STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

IN THE MATTER OF APPROVING A NEW)
AIR CONTAMINANT SOURCE FOR) Preliminary Determination
VANTAGE DATA CENTERS)
MANAGEMENT COMPANY, LLC)
VANTAGE-QUINCY DATA CENTER)

TO: Jeff Kane, Vice President
Vantage Data Centers Management Company, LLC
2625 Walsh Ave
Santa Clara, CA 95051

EQUIPMENT

The list of equipment that was evaluated for this order of approval consists of 17 MTU Model 20V4000 diesel engines used to power emergency electrical generators, Model MTU 3000. The seventeen 3.0 megawatt (MWe) generators will have a combined capacity of 51 MWe. Annual operations and emissions will be restricted to 169,500 gallons per year of fuel consumption and 57.5 hours per year of operation. Each engine will operate for approximately 75.5 hours per year for required maintenance testing and outage operation and an additional 9.5 hours per year of no-load idle cool down. The generators will be installed in four phases. Phase 1 will consist of seven 3.0 MWe generators that will be installed upon approval. Phases 2, 3, and 4 will consist of a total of ten additional 3.0 MWe generators, which will be installed at the facility as independent tenant companies contract for space at the Vantage-Quincy Data Center (hereafter "Vantage").

Table 1.1: 3.0 MWe Engine & Generator Serial Numbers

Project Phase	DC BLDG	Unit ID	Capacity MWe	Engine SN	Generator SN	Build date
1	DC1	DC1-1P	3.0			
"	DC1	DC1-2P	3.0			
"	DC1	DC1-3P	3.0			
"	DC1	DC1-4P	3.0			
"	DC1	DC1-5P	3.0			
"	DC1	DC1-6R	3.0			
"	DC1	DC1-7R	3.0			
2	DC2	DC2-1P	3.0			
"	DC2	DC2-2P	3.0			
"	DC2	DC2-3P	3.0			
"	DC2	DC2-4R	3.0			
3	DC3	DC3-1P	3.0			
"	DC3	DC3-2P	3.0			
"	DC3	DC3-3P	3.0			
"	DC3	DC3-4R	3.0			
4	ETC	ETC-1P	3.0			
"	ETC	ETC-2R	3.0			

The Vantage Data Center will utilize non-evaporative cooling units to dissipate heat from electronic equipment at the facility, thus eliminating evaporative cooling tower emissions from the project.

PROJECT SUMMARY

The Vantage Data Center Phase 1 construction will consist of Building 1 with 5 primary engine-generators and 2 reserve. Phases 2, 3, and 4 construction will consist of Buildings 2, 3, and 4 with 10 additional engines total. The data center will be leased for occupancy by companies that require a fully supported data storage and processing facility. Vantage will own and operate the generators. Air contaminant emissions from the Vantage Data Center project have been estimated based on build-out operation of the 17 emergency generator engines. Table 2a contains criteria pollutant potential- to- emit for the Vantage Data Center project excluding emissions due to commissioning of each engine. Table 2b contains toxic air pollutant potential-to- emit for the Vantage-Quincy Data Center project excluding emissions due to commissioning of each engine.

Table 2a: Criteria Pollutant Potential to Emit for Vantage Data Center			
Pollutant	**Emission Factor (EF) Reference**	**Emission Factors**	**Facility Emissions**
Criteria Pollutant		Lb/hr	tons/yr
2.1.1 NOx Total			5.83
2.1.1a NOx 10% load	MTU Guarantee	3.12	na
2.1.1b NOx 93.3% load	MTU Guarantee	15.4	na
2.1.1c NOx 100% load	MTU Guarantee	17.2	na
2.1.2 CO Total	MTU Guarantee	na	1.22
2.1.2a CO 10% load	MTU Guarantee	1.41	na
2.1.2b CO 81% load	MTU Guarantee	1.93	na
2.1.2c CO 93.3% load	MTU Guarantee	2.17	na
2.1.2d CO 100% load	MTU Guarantee	2.39	na
2.1.3 SO_2	MTU Guarantee	na	0.02
2.1.4 $PM_{2.5}$/DEEP Total	MTU Guarantee	na	0.22
2.1.4a DEEP 10% load	MTU Guarantee	0.205	na
2.1.4b DEEP 81% load	MTU Guarantee	0.396	na
2.1.4c DEEP 93.3% load	MTU Guarantee	0.47	na
2.1.4d DEEP 100% load	MTU Guarantee	0.512	na
2.1.5 VOC 10% Load	MTU Guarantee	0.39	0.36

Table 2b: Toxic Air Pollutant Potential to Emit for Vantage Data Center		
Pollutant	**AP-42 Section 3.4 EF**	**Facility Emissions**
Organic Toxic Air Pollutants	Lbs/MMbtu	tons/yr
2.1.6 Propylene	2.79E-03	6.8E-03
2.1.7 Acrolein	7.88E-06	1.92E-05
2.1.8 Benzene	7.76E-04	1.89E-03
2.1.9 Toluene	2.81E-04	6.85E-4
2.1.10 Xylenes	1.93E-04	4.71E-04
2.1.11 Napthalene	1.30E-04	1.96E-03
2.1.11 1,3 Butadiene	1.96E-05	4.77E-05
2.1.12 Formaldehyde	7.89E-05	1.92E-04
2.1.13 Acetaldehyde	2.52E-05	6.14E-05
2.1.14 Benzo(a)Pyrene	1.29E-07	2.98E-07
2.1.15 Benzo(a)anthracene	6.22E-07	1.44E-06
2.1.16 Chrysene	1.53E-06	3.55E-06
2.1.17 Benzo(b)fluoranthene	1.11E-06	2.58E-06
2.1.18 Benzo(k)fluoranthene	1.09E-07	2.53E-07
2.1.19 Dibenz(a,h)anthracene	1.73E-07	4.02E-07
2.1.20 Ideno(1,2,3-cd)pyrene	2.07E-07	4.81E-07

2.1.21 PAH (no TEF)	3.88E-06	9.01E-06
2.1.22 PAH (apply TEF)	4.98E-07	1.16E-06
State Criteria Pollutant Air Toxics		
2.1.23 DEEP/$PM_{2.5}$	MTU Guarantee	0.19
2.1.24 Carbon monoxide	MTU Guarantee	1.13
2.1.25 Sulfur dioxide	MTU Guarantee	0.02
2.1.26 Primary NO_2*	10% total NOx	0.6
2.1.27 Ammonia	15 ppmv at 15%O_2	0.36

*Assumed to be equal to 10% of the total NOx emitted.

DETERMINATIONS

In relation to this project, the State of Washington Department of Ecology (Ecology), pursuant to Revised Code of Washington (RCW) 70.94.152, Washington Administrative Code (WAC) 173-460-040, and WAC 173-400-110, makes the following determinations:

1. The project, if constructed and operated as herein required, will be in accordance with applicable rules and regulations, as set forth in Chapter 173-400 WAC, and Chapter 173-460 WAC, and the operation thereof, at the location proposed, will not emit pollutants in concentrations that will endanger public health.

2. The proposed project, if constructed and operated as herein required, will utilize best available control technology (BACT) as defined below:

Table 3: Best Available Control Technology Requirements	
Pollutant(s)	**BACT Determination**
Particulate matter (PM), carbon monoxide and volatile organic compounds (VOC)	a. Use of a catalyzed diesel particulate filter; b. Use of EPA Tier 2 certified engines if the engines are installed and operated as emergency engines, as defined at 40 CFR§60.4219; or applicable emission standards found in 40 CFR Part 89.112 Table 1 and 40 CFR Part 1039.102 Tables 6 and 7 if Model Year 2011 or later engines are installed and operated as non-emergency engines; c. Compliance with the operation and maintenance restrictions of 40 CFR Part 60, Subpart IIII; and d. Emission levels reflecting 90% control of uncontrolled engine emissions of VOC and CO, 87% of PM

Nitrogen oxides (NOx)	a. Use of urea-based SCR with no more than 15 ppmv ammonia slip; b. Use of EPA Tier 2 certified engines if the engines are installed and operated as emergency engines, as defined at 40 CFR§60.4219; or applicable emission standards found in 40 CFR Part 89.112 Table 1 and 40 CFR Part 1039.102 Tables 6 and 7 if Model Year 2011 or later engines are installed and operated as non-emergency engines; c. Compliance with the operation and maintenance restrictions of 40 CFR Part 60, Subpart IIII; and d. Emission levels reflecting 90% control of uncontrolled engine emissions of NOx
Sulfur dioxide	Use of ultra-low sulfur diesel fuel containing no more than 15 parts per million by weight of sulfur.

3. The proposed project, if constructed and operated as herein required, will utilize best available control technology for toxic air pollutants (tBACT) as defined below:

Table 4: Best Available Control Technology for Toxics Requirements	
Toxic Air Pollutant(s)	**tBACT Determination**
Acetaldehyde, carbon monoxide, acrolein, benzene, benzo(a)pyrene, 1,3-butadiene, diesel engine exhaust particulate, formaldehyde, propylene, toluene, total PAHs, xylenes	Compliance with the VOC, CO, PM BACT requirement.
Nitrogen dioxide	Compliance with the NOx BACT requirement.
Sulfur dioxide	Compliance with the SO_2 BACT requirement.

4. The modeled ambient concentration of one toxic air pollutant – diesel engine exhaust particulate matter – exceeds the Acceptable Source Impact Level (ASIL) for that pollutant, as defined in Chapter 173-460 WAC. Ecology has reviewed the health risks associated with diesel engine exhaust particulate from the proposed project, in accordance with WAC 173-460-090. Ecology has concluded that the health risks from the project are acceptable as defined in WAC 173-460-090(7). A summary of the technical analysis supporting this determination is hereby incorporated into this Notice of Construction Approval Order.

THEREFORE, IT IS ORDERED that the project as described in the Notice of Construction application and more specifically detailed in plans, specifications, and other information submitted to Ecology is approved for construction and operation, provided the following are met:

APPROVAL CONDITIONS

1. ADMINISTRATIVE CONDITION

1.1. The engine generators approved for operation by this order are to be used solely for those purposes described in application materials as further limited by the conditions of this Order. There shall be no operation of this equipment to produce power for demand-response arrangements, peak shaving arrangements, nor to provide power as part of a financial arrangement with another entity, nor to supply power to the grid.

2. EQUIPMENT RESTRICTIONS

2.1. Any engine used to power the electrical generators shall be certified by the manufacturer to meet 40 CFR 89 Tier IV emission levels or other specifications as required by the EPA at the time the engines are installed. Each engine to be installed must be permanently labeled by the manufacturer as an emergency engine in accordance with 40 CFR § 60.4210(f), and must be equipped with CO,VOC, PM, and NOX control equipment at least as effective as that evaluated in this NOC approval. Each engine approved in this Order must operate as an emergency engine as defined at $0 CFR 60, Subpart IIII or 40 CFR 63, Subpart ZZZZ.

2.2. The only engines and electrical generating units approved for operation at the Vantage Data Center are those listed by serial number in Table 1 above.

2.3. Replacement of failed engines with identical engines (same manufacturer and model) requires notification prior to installation but will not require new source review unless there is an increase in emission rates or community impacts.

2.4. The installation of any new engines after July 1, 2014 will require notification to Ecology that includes engine manufacturer's specification sheets. Ecology will decide whether new source review is required based on various factors including whether the new engines will have either an increased emission rate or result in an emission concentration that may increase impacts over those evaluated for this approval Order, or if an update to the current BACT analysis is necessary.

2.5. The seventeen (17) MTU Model 20V4000 engines exhaust stack heights shall be greater than or equal to 41 feet above ground level for engines providing power to Buildings 1,2, and 3, and 43.8 feet for engines serving Building ETC, and will be no more than 26 inches in diameter. All engines that may be used for this project shall be required to verify that exhaust stack parameters such as diameter, height, and exhaust rate and velocity do not result in community emissions impacts greater than what was evaluated for this project.

2.6. The manufacture and installation of the seventeen (17) engine/generator sets proposed for Building 1, Building 2, Building 3, and Building ETC of the project shall occur by July 1, 2015. If the manufacture and installation of the engines has not been completed by the above date, new source review may be required prior to installation, and community impacts will be re-evaluated if new source review is required. Vantage may request an extension of this time schedule, and Ecology may approve of an extension without revision to this Order.

2.7. This Order only applies to the seventeen (17) MTU Model 20V4000 engines, each with a rated full standby capacity of 4678 hp that were evaluated in the Notice of Construction application and second tier review. New source review will not be

required for engines with a rated full standby capacity of less than 4678 hp that comply with the engine certification requirements and control equipment requirements contained in Approval Condition 2.1 unless there is an increase in community emission impacts. On a case-by-case basis, Ecology may require additional ambient impacts analyses prior to installation of smaller engines.

3. OPERATING LIMITATIONS

3.1. Excluding commissioning/start-up testing, the fuel consumption at the Vantage Data Center facility shall be limited to a total of 169,500 gallons per year of diesel fuel equivalent to on-road specification No. 2 distillate fuel oil (less than 0.00150 weight percent sulfur). Total annual fuel consumption by the facility may be averaged over a three (3) year period using monthly rolling totals.

3.2. Except as provided in Approval Condition 3.5, the seventeen (17) Vantage Data Center engines are limited to the following average hours of operation, and averaging periods:

3.2.1. Each engine serving Building 1 shall not exceed 85 hours of operation (at any load, for any purpose) per year, on a rolling monthly 3-year average.

3.2.2. Operation of the two Building 1 reserve engines shall not exceed 10% load except for 8.5 hours at 100% load for corrective maintenance and step testing. The reserve engines may also provide outage (8 hours) or storm avoidance (16 hours) power in the event of the failure of a primary engine. These hours may be averaged over a three (3) year period using monthly rolling totals.

3.2.3. Operation of the five primary engines serving Building 1 shall not exceed 10% load except for 0.5 hours per year at 100% load for step testing, and 8 hours at 100% load for corrective maintenance, and 41 hours per year at 81.3% load for building transformer maintenance, storm avoidance, and power outages. These hours may be averaged over a three (3) year period using monthly rolling totals.

3.2.4. Each engine serving Building 2, 3 and ETC shall not exceed 69 hours of operation (at any load, for any purpose) per year, on a rolling monthly 3-year average. A total of 16 hours per year of 'storm avoidance' operation may be added to the above total without amendment of this approval upon satisfactory demonstration to Ecology that these hours are a necessity for the tenants of these buildings.

3.2.5. Operation of each of the Building 2 and Building 3 and ETC Building reserve engines (one at each building) shall not exceed 10% load except for 8.5 hours at 100% load for corrective maintenance and step testing. The reserve engines may also provide outage power in the event of the failure of a primary engine. These hours may be averaged over a three (3) year period using monthly rolling totals.

3.2.6. Operation of the six primary engines serving Building 2 (3) and Building 3 (3) shall not exceed 10% load except for 8.5 hours at 100% load for corrective maintenance and step testing, and 25 hours per year at 90% load for building transformer maintenance and power outages. These hours may be averaged over a three (3) year period using monthly rolling totals.

3.2.7. Operation of the primary engine serving Building ETC shall not exceed 10% load except for 8.5 hours at 100% load for corrective maintenance and step testing, and 25 hours per year at 93% load for building transformer maintenance and power outages. These hours may be averaged over a three (3) year period using monthly rolling totals.

3.3. A load bank will be used for electrical energy dissipation whenever prescheduled monthly maintenance testing, corrective testing or annual load bank testing occurs above idle.

3.4. The seventeen (17) MTU Model 20V4000 engines at the Vantage Data Center require periodic scheduled operation. To mitigate engine emission impacts, Vantage Data Center will perform all scheduled engine maintenance testing, bypass operations, and load testing during daylight hours. The Vantage Data Center shall develop an operating schedule that shall be available for review by Ecology upon request. Changes to the operating schedule will not trigger revision or amendment of this Order if approved in advance by Ecology.

3.5. Initial start-up (commissioning) testing for the seventeen (17) MTU Model 20V4000 engines at the Vantage Data Center is restricted to an average of 40 hours per generator and 8,692 gallons of fuel per generator, averaged over all generators installed during any consecutive 3 year period.

3.5.1. Except during site integration testing as specified below, only one engine shall be operated at any one time during start-up testing.

3.5.2. During a site integration test, no more than seven (7) generator engines may operate concurrently for up to four continuous hours.

3.5.3. All startup and commissioning testing shall be conducted during daylight hours.

3.5.4. Fuel use limits contained in Approval Conditions 3.1 and emission limits contained in Approval Conditions 5, are not applicable to initial commissioning testing of each engine.

4. GENERAL TESTING AND MAINTENANCE REQUIREMENTS

4.1. The Vantage Data Center will follow engine-manufacturer's recommended diagnostic testing and maintenance procedures to ensure that each engine will conform to the emission limits in Condition 5 of this approval throughout the life of each engine.

4.2. Within 12 months of the first engine installation and every 36 months thereafter, the Vantage Data Center shall measure emissions of particulate matter (PM), Volatile Organic Compounds (VOC), nitric oxide (NO), nitrogen dioxide (NO_2), carbon monoxide (CO), Ammonia (NH_3), and oxygen (O_2) from at least one representative engine's exhaust stack in accordance with Approval Condition 4.3. This testing will serve to demonstrate compliance with the emission limits contained in Section 5, and as an indicator of proper operation of the engines. The selection of the engine(s) to be

tested shall be subject to prior approval by Ecology and shall be defined in the source test protocol submitted to Ecology no less than 30 days in advance of any compliance-related stack sampling conducted by Vantage.

4.3. The following procedure shall be used for each test for the engines as required by Approval Condition 4.2 unless an alternate method is proposed by the Vantage Data Center and approved in writing by Ecology prior to the test:

4.3.1. Periodic emissions testing should be combined with other pre-scheduled maintenance testing and annual load bank engine testing. Additional operation of the engines for the purpose of emissions testing beyond the operating hours allowed in this Order must be approved by Ecology in writing.

4.3.2. PM including the condensible fraction, NO, NO_2, VOC, CO and ammonia emissions measurement shall be conducted for each engine tested at the proposed maximum engine load that corresponds to scheduled engine operating scenarios in Approval Conditions 3.2.

4.3.3. EPA Reference Methods from 40 CFR 60, 40 CFR 51, BAAQMD ST-1B (for ammonia) and/or 40 CFR 89 as appropriate for each pollutant shall be used for at least one (representative) engine at this data center. A test plan will be submitted for Ecology approval at least 30 days before any testing is conducted and must include the criteria used to select the engine for testing, as well as any modifications to the standard test procedures contained in the above references.

4.3.4. The F-factor method, as described in EPA Method 19, may be used to calculate exhaust flow rate through the exhaust stack. The fuel meter data, as measured according to Approval Condition 4.6, shall be included in the test report, along with the emissions calculations.

4.4. Each engine shall be equipped with a properly installed and maintained non-resettable meter that records total operating hours.

4.5. Each engine shall be connected to a properly installed and maintained fuel flow monitoring system that records the amount of fuel consumed by that engine during operation.

5. EMISSION LIMITS

5.1. The seventeen (17) engines shall meet the emission rate limitations contained in this section. The limits are for an engine operating in a steady-state mode (warm) and do not include emission rates during initial commissioning testing of the engines. The annual limits may be averaged over a rolling monthly three year period. Unless otherwise approved by Ecology in writing, compliance with emission limits for those pollutants that are required to be tested under Approval Conditions 4.2 and 4.3 shall be based on emissions test data as determined according to those approval conditions.

5.2. If required to demonstrate compliance with the g/kW-hr EPA Tier IV average emission limits through stack testing, the Vantage Data Center shall conduct exhaust stack testing

and average emission rates for 5 individual operating loads (10%, 25%, 50%, 75% and 100%) according to 40 CFR §89.410, Table 2 of Appendix B, 40 CFR Part 89, Subpart E, and/or 40 CFR Part 60, Subpart IIII, or any other applicable EPA requirement in effect at the time the engines are installed.

5.3. Nitrogen oxide (NOx) emissions from each of the seventeen (17) MTU Model 20V4000 engines rated at 4678 brake horse power shall not exceed the following emission rates at the stated loads, based on uncontrolled engine emission factors provided by the engine manufacturer and on control effectiveness guarantees included in the NOC application documents:

Table 5.3: Nitrogen oxide (NOx) emission rate limits				
	Operating Scenario	Operating Load		Emissions Limit per engine in lb/hr[1]
5.3.1	Annual Step Testing	100%		5.17
5.3.2	Corrective Maintenance	100%		5.17
5.3.3	Building 1 Outage, Storm Avoidance	81% 10%		3.72 0.57
5.3.4	Buildings 2 and 3 Outage	90%		4.36
5.3.5	Building ETC Outage	93%		4.61

[1] MTU Uncontrolled Engine Emissions Less The Fractional Control Guarantee in NOC Documents

5.4. Nitrogen dioxide (NO_2) emissions from each of the seventeen (17) MTU Model 20V4000 engines rated at 2937 brake horse power shall not exceed the following emission rates at the stated loads, based on uncontrolled engine emission factors provided by the engine manufacturer and on control effectiveness guarantees included in the NOC application documents:

Table 5.4: Nitrogen dioxide (NO_2) emission rate limits				
	Operating Scenario	Operating Load		Emissions Limit per engine in lb/hr[1]
5.4.1	Annual Step Testing	100%		0.52
5.4.2	Corrective Maintenance	100%		0.52
5.4.3	Building 1 Outage, Storm Avoidance	81% 10%		0.37 0.07
5.4.4	Buildings 2 and 3 Outage	90% 10%		0.44 0.07
5.4.5	Building ETC Outage	93% 10%		0.46 0.07

[1] 10% of total NOx emission limits

5.5. Carbon monoxide emissions from each of the seventeen (17) MTU Model 20V4000 engines rated at 4678 brake horse power shall not exceed the following emission rates at the stated loads, based on uncontrolled engine emission factors provided by the engine manufacturer and on control effectiveness guarantees included in the NOC application documents:

Table 5.5: Carbon monoxide (CO) emission rate limits				
	Operating Scenario	Operating Load		Emissions Limit per engine in lb/hr[1]
5.5.1	Annual Step Testing	100%		0.68
5.5.2	Corrective Maintenance	100%		0..68
5.5.3	Building 1 Outage, Storm Avoidance	81% 10%		0.53 0.28
5.5.4	Buildings 2 and 3 Outage	90% 10%		0.60 0.28
5.5.5	Building ETC Outage	93% 10%		0.63 0.28

[1] MTU Uncontrolled Engine Emissions Less The Fractional Control Guarantee in NOC Documents

5.6. Diesel Engine Exhaust Particulate (DEEP) emissions (Total PM after control on these engines) from each of the seventeen (17) MTU Model 20V4000 engines rated at 4678 brake horse power shall not exceed the following emission rates at the stated loads, based on uncontrolled engine emission factors provided by the engine manufacturer and on control effectiveness guarantees included in the NOC application documents:

Table 5.6: Diesel Engine Exhaust Particulate (DEEP) emission rate limits				
	Operating Scenario	Operating Load		Emissions Limit per engine in lb/hr[1]
5.6.1	Annual Step Testing	100%		0.42
5.6.2	Corrective Maintenance	100%		0.42
5.6.3	Building 1 Outage, Storm Avoidance	81% 10%		0.32 0.17
5.6.4	Buildings 2 and 3 Outage	90% 10%		0.37 0.17
5.6.5	Building ETC Outage	93% 10%		0.38 0.17

[1] MTU Uncontrolled Engine Emissions Less The Fractional Control Guarantee in NOC Documents

5.7. Volatile Organic Compound (VOC) emissions from each of the seventeen (17) MTU Model 20V4000 engines rated at 4678 brake horse power shall not exceed the following emission rates at the stated loads, based on uncontrolled engine emission factors

provided by the engine manufacturer and on control effectiveness guarantees included in the NOC application documents:

Table 5.7: Volatile Organic Compound (VOC) emission rate limits				
	Operating Scenario	Operating Load		Emissions Limit per engine in lb/hr[1]
5.7.1	Annual Step Testing	100%		0.11
5.7.2	Corrective Maintenance	100%		0.11
5.7.3	Building 1 Outage, Storm Avoidance	81% 10%		0.11 0.12
5.7.4	Buildings 2 and 3 Outage	90% 10%		0.11 0.12
5.7.5	Building ETC Outage	93% 10%		0.11 0.12

[1] MTU Uncontrolled Engine Emissions Less The Fractional Control Guarantee in NOC Documents

5.8. Total Particulate Matter (PM) emissions from all 17 engines combined shall not exceed 0.19 tons/yr (380 lbs/yr). All PM emissions shall be considered diesel engine exhaust particulate (DEEP) and $PM_{2.5}$ emissions.

5.9. Nitrogen dioxide (NO_2) emissions from all 17 engines combined shall not exceed 29.24 lbs/hr and 0.6 tons/yr.

5.10. Volatile organic compound (VOC) emissions from all 17 engines combined shall not exceed 0.37 tons/yr (740 lbs/yr).

5.11. Carbon Monoxide (CO) emissions from all 17 engines combined shall not exceed 1.22 tons per year (2440 lbs/yr).

5.12. Ammonia emissions from any of the 17 engines at the Vantage Center shall not exceed 15 ppmvd at 15%O2, nor 0.64 pounds per hour.

5.13. Sulfur dioxide emissions from all 17 engines combined shall not exceed 0.020 tons/yr (40 lbs/yr).

5.14. Visual emissions from each diesel electric generator exhaust stack shall be no more than 5 percent, with the exception of a two (2) minute period after unit start-up. Visual emissions shall be measured by using the procedures contained in 40 CFR 60, Appendix A, Method 9.

6. OPERATION AND MAINTENANCE MANUALS

6.1. A site-specific O&M manual for the Vantage Data Center facility equipment shall be developed and followed. Manufacturers' operating instructions and design specifications for the engines, generators, and associated equipment shall be included in

the manual. The O&M manual shall be updated to reflect any modifications of the equipment or its operating procedures. Emissions that result from failure to follow the operating procedures contained in the O&M manual or manufacturer's operating instructions may be considered proof that the equipment was not properly installed, operated, and/or maintained. The O&M manual for the diesel engines and associated equipment shall at a minimum include:

6.1.1. Manufacturer's testing and maintenance procedures that will ensure that each individual engine will conform to the EPA Tier Emission Standards appropriate for that engine throughout the life of the engine.
6.1.2. Normal operating parameters and design specifications.
6.1.3. Operating and maintenance schedules.

7. SUBMITTALS

All notifications, reports, and other submittals shall be sent to:

Washington State Department of Ecology
Air Quality Program
4601 N. Monroe Street
Spokane, WA 99205-1295

8. RECORDKEEPING

8.1. All records, Operations and Maintenance Manual, and procedures developed under this Order shall be organized in a readily accessible manner and cover a minimum of the most recent 60-month period. Any records required to be kept under the provisions of this Order shall be provided within 30 days to Ecology upon request. The following records are required to be collected and maintained:

8.1.1. Fuel receipts with amount of diesel and sulfur content for each delivery to the facility.

8.1.2. Monthly and annual hours of operation for each diesel engine.

8.1.3. Purpose, electrical load and duration of runtime for each diesel engine period of operation.

8.1.4. Annual gross power generated by each independent tenant at the facility and total annual gross power for the facility.

8.1.5. Upset condition log for each engine and generator that includes date, time, duration of upset, cause, and corrective action.

8.1.6. Any recordkeeping required by 40 CFR Part 60 Subpart IIII.

8.1.7. Air quality complaints received from the public or other entity, and the affected emissions units.

9. REPORTING

9.1. Within 10 business days after entering into a binding agreement with an independent tenant, Vantage shall provide Ecology with the company name and contact information of the company representative. The serial number, manufacturer make and model,

standby capacity, and date of manufacture will be submitted prior to installation of engines in the Building 2, 3, and ETC phases of this project.

9.2. The following information will be submitted to the AQP at the address in Condition 7 above by January 31 of each calendar year. This information may be submitted with annual emissions information requested by the AQP.

9.2.1. Monthly rolling annual total summary of air contaminant emissions,
9.2.2. Monthly rolling hours of operation with annual total,
9.2.3. Monthly rolling gross power generation with annual total as specified in Approval Condition 8.1.4,
9.2.4. A log of each start-up of each diesel engine that shows the purpose, fuel usage, and duration of each period of operation.

9.3. Any air quality complaints resulting from operation of the emissions units or activities shall be promptly assessed and addressed. A record shall be maintained by each tenant of the action taken to investigate the validity of the complaint and what, if any, corrective action was taken in response to the complaint. Ecology shall be notified within three (3) days of receipt of any such complaint.

9.4. Each tenant shall notify Ecology by e-mail or in writing within 24 hours of any engine operation of greater than 60 minutes if such engine operation occurs as the result of a power outage or other unscheduled operation. This notification does not alleviate the tenant from annual reporting of operations contained in any section of Approval Condition 9.

10. GENERAL CONDITIONS

10.1. **Commencing/Discontinuing Construction and/or Operations:** This approval shall become void if construction of the facility is not begun within 18 months of permit issuance or if facility operation is discontinued for a period of eighteen (18) months or more. In accordance with WAC 173-400-111(7)(c), each phase must commence construction within 18 months of the projected and approved construction dates in this Order.

10.2. **Compliance Assurance Access:** Access to the source by representatives of Ecology or the EPA shall be permitted upon request. Failure to allow such access is grounds for enforcement action under the federal Clean Air Act or the Washington State Clean Air Act, and may result in revocation of this Approval Order.

10.3. **Availability of Order and O&M Manual:** Legible copies of this Order and the O&M manual shall be available to employees in direct operation of the diesel electric generation station, and be available for review upon request by Ecology.

10.4. **Equipment Operation:** Operation of the 17 MTU Model 20V4000 diesel engines used to power emergency electrical generators and related equipment shall be conducted in compliance with all data and specifications submitted as part of the NOC application and in accordance with the O&M manual, unless otherwise approved in writing by Ecology.

10.5. **Modifications:** Any modification to the generators or engines and their related equipment's operating or maintenance procedures, contrary to information in the NOC application, shall be reported to Ecology at least 60 days before such modification. Such modification may require a new or amended NOC Approval Order.

10.6. **Activities Inconsistent with the NOC Application and this Approval Order:** Any activity undertaken by the permittee or others, in a manner that is inconsistent with the NOC application and this determination, shall be subject to Ecology enforcement under applicable regulations.

10.7. **Obligations under Other Laws or Regulations:** Nothing in this Approval Order shall be construed to relieve the permittee of its obligations under any local, state or federal laws or regulations.

All plans, specifications, and other information submitted to the Department of Ecology relative to this project and further documents and any authorizations or approvals or denials in relation thereto shall be kept at the Eastern Regional Office of the Department of Ecology in the "Air Quality Controlled Sources" files, and by such action shall be incorporated herein and made a part thereof.

Nothing in this approval shall be construed as obviating compliance with any requirement of law other than those imposed pursuant to the Washington Clean Air Act and rules and regulations thereunder.

Authorization may be modified, suspended or revoked in whole or part for cause including, but not limited to the following:

a. Violation of any terms or conditions of this authorization;

b. Obtaining this authorization by misrepresentation or failure to disclose fully all relevant fact.

The provisions of this authorization are severable and, if any provision of this authorization, or application of any provision to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this authorization, shall not be affected thereby.

YOUR RIGHT TO APPEAL

You have a right to appeal this Approval Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Approval Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this Approval Order:

- File your appeal and a copy of this Approval Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

- Serve a copy of your appeal and this Approval Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel RD SW STE 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

For additional information visit the Environmental Hearings Office Website: http://www.eho.wa.gov

To find laws and agency rules visit the Washington State Legislature Website: http://www1.leg.wa.gov/CodeReviser

DATED this th day of August, 2012, at Spokane, Washington.

Prepared By:

Robert Koster, P.E.
Eastern Regional Office
Department of Ecology
State of Washington

Approved By:

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