



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY  
4601 N Monroe Street • Spokane, WA 99205-1295 • 509-329-3400

July 30, 2019

Matt Hanshew  
Oath Holdings, Inc.  
1010 Yahoo Way  
Quincy, WA 98848

Re: Oath Holdings, Inc. Approval Order No. 19AQ-E048

Dear Matt Hanshew:

The Department of Ecology's Air Quality Program has processed the responsible official change for Oath Holdings, Inc. located at 1010 Yahoo Way, Quincy, Washington in Grant County.

Ecology's approval is based on the Notice of Construction application and supplemental information submitted on June 26, 2019. The fifteen-day notification period required per Washington Administrative Code (WAC) 173-400-171, has been completed. No requests for a public comment period were received by Ecology.

Enclosed is Coverage Order No. 19AQ-E048 for Oath Holdings, Inc.

Thank you for your patience while we processed your application. If you have any questions, please contact me at [jfil461@ecy.wa.gov](mailto:jfil461@ecy.wa.gov) or 509-329-3407.

Sincerely,

Jenny Filipy, P.E.  
Commercial/Industrial Unit  
Regional Air Quality Program

JF:jab

Enclosures: Approval Order No. 19AQ-E048  
Certified Mail: 7016 1970 0000 9925 6675



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

IN THE MATTER OF APPROVING A NEW ) Synthetic Minor  
AIR CONTAMINANT SOURCE FOR )  
**OATH HOLDINGS, INC.** ) APPROVAL ORDER No. 19AQ-E048  
**OATH DATA CENTER** )

TO: Paul Bonaro  
VP Data Center Operations  
Oath Holdings, Inc.  
701 First Avenue  
Sunnyvale, CA 94089

Matt Hanshew  
Facility Contact  
Oath Holdings, Inc.  
1010 Yahoo Way  
Quincy, WA 98848

## EQUIPMENT

Table 1.1 contains a list of equipment that was evaluated for this order of approval for the Oath Holdings, Inc. Data Center (Oath or Oath Quincy Data Center) located at 1010 Yahoo! Way and 1500 M Street NE, Quincy, Washington. Engine sizes listed in the tables are in megawatt (MWe) units with the “e” indicating “electrical” based on generator power ratings listed on the engine specifications. Thirteen existing 2.0 MWe MTU Detroit Diesel emergency generator unit identification numbers R through 12 were approved in Notice of Construction (NOC) approval Order No. 07AQ-E241 issued on November 13, 2007. Order No. 07AQ-E241 was rescinded and replaced by NOC approval Order No. 11AQ-E399 issued on March 28, 2011. Order No. 11AQ-E399 included the original 13 engines and ten 2.0 MWe MTU Detroit Diesel emergency generator units with identification numbers 13 through R3. Twenty five new emergency generator units at the facility were proposed in Yahoo’s Project Genesis final NOC application submitted to Ecology on December 23, 2015, and have capacities of 2.0 MWe (20 units), and 2.75 MWe (5 units). Yahoo’s application provided Ecology with a combination of the following anticipated engine manufacturers and models to be used for the 25 new engines: Caterpillar Models 3516C, C175, and 3512C; Cummins DQKAB and DQLF; MTU 16V4000 DS2000 and 20V4000 DS2800. Oath Holdings Inc. is the successor to Yahoo, the original applicant.

Order 16AQ-E012, Amendment 1 (dated November 6, 2017) included revisions to installation scheduling and also minor corrections for consistency with the December 23, 2015 application. Specifically, Amendment 1 addressed a request to change the following: corrections to the NO<sub>2</sub> emission rate for existing engines; corrections to facility naphthalene emissions; and updates of installed engine serial numbers and scheduling. Order 16AQ-E012, Amendment 2 addresses the applicant’s request to indicate transfer of the permit to a new owner/operator and corrects serial number information for four generators.

Order 19AQ-E048, addresses a change in the facility contact and responsible official.

This approval Order covers all 48 engines (existing and proposed). Specific engine information regarding existing engines is provided in Table 1.1.



The words “engine” or “generator” are used synonymously through the remainder of this Order to refer to the overall unit. This approval order also includes 6 Evapco Model AT 212-636 cooling towers installed under NOC 07AQ-E241 for the first 13 existing engines (engines R through 12). Cooling units dissipate heat from electronic equipment at the facility. Cooling unit information is provided in Table 1.2.

Total Units	Total Number of Fans per Cooling Unit	Total Number of Cooling Tower Cells per Unit	Total Number of Cooling Cells
6	2	2	12

Engines 13 through R3 at Oath do not use evaporative cooling systems. According to the application, the evaporative cooling units to be used for the new Project Genesis engines do not introduce contaminants into the atmosphere.

Combined facility potential to emit (PTE) estimated emissions from all engines and cooling towers are provided in Table 1.3.

<b>Criteria Pollutants (Engines)</b>	<b>TPY</b>
NO <sub>x</sub>	95
VOC	2.8
CO	17.9
Total PM <sub>10</sub> /PM <sub>2.5</sub> (filterable and condensable)	5.5
SO <sub>2</sub>	0.025
<b>Toxic Air Pollutants (Engines)</b>	<b>TPY</b>
Primary NO <sub>2</sub>	9.5
DEEP	1.8
CO	17.9
SO <sub>2</sub>	0.025
Propylene	1.3E-01
Acrolein	3.5E-04
Benzene	3.5E-02
Xylenes	8.6E-03
Napthalene	5.8E-03
1,3 Butadiene	1.8E-03
Formaldehyde	3.5E-03
Benzo(a)Pyrene	1.2E-05
Benzo(b)fluoranthene	5.0E-05
Dibenz(a,h)anthracene	1.6E-05
<b>Cooling Tower Emissions</b>	<b>TPY (or lbs/yr where listed)</b>
PM <sub>10</sub> /PM <sub>2.5</sub>	2.11
Cadmium	(0.00395 lb/yr)

## **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, 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).
3. The proposed project, if constructed and operated as herein required, will utilize best available control technology for toxic air pollutants (tBACT).
4. The modeled ambient concentrations of two toxic air pollutants – diesel engine exhaust particulate matter and nitrogen dioxide – exceed the Acceptable Source Impact Levels (ASILs) for those pollutants, as defined in Chapter 173-460 WAC. Ecology has evaluated the health risks associated with diesel engine exhaust particulate and nitrogen dioxide emissions from the proposed project, in accordance with WAC 173-460-090. Ecology has concluded that the health risks from the project are acceptable in accordance with WAC 173-460-090(7). The technical analysis supporting this determination is incorporated into the Technical Support Document associated with 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 Notice of Construction Approval Order No. 16AQ-E012, Amendment 2 is rescinded and replaced entirely with this Approval Order [19AQ-E048]. All previous Orders remain rescinded under this Order.
- 1.2 Oath will provide Quincy School District administrators with the telephone number for Oath and a 24-hour contact number for an Oath manager. Oath will notify the school whenever (Ecology) approved changes occur in the maintenance testing schedule. As decided by the school administrators and Oath, an ongoing relationship shall be established to facilitate future communications.
- 1.3 Oath shall make available information on diesel engine exhaust health risks, emergency generator operations to existing residents, and commercial and industrial facilities within 0.25 miles of Oath property boundaries. Information on diesel exhaust health risks and emergency generator operations shall be provided to the City of Quincy Building and Planning Department for distribution to new homeowners and businesses that locate on undeveloped parcels within 0.25 miles of the Oath property boundary. The health risk information may be, or should be similar to, Ecology Focus on Diesel Exhaust Health Risks dated February 2011, Publication Number 11-02-005. A copy of

the materials to be used to comply with this condition shall be provided to Ecology for review, and distributed prior to starting Project Genesis operations.

## **2. EQUIPMENT RESTRICTIONS**

- 2.1** Any engine used to power the electrical generators shall be operated in accordance with applicable 40 CFR 60, Subpart IIII requirements including but not limited to: certification by the manufacturer to meet the 40 CFR 89 EPA Tier 2 emissions levels as required by 40 CFR 60.4202; and installed and operated as emergency engines, as defined in 40 CFR 60.4219. At the time of the effective date of this permit, Tier 4 interim and Tier 4 final certified engines (as specified in 40 CFR 1039.102 Table 7 and 40 CFR 1039.101 Table 1, respectively), are not required for 2.0 to 2.75 MWe electrical generators used for emergency purposes as defined in 40 CFR 60.4219 in attainment areas in Washington State. However, any engines installed at the Oath Data Center after Tier 4 or other limits are implemented by EPA for emergency generators, shall meet the applicable specifications as required by EPA at the time the emergency engines are installed.
- 2.2** The only engines and electrical generating units approved for operation at Oath are those listed by serial number in Table 1.1 of this Order.
- 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 of the engines permitted according to Conditions 3.5 and 10.1, 18 months after the issuance date of this permit 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 community impacts over those evaluated for this Order, or if an update to the current BACT analysis is necessary.
- 2.5** The 48 engine-generators exhaust stack heights shall conform to the limitations in Conditions 2.5.1, 2.5.2, and 2.5.3:

  - 2.5.1** The 13 existing engine stack heights (Unit ID: R through 12) shall be greater than or equal to 20 feet above ground level
  - 2.5.2** The 10 existing stack heights (Unit ID: 13 through R3) shall be greater than or equal to 30 feet above ground level.
  - 2.5.3** The 25 Project Genesis stack heights shall be greater than or equal to 42 feet above ground level.
- 2.6** This Order only applies to the 48 engines, each with a rated full standby capacity as listed in Table 1.1, which are consistent with the engines that were evaluated in Notice of Construction applications and second tier review. New source review will not be required for engines with a rated full standby capacity of less than or equal to the ratings in Table 1.1 that comply with the engine certification requirements contained in Approval Conditions 2.1 and 5 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.

2.7 In addition to meeting EPA Tier 2 certification requirements, the source must have written verification from the engine manufacturer that each of the 48 engines of the same make, model, and rated capacity installed at the facility uses the same electronic Programmable System Parameters, i.e., configuration parameters, in the electronic engine control unit.

**3. OPERATING LIMITATIONS**

3.1 The fuel consumption at Oath shall be limited to a total of approximately 648,900 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 year period using monthly rolling totals and shall conform to Conditions 3.1.1 and 3.1.2:

3.1.1 The 13 existing engines (Unit ID: R through 12) shall be limited to 143,648 gallons per year of diesel fuel averaged over a three year period using monthly rolling totals.

3.1.2 The 10 existing engines (Unit ID: 13 through R3) shall be limited to 103,551 gallons per year of diesel fuel averaged over a three year period using monthly rolling totals.

3.1.3 The 25 Project Genesis engines shall be limited to a maximum of 401,700 gallons per year of diesel fuel averaged over a three-year period using monthly rolling totals.

3.2 Except as provided in Approval Condition 3.5, the 48 Oath engines are restricted to the annual limits in Tables 3.2.1 and 3.2.2.

**Table 3.2.1 Existing Engine Operating Restrictions for Engines R through 12 (13 engines) and Engines 13 through R3 (10 engines)**

Operating Activity	Hours/year per generator	Operating Electrical Loads (%)	Number of Engines Operating Concurrently (Engines R - 12)	Number of Engines Operating Concurrently (Engines 13 - R3)
Maintenance Testing	12	0	1	1
Load Testing	4	100	1	1
Electrical Bypass	36	2 at 40, or 1 at 80	2	2
Power Outage	48	8 at 90, 2 at idle*	13	10
<b>Total</b>	100			

\*As noted in the application, potential to emit values are conservatively estimated based on 10 percent load because manufacturers do not publish emissions data for the idle operating condition. However, engines shall not be continuously operated at low loads (<30%) except during idle (zero load) and when it is required during stack testing (10% & 25%).

<b>Table 3.2.2 Proposed Engine Operating Restrictions for Project Genesis Engines (25 engines)</b>			
<b>Operating Activity</b>	<b>Hours/year per generator</b>	<b>Operating Electrical Loads (%)</b>	<b>Number of Engines Operating Concurrently</b>
Maintenance Testing	12	Any random load* from zero to 100%	1
Load Testing	4	Any random load* from zero to 100%	1
Power Outage	84	Any random load* from zero to 100%	25
<b>Total</b>	<b>100</b>		

\* Engines shall not be continuously operated at low loads (<30%) except during idle (zero load) and when it is required during stack testing (10% & 25%).

- 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 zero electrical load.
- 3.4** The 48 engines at Oath require periodic scheduled operation. To mitigate engine emission impacts, Oath will perform all engine testing during daylight hours. Engine testing may take place outside of these time restrictions upon coordination by Oath with other data centers in northeast Quincy to minimize engine emission impacts to the community. Oath shall maintain records of the coordination communications with other data centers, and those communications shall be available for review by Ecology upon request.
- 3.5** Initial start-up (commissioning) testing for the remaining 21 Project Genesis engines not yet installed, shall be performed in four phases (Genesis phase 1, Genesis phase 2, Genesis phase 3, and Genesis phase 4), where each engine shall be restricted to an average of 16 hours per generator averaged over all generators installed and shall comply with the following Conditions (for the purposes of scheduled phasing, initial phase engine Unit ID #14, is not a Project Genesis engine, but shall be included in the Genesis phased schedule because it was not yet installed at the time of this Order):
- 3.5.1** For Genesis phase 1, only four 2.0-MW engines shall be commissioned. For Genesis phase 2, only four 2.0-MW engines and one 2.75-MW engines shall be commissioned. For Genesis phase 3, only four 2.0-MW engines and one 2.75-MW engines shall be commissioned. For Genesis phase 4, only seven 2.0-MW engines and one 2.75-MW engines shall be commissioned. All four phases shall comply with General Condition 10.1.
  - 3.5.2** Except during site integration testing as specified below, only one engine shall be operated at any one time during start-up testing.
  - 3.5.3** During a site integration test, no more than 25 engines may operate concurrently for up to four continuous hours.
  - 3.5.4** All startup and commissioning testing shall be conducted during daylight hours.
  - 3.5.5** Fuel use limits and emissions limits contained in Approval Conditions 3.1 and 5, remain in effect during initial start-up testing.
- 3.6.** All of the cooling units shall comply with the following conditions:



- 3.6.1 Each individual cooling unit shall use a mist eliminator with a maximum drift rate of 0.001 percent of the circulating water flow rate. The drift rate shall be guaranteed by the unit manufacturer.
- 3.6.2 Chemicals containing hexavalent chromium cannot be used to pre-treat the cooling unit makeup water.

**4. GENERAL TESTING AND MAINTENANCE REQUIREMENTS**Oath will follow engine-manufacturer's recommended diagnostic testing and maintenance procedures to ensure that each engine will conform to Condition 5 emission limits and Tier 2 emission specifications as listed in 40 CFR 89 throughout the life of each engine.

4.2 Oath shall measure emissions of particulate matter (PM), non-methane hydrocarbons, nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO) from engine exhaust stacks in accordance with Approval Condition 4.3. This testing will serve to demonstrate compliance with the g/kW-hr EPA Tier 2 average 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 in accordance with Conditions 4.2.1 and 4.2.2 and shall be defined in a source test protocol submitted to Ecology no less than 30 days in advance of any compliance-related stack sampling conducted by Oath. Additional testing as described in 40 CFR 60.8(g) may be required by Ecology at their discretion.

4.2.1 For new engines, at least one representative engine from each manufacturer and each size engine from each manufacturer shall be tested as soon as possible after commissioning and before it becomes operational. Alternatively, the engine may be tested at the manufacturer's testing cell if the following conditions are met and verified by the manufacturer in a letter to Ecology: At a minimum, the test cell shall reproduce site conditions for the following parameters: elevation, intake air temp, and humidity. The letter from the manufacturer shall verify that test conditions reproduce facility site conditions in their test cell using the same testing methods that are required for certification of the engines.

4.2.2 Every 60 months after the first testing performed in Condition 4.2.1, Oath shall test at least one engine, including the engine with the most operating hours as long as it is a different engine from that which was tested during the previous 60-month interval testing.

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 Oath 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 For new engine testing, PM (filterable fraction only), non-methane hydrocarbons, NO, NO<sub>2</sub>, and CO emissions measurement shall be conducted at five individual generator electrical loads of 100%, 75%, 50%, 25%, and 10% using weighting factor averaging according to Table 2 of Appendix B to Subpart E of 40 CFR 89.

- 4.3.2.1.** For existing engine testing every 60 months, Oath may choose the following alternate to testing at all five loads: the data center may test at the average load operated at for that specific engine over the previous 36 months of operation to verify compliance with the manufacturers' site corrected Not to Exceed (NTE) Emission Limits at the operated load rate. Alternatively, the facility has the option of testing at the average load it expects to operate for the next 60 month period of operation, if known to be different than the previous 36 months of operation. This alternative option, must also verify compliance with the manufacturer's site corrected NTE Emission Limits at the expected operational load rate.
- 4.3.3** EPA Reference Methods and test procedures from 40 CFR 60, 40 CFR 51, and/or 40 CFR 89 as appropriate for each pollutant shall be used including Method 5 or 40 CFR 1065 for PM. 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 procedure 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 4.5, shall be included in the test report, along with the emissions calculations.
- 4.3.5** In the event that any source test or visual emission observation shows non-compliance with the emission limits in Condition 5, Oath shall repair or replace the engine and repeat the test on the same engine plus two additional engines of the same make and model as the engine showing non-compliance. Test reports shall be submitted to Ecology as provided in Condition 9.5 of this Order.
- 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 48 engines described in this Order shall meet the emission rate limitations contained in this section. 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** To demonstrate compliance with 40 CFR 89(112 & 113) g/kW-hr EPA Tier 2 weighted average emission limits through stack testing, Oath shall conduct exhaust stack testing as described in Conditions 4.2 and 4.3 at the loads of 100%, 75%, 50%, 25%, and 10% using weighted averaging according to Table 2 of Appendix B to Subpart E of 40 CFR 89, or any other applicable EPA requirement in effect at the time the engines are installed. Testing may be conducted using 40 CFR 1065.

5.3 Nitrogen oxides (NO<sub>x</sub> or NO + NO<sub>2</sub>) emissions from each of the 48 engines shall not exceed the following emission rates at the stated loads, based on emission factors provided by the engine manufacturer:

<b>Table 5.3: Nitrogen oxides (NO<sub>x</sub>) and non-methane hydrocarbon (NMHC) emission rate limits</b>			
	Operating Scenario	Operating Electrical Load	Emissions Limit per engine
5.3.1	Maximum Emission Rate Per Load	Maximum Rate at 100%, 75%, 50%, 25%, or 10%	44.3 lb/hr <sup>1</sup> (NO <sub>x</sub> ) for 2.0 MWe engines <sup>2</sup>
			74.4 lb/hr <sup>1</sup> (NO <sub>x</sub> ) for 2.75 MWe engines
5.3.2	Average Emission Rate Across All Loads	Weighted Average of Rates at 100%, 75%, 50%, 25%, and 10%	5-load weighted average of 6.4 g/kW-hr (NO <sub>x</sub> + NMHC)

- 1 Limit represents the higher value of either the Caterpillar “Not To Exceed” or EPA Tier-2 (6.12 g/kw-hr). Total engine NO<sub>x</sub> emissions shall comply with Tier 2 emissions limits in 40 CFR 89.
- 2 2.0 MWe engines installed prior to 2016 shall have an emission limit of 46.2 lb/hr.

5.4 Nitrogen dioxide (NO<sub>2</sub>) emissions from each of the 48 engines shall not exceed the following emission rates at the stated loads, based on emission factors provided by the engine manufacturer:

<b>Table 5.4: Nitrogen dioxide (NO<sub>2</sub>) emission rate limits</b>			
	Operating Scenario	Operating Electrical Load	Emissions Limit per engine
5.4.1	Maximum Emission Rate Per Load	Maximum Rate at 100%, 75%, 50%, 25%, or 10%	4.43 lb/hr <sup>1</sup> (NO <sub>2</sub> ) for 2.0 MWe engines <sup>2</sup>
			7.44 lb/hr <sup>1</sup> (NO <sub>2</sub> ) for 2.75 MWe engines
5.4.2	Average Emission Rate Across All Loads	Weighted Average of Rates at 100%, 75%, 50%, 25%, and 10%	5-load weighted average of 0.62 g/kW-hr

- 1 10% of total NO<sub>x</sub> emission limits
- 2 2.0 MWe engines installed prior to 2016 shall have an emission limit of 4.62 lb/hr.

5.5 Carbon monoxide emissions from each of the 48 engines shall not exceed the following emission rates at the stated loads, based on emission factors provided by the engine manufacturer:

<b>Table 5.5: Carbon monoxide (CO) emission rate limits</b>			
	Operating Scenario	Operating Electrical Load	Emissions Limit per engine
5.5.1	Maximum Emission Rate Per Load	Maximum Rate at 100%, 75%, 50%, 25%, or 10%	5.02 lb/hr <sup>1</sup> (CO) for 2.0 MWe engines
			14.3 lb/hr <sup>1</sup> (CO) for 2.75 MWe engines
5.5.2	Average Emission Rate Across All Loads	Weighted Average of Rates at 100%, 75%, 50%, 25%, and 10%	5-load weighted average of 3.5 g/kW-hr

<sup>1</sup> Limit represents the higher value of either the Caterpillar “Not To Exceed” or EPA Tier-2 (3.5 g/kw-hr). Total engine CO emissions shall comply with Tier 2 emissions limits in 40 CFR 89.

5.6 Diesel Engine Exhaust Particulate (DEEP) emissions from each of the 48 engines power shall not exceed the following emission rates at the stated loads, based on emission factors provided by the engine manufacturer:

<b>Table 5.6: Diesel Engine Exhaust Particulate (DEEP) emission rate limits</b>			
	Operating Scenario	Operating Electrical Load	Emissions Limit per engine
5.6.1	Maximum Emission Rate Per Load	Maximum Rate at 100%, 75%, 50%, 25%, or 10%	0.88 lb/hr <sup>1</sup> (DEEP) for 2.0 MWe engines
			0.91 lb/hr <sup>1</sup> (DEEP) for 2.75 MWe engines
5.6.2	Average Emission Rate Across All Loads	Weighted Average of Rates at 100%, 75%, 50%, 25%, and 10%	5-load weighted average of 0.2 g/kW-hr

<sup>1</sup> Limit represents the higher value of either the Caterpillar “Not-to-Exceed” data or EPA Tier-2 (0.2 g/kw-hr). Total engine PM emissions shall comply with Tier 2 emissions limits in 40 CFR 89.

- 5.7 Particulate matter emissions (filterable plus condensable) from all 48 engines combined shall not exceed 5.5 tons/yr on a 36-month rolling basis.
- 5.8 DEEP emissions from all 48 engines combined shall not exceed 1.8 tons/yr on a 36-month rolling basis.
- 5.9 Total NO<sub>x</sub> emissions from all 48 engines combined shall not exceed 95 tons/yr, on a 36-month rolling basis.
- 5.10 Total NO<sub>2</sub> emissions from all 48 engines combined shall not exceed 9.5 tons/yr, on a 36-month rolling basis.
- 5.11 Volatile organic compound (VOC) emissions from all 48 engines combined shall not exceed 2.8 tons/yr, on a 36-month rolling basis.
- 5.12 CO emissions from all 48 engines combined shall not exceed 17.9 tons/yr, on a 36-month rolling basis.
- 5.13 Visual emissions from each diesel electric generator exhaust stack while operating at an electrical load greater than 20 percent or less than five percent shall be no more than five percent opacity, and visible emissions during operating loads between five to 20 percent shall be no more than 10 percent opacity, with the exception of a two

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

A site-specific O&M manual for Oath 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 include the manufacturers' recommended protocols for extended low-load operation. For example, for Caterpillar engines, the O&M manual shall include language to address "extended operation at reduced load (less than 30 percent)" which "may cause increased oil consumption and carbon buildup in the cylinders.... Extended operation at reduced load may also cause fuel to slobber through the exhaust system. This may result in a loss of power and /or poor performance." For Caterpillar engines, the O&M manual shall include the following specific language: "To maintain engine efficiency and performance, apply a full load to the engine on an hourly basis, or operate the engine at a load level that is greater than 30 percent. This will burn excess carbon from the cylinders. When possible, before shutting down the engine after running the engine for extended periods at low load, apply a full load for approximately 30 minutes. Running the engine at full load allows excess carbon to burn from the following components: cylinders, pistons and valves." 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 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.
- 6.2 Normal operating parameters and design specifications.
- 6.3 Operating maintenance schedule.

## 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

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 except as required for stack testing in Condition 8.2. 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 Fuel receipts with amount of diesel and sulfur content for each delivery to the facility.
- 8.2 Monthly and annual fuel usage.
- 8.3 Monthly and annual hours of operation for each diesel engine. The cumulative hours of operation for each engine shall be maintained for the life of the engine while at Oath, and shall include which engines have been stack tested, and the report information from Condition 9.5.
- 8.4 Purpose, electrical load and duration of runtime for each diesel engine period of operation.
- 8.5 Annual gross power generated by each independent building quadrant at the facility and total annual gross power for the facility.
- 8.6 Upset condition log for each engine and generator that includes date, time, duration of upset, cause, and corrective action.
- 8.7 Any recordkeeping required by 40 CFR Part 60 Subpart IIII.
- 8.8 Air quality complaints received from the public or other entity, the affected emissions units and any actions taken by Oath in response to those complaints.

## 9. REPORTING

- 9.1 Within 10 business days after entering into a binding agreement to purchase the engine/generator sets identified in Equipment Table 1.1, Oath shall notify Ecology in writing. The serial number, manufacturer make and model, standby capacity, and date of manufacture will be submitted prior to installation of each engine.
- 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 and three-year rolling total summary of fuel usage compared to Conditions 3.1, 3.1.1, 3.1.2, and 3.1.3.
  - 9.2.2 Monthly rolling annual and three year rolling total summary of all air contaminant emissions for pollutants above the WAC 173-400-110(5) and WAC 173-460-150 de minimis levels as listed in Table 1.3 of this permit.
  - 9.2.3 Monthly rolling hours of operation with annual and three-year rolling total.
  - 9.2.4 Monthly rolling gross power generation with annual total as specified in Approval Condition 8.4.
  - 9.2.5 A listing 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 of Oath's action 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 days of receipt of any such complaint.
- 9.4 Oath 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.

- 9.5** Stack test reports of any engine shall be submitted to Ecology within 45 days of completion of the test and shall include, at a minimum, the following information:
- 9.5.1** Location, unit ID, manufacturer and model number of the engine(s) tested, including the location of the sample ports.
  - 9.5.2** A summary of test methods, results (reported in units and averaging periods consistent with the applicable emission standard or limit), field and analytical laboratory data, quality assurance/quality control procedures and documentation.
  - 9.5.3** A summary of operating parameters for the diesel engines being tested.
  - 9.5.4** Copies of field data and example calculations.
  - 9.5.5** Chain of custody information.
  - 9.5.6** Calibration documentation
  - 9.5.7** Discussion of any abnormalities associated with the results.
  - 9.5.8** A statement signed by the senior management official of the testing firm certifying the validity of the source test report.

## **10. GENERAL CONDITIONS**

- 10.1 Commencing/Discontinuing Construction and/or Operations:** Authorization to construct under this Approval Order shall become void if construction of Genesis phase 1 (as described in Conditions 3.5 and 3.5.1) is not completed within 18 months following the issuance date of this Approval Order, or if Genesis phase 2 is not commenced within 18 months following completion of commissioning of the final engine in Genesis phase 1, or if Genesis phase 3 is not commenced within 18 months following completion of commissioning of the final engine in Genesis phase 2, or if Genesis phase 4 is not commenced within 18 months following completion of commissioning of the final engine in Genesis phase 3. No additional engines shall be installed, if construction of all four phases are discontinued for a period of 18 months, or if operation of backup emergency diesel electric generators is discontinued at the facility for a period of 18 months, unless prior written notification is received by Ecology at the address in Condition 7.
- 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 48 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 Quincy Community Assessment 2017:** On or before July 1, 2017, Oath shall submit to Ecology a protocol for a health risk assessment that analyzes the public health risk to Quincy residents from DEEP emissions in the Quincy area, including emissions from data center engines, highways, locomotives and other source categories. Oath shall submit the completed health risk assessment to Ecology within 90 days of Ecology's approval of the risk assessment protocol. Ecology may extend this deadline for good cause. The study shall model the locations in the community that experience the highest exposure to DEEP emissions, estimate the health risks associated with that exposure, and apportion the health risks among contributing source categories. In preparing the study Oath may collaborate with other owners of diesel engines in or near Quincy. Ecology shall review the assessment and take appropriate action based on the results.
- 10.7 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.
- 10.8 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 Ecology relative to this project and further documents and any authorizations or approvals or denials in relation thereto shall be kept at Ecology's Eastern Regional Office in the "Air Quality Controlled Sources" files, and by such action shall be incorporated herein and made a part thereof.

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

1. Violation of any terms or conditions of this authorization.
2. 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 provisions of their circumstances 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**

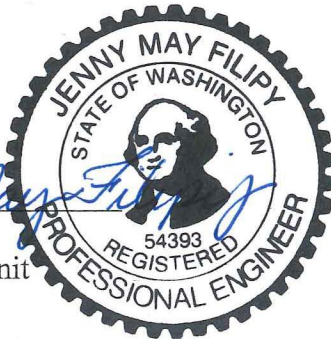
Street Addresses	Mailing Addresses
<b>Department of Ecology</b> Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	<b>Department of Ecology</b> Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
<b>Pollution Control Hearings Board</b> 1111 Israel RD SW, STE 301 Tumwater,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

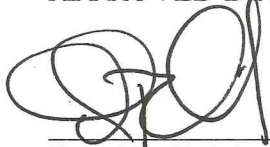
DATED at Spokane, Washington this 29<sup>th</sup> day of July 2019.

PREPARED BY:

  
\_\_\_\_\_  
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