulfur content no greater than 0.05% by weight. [Basis: Reg. 9-1-304]
2. Hours of Operation: The owner/operator shall operate the emergency standby engines (S-17 through S-20) only to mitigate emergency conditions or for reliability-related activities. Operation for reliability-related activities shall not exceed 100 hours per calendar year for S-17 through S-20 combined. Operation while mitigating "Emergency Conditions" is unlimited. [Basis: Toxic Risk Screening Analysis, Reg. 9-8-330]

"Emergency Conditions" are defined as any of the following: [Basis: Reg. 9-8-231]

- a. Loss of regular natural supply.
- b. Failure of regular electric power supply.
- c. Flood mitigation.
- d. Sewage overflow mitigation.
- e. Fire.
- f. Failure of a primary motor, but only for such a time needed to repair or replace the primary motor.

"Reliability-related activities" is defined as any of the following: [Basis: Reg. 9-8-232]

- a. Operation of an emergency standby engine to test its ability to perform for an emergency use, or
 - b. Operation of an emergency standby engine during maintenance of a primary motor. [Basis: Reg. 9-8-530, Toxic Risk Screening Analysis]
3. The owner/operator shall equip the emergency standby engine with either: [Basis: Reg. 9-8-530, Toxic Risk Screening Analysis]
 - a. a non-resettable totalizing meter that measures the hours of operation for the engine; or
 - b. a non-resettable totalizing fuel usage meter, the maximum fuel rate shall be used to convert fuel

usage to hours of operation

4. Records: The owner/operator shall maintain the following records in a District-approved log for at least 2 years and shall be made available for inspection upon request: [Basis: Reg. 9-8-530, Reg. 1-441, Toxic Risk Screening Analysis]
 - a. Hours of operation (total).
 - b. Hours of operation (emergency)
 - c. For each emergency, state the nature of the emergency condition.
 - d. Fuel usage for engine(s) during each operation if a non-resettable fuel usage meter is utilized.

Condition 25018:

S33, 34, 35, 36, 37, and 38

1. The owner/operator shall not exceed 50 hours per year per engine for reliability-related testing. [Basis: Cumulative increase, CEQA]
2. Deleted. [Basis: Cumulative increase, CEQA]
3. The owner/operator shall operate each emergency standby engine only for the following purposes: To mitigate emergency conditions, for emission testing to demonstrate compliance with the District, State or federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited. [Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3) or (e)(2)(B)(3)]
4. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained. [Basis: "Stationary Diesel Engine ATCM" section 93115, title 7, CA Code of Regulations, subsection (e)(4)(G)(1)]
5. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the

District staff upon request:

- a. Hours of operation for reliability-related activities (maintenance and testing)
 - b. Hours of operation for emission testing to show compliance with emission limits Hours of operation (emergency).
 - c. For each emergency, the nature of the emergency condition.
 - d. Fuel usage for each engine(s).
- [Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, Subsection (e)(4)(I),(or, Regulation 2-6-501)]

Condition 25389:

S39, 40, 41, 42, and 43

Conditions for S-39 through S-44,
Emergency Diesel Generators
Application #24697, Plant #20295,
Vantage Data Centers Management Co.

In addition to the requirements in Regulations 2-2-301, 2-6-501, 6-1, 9-1 and 9-8, the owner/Operator shall comply with the following:

1. The number of low load generator tests on any single day shall be limited to 10 generator engine tests (total engine run time of five hours, assuming a maximum of 30 minutes of run time per engine). In addition, the total annual hours of operation of any of the 15 3-MW engines for low load testing shall be no more than 26 hours per year.
[Basis: Cumulative increase, CEQA]
2. Full load testing is limited to operation of each generator for up to six (6) hours per year at 100 percent load for testing, filter clearing, or to prevent wet stacking.
[Basis: Cumulative increase, CEQA]
3. The owner/operator shall operate each emergency standby engine only for the following purposes: To mitigate emergency conditions, for emission testing to demonstrate compliance with the District, State or federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited.
[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3) or (e)(2)(B)(3)]
4. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display

capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained. [Basis: "Stationary Diesel Engine ATCM" section 93115, title 7, CA Code of Regulations, subsection (e)(4)(G)(1)]

5. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request:
 - a. Hours of operation for reliability-related activities (maintenance and testing)
 - b. Hours of operation for emission testing to show compliance with emission limits Hours of operation (emergency).
 - c. For each emergency, the nature of the emergency condition.
 - d. Fuel usage for each engine(s).
 [Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, Subsection (e)(4)(I)]

Condition 26387:

S46, 47, 48, 49, 50, 51, and 52

1. The owner/operator shall abate the particulate emissions from the emergency diesel engine with a Diesel Particulate Filter at all times the engine is in operation. [Basis: Toxics, "ATCM for Stationary Compression Ignition Engines" Section 93115.6(a)(3) or 93115.6(b)(3), title 17, CA Code of Regulations]
2. The owner/operator shall be in compliance with CARB Executive Order DE-08-009-07 during all times of engine operation. [Basis: "ATCM for Stationary Compression Ignition Engines" Section 93115.13(f), title 17, CA Code of Regulations, Toxics, Sections 2700 through 2711 of title 13, CA Code of Regulations]

Condition 26529:

S53, 54, 55, 56, 57, 58, 59, 60, 61, 62, and 63

1. The owner/operator shall abate the particulate emissions from the emergency diesel engines, S-53 to S-63, by their respective Diesel Particulate Filters, A-53 to A-63, at times the engines are in operation. [Basis: Regulation 2-5]
2. The owner/operator of A-53 to A-63, Diesel Particulate Filters, shall comply with requirements in CARB Executive Order DE-08-009-07. [Basis: CARB Executive

Order DE-08-009-07]

3. The owner/operator shall not exceed 50 hours per year per engine for reliability related testing for any single engine. The owner/operator shall not exceed 396 hours per year combine for non-emergency for all eleven engines (Sources 53 to 63) combined. [Basis: Regulation 2-2-302, Title 17, California Code of Regulations, section 93115, ATCM for stationary CI Engines]
4. The owner/operator shall ensure that the amount of nitrogen oxides emitted from engines S-53 to S-63 does not exceed 7.642 tons per any consecutive 12 months. [Basis: Offsets]
5. The owner/operator shall operate each emergency standby engine only for the following purpose: mitigate emergency conditions, for emission testing to demonstrate compliance with a District, State or Federal emission limit, or for reliability related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission is not limited as long as emissions of any criteria pollutant do not exceed 95 tons in any consecutive 12 months. [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engine]
6. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained. [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engine]
7. Records: The owner/operator shall maintain the following monthly records in a District approved log for at least 60 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
 - a. Hours of operations for each engine for reliability related activities (maintenance and testing).
 - b. Hours of operation for each engine for emission testing to show compliance with emission limits.
 - c. Hours of operation for each engine for emergency purposes.
 - d. For each emergency, the nature of the emergency conditions.
 - e. For each instance of operation, the load at which each engine has operated.
 - f. Fuel usage for each engine(s).
 - g. Any corrective action taken after a back pressure monitor has indicated that the back pressure limit of the engine is approached.

.[Basis: Regulation 2-2-302, Regulation 2-6-231, Regulation 9-8-530, Title 17, California Code of

Regulations, section 93115, ATCM for Stationary CI Engine; 40 CFR 60.4214c]

8. In order to demonstrate compliance with the 7.642 ton per year (tpy) limit for NO_x excluding emergency operation for engines S-53, the owner/operator shall estimate the monthly emissions of NO_x in the manner below. If the total NO_x per every consecutive 12 month period is less than 95 tpy, compliance with the limits for all other pollutants will be presumed.
 - a. The owner/operator shall calculate NO_x emissions for all instances of operation for reliability and maintenance using load data, the time period of operation, and the results of the ISO 8187-D2 testing for each engine.
 - b. The results of the above calculations shall be summarized for every month by the end of the subsequent month.
 - c. Every month by the end of the month, the owner/operator shall summarize the calculated emissions for the previous 12 month periods for testing and maintenance.

.[Basis: Regulation 2-2-302]

9. As School and Near School Operation: If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply: The owner/operator shall not operate each stationary emergency standby diesel fueled engine for non-emergency use, including maintenance and testing, during the following periods:
 - a. Whenever there is a school sponsored activity (if the engine is located on school grounds)
 - b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session.

."School" or "School Ground" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, athletic field, or other areas of school property but does not include unimproved school property. [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engine]

Condition 27743:

S67

1. The owner/operator of S-67 Emergency standby diesel engine shall abate the engine at all times of operation by a properly installed, maintained, and operated Diesel Particulate Filter and Selective Catalytic Reduction Systems. The owner/operator of S-67 shall immediately commence urea injection when the SCR catalyst bed reaches minimum operating temperature as specified by the SCR system manufacturer.

[Basis: Cumulative Increase, Title 17 CCR Section 93115.7(a)(3), 40 CFR 1039.101, BACT]

2. The owner/operator of S-67 shall install a backpressure monitor for the diesel particulate filter (DPF) abating the engine and comply with the terms and conditions specified in the applicable CARB Executive Order, if any. The backpressure monitor shall be equipped with a warning light that indicates when the backpressure is approaching the maximum allowable pressure as specified by the engine and/or DPF manufacturer.

[Basis: Title 17 CCR Section 93115, ATCM for Stationary CI Engines, BAAQMD Regulation 1-523]

3. The owner/operator shall conduct an initial District-approved source test on S-67 within 60 days of startup and once every three years thereafter at the maximum load expected during emergency operation utilizing District-approved source test methods to demonstrate compliance with the following emission limits:

NOx: 0.50 g/bhp-hour

POC: 0.14 g/bhp-hour

The owner/operator shall submit the results of the source test to the District within 60 days from the date of the source test. The owner/operator of S-67 shall conduct a source test on S-67 on a triennial basis.

[Basis: BACT]

4. The owner/operator shall ensure that the ammonia (NH₃) slip emissions from the SCR system abating S-67 do not exceed 10 ppmv, dry @ 15% O₂. If deemed necessary to demonstrate compliance with Regulation 2, Rule 5, the Air District may require source testing of S-67 to determine compliance with this emission limit.

[Basis: Regulation 2, Rule 5]

5. The owner/operator shall comply with all applicable testing requirements as specified in Volume IV of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates required by Part 3 of this permit condition at least 14 days prior to testing. The following test methods will be utilized for each pollutant:

NOx EPA Method 7E or District-approved equivalent

POC EPA Method 25A and EPA Method 18 or District-approved equivalent

[Basis: Regulation 2-1-403]

6. To determine compliance with the above conditions, the owner/operator of S-67 shall maintain the following records in a District-approved log and shall make these records available to District staff upon request. All records shall be retained for at least 36 months from the date of entry.

These record-keeping requirements shall not replace the record-keeping requirements contained in any applicable District or state regulations.

- a. Source Test Notifications
 - b. All source test reports for S-67
 - c. Engine serial number and source number for each source test
 - d. The owner/operator shall record any corrective actions taken in response to the exceedance of the manufacturer's specified backpressure limit.
 - e. Engine load percentage during emergency operation
- [Basis: Cumulative Increase]

RECOMMENDATION

Issue a synthetic minor operating permit to Vantage Data Centers Management Co., LLC.

Daniel Oliver

Daniel Oliver
Air Quality Engineer

09/02/2022
Date