

ORDER OF APPROVAL
NOTICE OF CONSTRUCTION 22NOC1572
ISSUED to City of Lacey on

November 3, 2023

This Order of Approval ("Order") is issued in accordance with Olympic Region Clean Air Agency ("ORCAA") Rule 6.1 and Washington Administrative Code 173-400-110.

Conditional approval to install and operate a stationary internal combustion engine ("Approved Equipment") located at 8824 Milbanke Dr SE in Olympia ("Approved Location"), for operation solely as described in the associated Notice of Construction ("NOC") application 22NOC1572 is hereby GRANTED to City of Lacey ("Applicant"), subject to the Conditions of Approval listed below.

This Order and the Conditions of Approval herein remain in effect for the life of the Approved Equipment as used at the Approved Location and shall be binding on Applicant, current owners and operators of the equipment, and Applicant's heirs, successors and assigns unless amended or superseded by a subsequent Order issued by ORCAA or unless the equipment is permanently shut down. The Applicant must notify any subsequent owner, operator, heirs, successor or assigns of this Order and the Conditions of Approval herein.

Conditions of Approval established in this Order shall be enforceable in addition to any applicable state, local and federal regulations or standards in existence now or in the future. Compliance with the conditions of this Order do not relieve the Applicant or any owner or operator from compliance with ORCAA Regulations, chapter 70A.15 of the Revised Code of Washington, or any other emissions control requirements, nor from any penalties for failure to comply with the same. Applicant may appeal this Order to the Pollution Control Hearings Board ("PCHB") by filing a written appeal with the PCHB and serving a copy upon ORCAA within thirty (30) days of receipt of this Order.

This Order is GRANTED, for the Approved Location, subject to the following Conditions of Approval:

- 1. Approved Equipment.** The internal combustion engine (ICE) described in the following table is approved for installation and operation as an emergency ICE at the City of Lacey's Madrona Wellfield facility, located at 8824 Milbanke Street SE in Olympia, subject to the conditions in this Order of Approval (Order). Deviations from this Order, or from equipment or operating specifications documented in Notice of Construction 22NOC1572 may constitute violation of this Order and ORCAA's regulations unless prior approval is granted.

Table 1: Approved Stationary Source – Emergency ICE

Equipment	Specifications	Use
Stationary Internal Combustion Engine (ICE)	<ul style="list-style-type: none">• Certified as a Tier II engine with no aftertreatment controls.• Maximum rated output: 755 BHP• Fuel: low-sulfur diesel (<15 ppm sulfur)• Serial No. to-be-determined	<ul style="list-style-type: none">▪ Emergency power generation

[Regulatory Basis: ORCAA 6.1(a); ORCAA 6.1.2(l); WAC 173-400-110(2); WAC 173-400-111(10); WAC 173-400-113]

2. Operating Requirements: The emergency ICE shall only be operated:

- a. During emergencies as defined in 40 CFR § 60.4219(1) and 40 CFR § 63.6675(1);
- b. For maintenance checks and readiness testing as allowed under 40 CFR § 60.4211(f)(2); or,
- c. For certain non-emergency situations as allowed under 40 CFR § 60.4211(f)(3).

[Authority: WAC 173-400-113(1); ORCAA 6.1.4(a)(1)]

[Origin: 40 CFR § 60.4211(f); 40 CFR § 63.6640(f)]

3. Operating Limits:

- a. The total calendar year operating hours for maintenance checks, readiness testing and non-emergency situations shall not exceed 50 hours.
- b. The owner or operator must minimize the emergency ICE's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the opacity standards in condition 7 shall apply.
- c. The emergency ICE must not operate more than 70 hours in any 12-month period.

[Authorities: WAC 173-400-113(1); ORCAA 6.1.4(a)(1,3,5)]

[Origins: 40 CFR § 60.4211(f); 40 CFR § 63.6625(h); 40 CFR § 63.6640(f); WAC 173-400-930; WAC 173-460-040(3)(b)]

4. Stack Requirements: The emergency ICE exhaust stack shall have a vertical discharge to the atmosphere of at least 12 feet. There shall be no flow obstructions at the point of discharge (i.e., cap). However, a weatherproof stack exhaust configuration that does not obstruct the exhaust flow is acceptable.

[Authority: WAC 173-400-113(2); ORCAA 6.1.4(a)(2)]

5. Fuel Specifications: The emergency ICE shall be powered only by diesel fuel, biodiesel fuel, or a mixture of both. In any case, the liquid fuel used to power the engines shall have a maximum sulfur content of 15 ppm by weight, a minimum cetane index of 40, and a maximum aromatic content of 35 percent by volume. A demonstration of compliance with this permit condition is only necessary if the fuel purchased is marine diesel or fuel imported from another country. It

is assumed that all non-marine domestically refined fuels will have met this requirement before leaving the refinery (pursuant to 40 CFR 80.510).

[Authority: WAC 173-400-113(1,2); ORCAA 6.1.4(a)(2)]

- 6. Monitoring Requirements:** The emergency ICE shall be equipped with an operable, non-resetting hour meter.

[Authority: WAC 173-400-113(1); ORCAA 6.1.4(a)(1)]

[Origin: 40 CFR § 60.4209(a)]

- 7. Opacity:** Visible emissions from the emergency ICE shall not exceed 5 percent opacity, 6-minute rolling average, as determined in accordance with EPA Title 40 CFR Part 60 Appendix A Method 9. This limit does not apply during periods of cold start-up. Unless defined by the engine manufacturer, cold start-up shall be defined as the period beginning when the engine is started and ending when the temperature of the engine coolant reaches 150 °F.

[Authority: WAC 173-400-113(2); ORCAA 6.1.4(a)(2)]

- 8. Operation and Maintenance Requirements:** The owner or operator shall operate, maintain and repair the emergency ICE consistent with manufacturer's emission-related recommendations.

[Authorities: WAC 173-400-101(4); WAC 173-400-113; ORCAA 6.1.4(a)(1,2)]

[Origins: 40 CFR § 60.4206; 40 CFR § 60.4211]

- 9. Recordkeeping:** Copies of records must be maintained for a period of at least five years after the date the record is generated. Copies of records must be kept on-site and in a printed or electronic form that is readily accessible for inspection for at least the first two years after the date the record is generated, and may be kept off-site after that two-year period, provided the records can be made available to ORCAA within 15-days from being requested. At a minimum, the following records shall be kept and updated monthly:

- a. Purchase invoices indicating the supplier, date, quantity, grade, and sulfur content of all fuel combusted in the emergency ICE;
- b. Date, time, and duration of periods when the emergency ICE was operated during periods of power outages;
- c. Date, time, and duration of periods when the emergency ICE was operated for maintenance checks and readiness testing;
- d. Date, time, and duration of periods the emergency ICE was operated for non-emergency purposes;
- e. The total number of hours that the emergency ICE operated during the previous 12-month period; and,
- f. The total number of hours that the emergency ICE operated for maintenance checks, readiness testing, and non-emergency situations during the previous 12-month period.

[Authority: WAC 173-400-102; WAC 173-400-113(1); ORCAA 8.11]

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NEW SOURCE

FINAL DETERMINATION to APPROVE:

Stationary Internal Combustion
Engine for Emergency Power
Generation

City of Lacey
8824 Milbanke Street SE
Olympia, WA 98513

22NOC1572
October 6, 2023

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NOTICE OF CONSTRUCTION FINAL DETERMINATION TO APPROVE

Olympic Region Clean Air Agency

Issued to:	City of Lacey	County:	67 (Thurston)
Location:	8824 Milbanke Dr SE Olympia, WA 98513	Source:	828
Application #:	22NOC1572	RC:	RC5
Prepared on:	October 6, 2023	File:	837

1. Summary

The City of Lacey requests approval to install an emergency generator at 8824 Milbanke Dr SE in Olympia. The emergency generator will be powered by a diesel-powered stationary internal combustion engine (ICE). Once the emergency generator is operational, the City of Lacey proposes to operate the ICE exclusively as an emergency ICE during unplanned power outages to supply power building power to:

- 1 well building, including well pump and pH analyzer
- Chlorine building, including hypochlorite generation system and transfer pump
- Treatment building, including 2 treatment trains and associated aeration blowers, booster pumps, water quality analyzers, and hypochlorite metering pumps.

In addition, the City of Lacey will run the emergency ICE for short durations on a scheduled basis for maintenance and testing purposes. Establishment of a stationary source, such as an emergency engine, requires ORCAA's approval through a NOC. The diesel-fired engine will result in combustion byproduct emissions such as nitrogen oxides (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), hazardous air pollutants (HAPs), and Toxic Air Pollutants (TAPs), which are regulated under Washington's Controls for New Sources of Toxic Air Pollutants, Chapter 173-460 WAC. Therefore, the emergency engine is regulated as a new stationary source of air emissions and NSR is required. ORCAA staff reviewed the NOC application and concluded it may be conditionally approved. Recommended conditions of approval are detailed in Section 16 of this Final Determination report.

2. Regulatory Background

Pursuant to the Washington Clean Air Act under chapter 70A.15 of the Revised Code of Washington, ORCAA's Rule 6.1 and Washington Administrative Code 173-400-110 (WAC 173-400-110) require New Source Review (NSR) for new stationary sources of air pollution (referred to as new sources) in ORCAA's jurisdiction. NSR is also required prior to installing, replacing or substantially altering any air pollution control technology. NSR generally refers to the process of evaluating air quality impacts and the likelihood of compliance with applicable air regulations and standards. NSR and approval of an air permit by ORCAA is required prior to commencing

construction or modification of any new source or prior to installing, replacing or substantially altering air pollution control technology. The goal of NSR is to assure compliance with applicable air regulations and standards, including equipment performance standards and ambient air quality standards.

NSR is initiated by a project proponent submitting an air permit application referred to as Notice of Construction (NOC) application¹, which provides ORCAA information on the proposed project of sufficient detail to characterize air impacts. NOC applications are posted on ORCAA's website and may undergo a public notice and comment period if requested by the public or if emissions increases trigger an automatic public notice. Approval of a NOC in an attainment or unclassifiable area² is contingent on verifying a proposed project meets the following criteria from WAC 173-400-113 and ORCAA's Rule 6.1:

1. **Performance Standards** - The new stationary source will likely comply with applicable air-performance standards such as federal new source performance standards (NSPS), national emission standards for hazardous air pollutants (NESHAPs), or any performance standards adopted under chapter 70A.15 RCW;
2. **BACT** - The new stationary source will employ "Best Available Control Technology" (BACT) to control all air pollutants emitted;
3. **RACT** - Replaced or substantially altered air pollution control technology meets the standard of "Reasonably Available Control Technology" (RACT) as defined in ORCAA Rule 1.4;
4. **Ambient Air Quality** - Emissions from the new stationary source will not cause or contribute to a violation of any ambient air quality standard;
5. **Federal Air Permitting Requirements** - The new stationary source secures all applicable federal air permits that may apply; and,
6. **Air Toxics** - If there are increases in toxic air pollutant (TAP) emissions, the requirements of Washington's Controls for New Sources of Toxic Air Pollutants under Chapter 173-460 WAC are met.

Installation of an emergency ICE having a rated capacity equal to or greater than 500 brake horsepower (BHP) triggers the requirement for a NOC. The emergency ICE proposed by the City of Lacey is a packaged engine generator with a maximum rated power output greater than 500 BHP. Therefore, the emergency engine is regulated as a new stationary source of air emissions and NSR is required.

¹ There are two categories of NOC applications: Notice of Construction (NOC) and Notice of Construction Revision (NOR). NOCs are required for new or modified sources, new control technology, replacing an existing stationary source or control technology, and substantially altering control technology. NORs are required when an owner or operator requests a revision to an existing air permit issued by ORCAA.

² Unclassified area or "attainment area" means an area that has not otherwise been designated by EPA as nonattainment with ambient air quality standards for a particular regulated pollutant. Attainment area means any geographic area in which levels of a given criteria air pollutant (e.g., ozone, carbon monoxide, PM10, PM2.5, and nitrogen dioxide) meet the health-based National Ambient Air Quality Standards (NAAQS) for that pollutant. An area may be an attainment area for one pollutant and a nonattainment area for others.

3. Facility Background

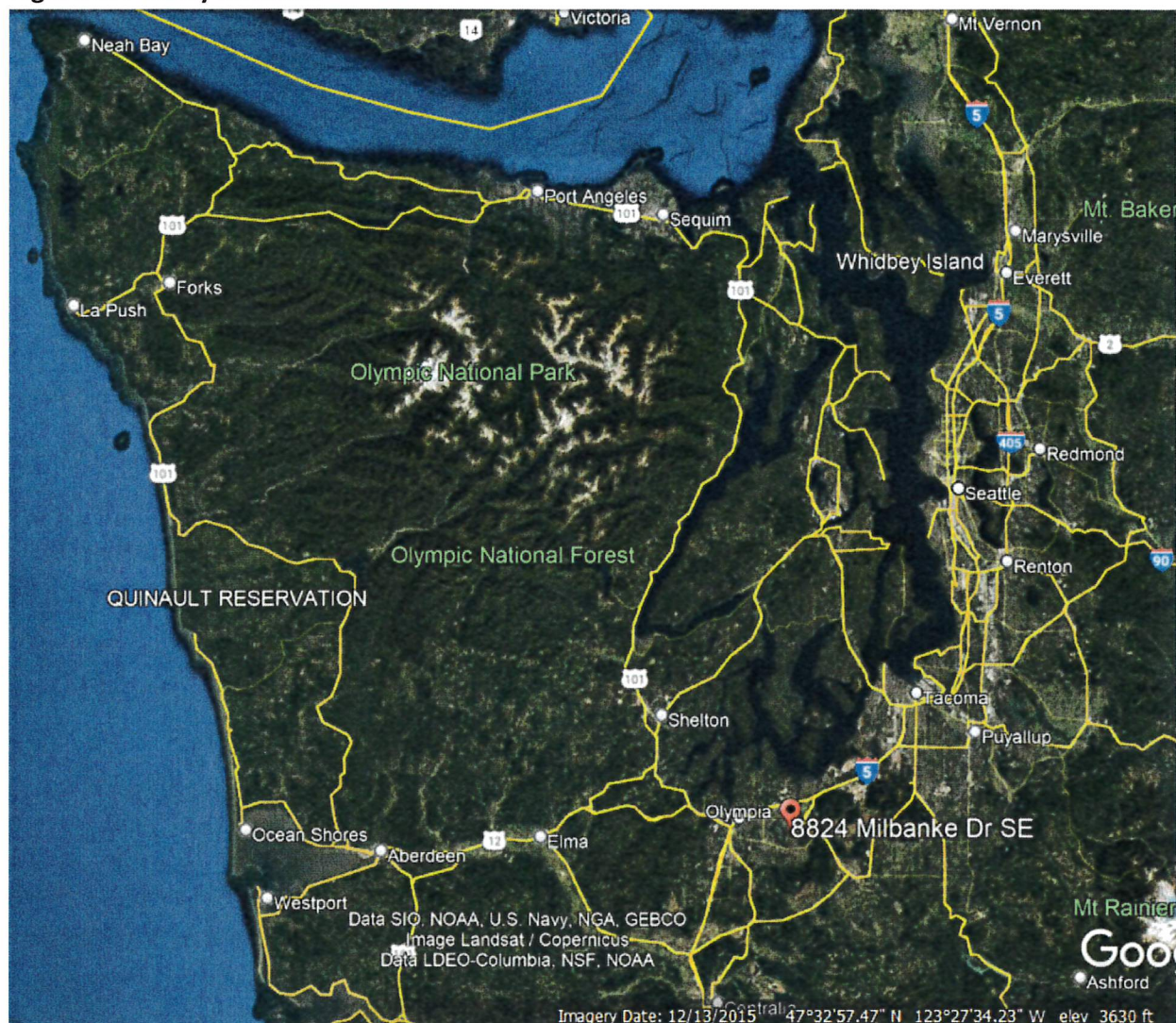
This is the first NOC for this location. Once issued, the City of Lacey-Milbanke generator will be registered as a minor source of air pollution with ORCAA.

4. Facility Description

The site is referred to as the Madrona wellfield and is located within a residential neighborhood. The site contains four existing utility buildings and provides treated well water to the City of Lacey drinking water system.

The site currently generates 0.8 percent solution of liquid sodium hypochlorite on-site via electrolysis and delivers this solution to piping in a vault. The existing chlorine building houses a hypochlorite generator, (2) 3,000-gallon hypochlorite storage tanks, metering pump equipment, and chemical analyzers. According to the applicant, *"there have been no volatile toxic compounds detected within water samples taken at the Madrona well field, and thus the potential for emission is zero"* (NOC Application Addendum #1, 9/15/2022). Based on this information, ORCAA staff's review of this proposal is focused on the emergency engine's potential emissions.

Figure 1: Facility Location



*Imagery ©2022 Google LLC, Google Earth Pro version 7.3.4.8248 (64-bit)

** Annotated by ORCAA

5. Project Description

The City of Lacey plans to construct a new aeration treatment building to provide pH adjustments for corrosion control, by raising the pH of raw water to between 7.6 and 7.8. The proposed 2,930 square foot treatment facility will be housed in an L-shaped building located on the eastern portion of the site, and source water from each of the three existing Madrona wells will be treated in the treatment building. According to the applicant, *“the new aeration treatment process will feature packaged aeration units that will provide diffused-bubble aeration to source water prior to entry into the City of Lacey’s municipal water system. The packaged aeration units function by bubbling ambient air through source water as the flow passes from one end of the unit to the other. Carbon dioxide is removed from the raw water and discharged to the atmosphere.*

The application also states that no raw products/chemicals will be used in the aeration treatment process, however 0.8% sodium hypochlorite solution will continue to be generated

on-site via electrolysis. Additionally, “there have been no volatile toxic compounds detected within water samples taken at the Madrona well field, and this the potential for emission is zero” (NOC Application Addendum #1, 9/15/2022).

In the event of a power outage, the proposed emergency ICE will supply building power to:

- 1 well building, including well pump and pH analyzer.
- Chlorine building, including hypochlorite generation system and transfer pump
- Treatment building, including 2 treatment trains and associated aeration blowers, booster pumps, water quality analyzer, and hypochlorite metering pumps.

The proposed emergency ICE is an EPA-certified, Tier II engine rated up to 755 horsepower with no aftertreatment control device. Certified emissions rates are achieved through fuel injection and electronic control means. Table 1 below provides additional engine specifications; specific engine information such as manufacturer, model, etc. are unknown at the time of the application. The emergency ICE will be located on the western side of the property line (see Figure 2 below).

Table 1: Emergency ICE Specifications

Equipment	Specifications
Emergency ICE	<ul style="list-style-type: none"> ▪ EPA-certified Tier II ▪ Rated up to 755 horsepower (nameplate BHP) ▪ Fuel: ultralow-sulfur diesel (<15 ppm) ▪ 4-stroke compression ignition ▪ Direct fuel injection ▪ Manf. and Serial No. to-be-determined

Figure 2: Site Map



*Imagery ©2022 Google LLC, Google Earth Pro version 7.3.4.8248 (64-bit)

** Annotated by ORCAA

6. Emission Increases

Air pollutant emissions from combustion of diesel in a stationary ICE include pollutants with Ambient Air Quality Standards which are referred to as “Criteria Air Pollutants,” and toxic air pollutants (TAP) regulated under Washington’s CONTROLS FOR NEW SOURCES OF TOXIC AIR POLLUTANTS under Chapter 173-460 WAC. A subset of certain TAP emitted are also regulated federally as hazardous air pollutants (HAP) under the federal Clean Air Act. In addition, combustion of diesel generates greenhouse gases (GHG) such as methane (CH₄) and carbon dioxide (CO₂). Criteria Air Pollutants emitted will include nitrogen oxides (NO_x), volatile organic compounds (VOC), particulate matter (PM), sulfur dioxide (SO₂), and carbon monoxide (CO).

ORCAA received revised potential to emit calculations, using equipment-specific information, to supplement the NOC application on August 25, 2023. Maximum possible emissions were evaluated by examining emissions at ¼ standby, ½ standby, ¾ standby and full standby. Emissions below represent the maximum possible emissions, assuming 24 hours per day of operation, up to a maximum of 70 hours in a year. Additional details can be found in the NOC record, NOC Application Addendum #3.

Table 2. Emission Increases (Project Emissions) from the Emergency Engine
[Excerpt from Application Addendum]

City of Lacey

Emergency Engine Emissions Calculation - Worst Case Scenario

Maximum possible emissions between the four standby running loads: 1/4 Standby, 1/2 Standby, 3/4 Standby, Full Standby

Parameters		Notes
Engine Load	Varies	
Engine Horsepower	Varies HP	a
Diesel Higher Heating Value (HHV)	137,000 Btu/gal	b
Maximum Hourly Usage	Varies gal/hr	a
Maximum Daily Usage	24 hr/day	c
Maximum Annual Usage	70 hr/yr	c

Pollutant	ID/CAS No.	Emission Factor Source	Notes	Hourly Emissions (lb/hr)	Daily Emissions (lb/day)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)
Criteria Pollutants							
CO	630-08-0	Full Standby	a	0.63	15.11	44.06	2.20E-02
NO _x	NOX	Full Standby	a	7.15	171.58	500.43	2.50E-01
PM	PM	3/4 Standby	a	0.06	1.47	4.28	2.14E-03
PM ₁₀	PM10	3/4 Standby	d	0.06	1.47	4.28	2.14E-03
PM _{2.5}	PM2.5	3/4 Standby	d	0.06	1.47	4.28	2.14E-03
HC	HC	Full Standby	a	0.23	5.42	15.82	7.91E-03
SO _x	SOX	Full Standby	e	0.01	0.21	0.62	3.11E-04
Lead	7439-92-1	negligible	f	0	0	0	0
Toxic Air Pollutants/Hazardous Air Pollutants							
Carbon Monoxide (CO)	630-08-0	Full Standby	a	6.29E-01	1.51E+01	4.41E+01	2.20E-02
Nitrogen dioxide (NO ₂)	10102-44-0	Full Standby	s	6.29E-02	1.51E+00	4.41E+00	2.20E-03
Sulfur dioxide (SO ₂)	7446-09-5	Full Standby	e	8.88E-03	2.13E-01	6.22E-01	3.11E-04
1,3-Butadiene	106-99-0	Full Standby	e	1.86E-04	4.46E-03	1.30E-02	6.51E-06
Acetaldehyde	75-07-0	Full Standby	e	1.20E-04	2.88E-03	8.39E-03	4.19E-06
Acrolein	107-02-8	Full Standby	e	3.75E-05	8.99E-04	2.62E-03	1.31E-06
Benzene	71-43-2	Full Standby	e	3.69E-03	8.85E-02	2.58E-01	1.29E-04
Formaldehyde	50-00-0	Full Standby	e	3.75E-04	9.00E-03	2.63E-02	1.31E-05
Propylene	115-07-1	Full Standby	e	1.33E-02	3.18E-01	9.28E-01	4.64E-04
Toluene	108-88-3	Full Standby	e	1.34E-03	3.21E-02	9.35E-02	4.68E-05
Xylenes	1330-20-7	Full Standby	e	9.18E-04	2.20E-02	6.42E-02	3.21E-05
Total Polycyclic aromatic hydrocarbons (PAH) including:	PAH	Full Standby	e	1.01E-03	2.42E-02	7.05E-02	3.53E-05
Naphthalene	91-20-3	Full Standby	e	6.18E-04	1.48E-02	4.33E-02	2.16E-05
Acenaphthylene	208-96-8	Full Standby	e	4.39E-05	1.05E-03	3.07E-03	1.54E-06

Acenaphthene	83-32-9	Full Standby	^e	2.22E-05	5.34E-04	1.56E-03	7.79E-07
Fluorene	86-73-7	Full Standby	^e	6.08E-05	1.46E-03	4.26E-03	2.13E-06
Phenanthrene	85-01-8	Full Standby	^e	1.94E-04	4.66E-03	1.36E-02	6.79E-06
Anthracene	120-12-7	Full Standby	^e	5.85E-06	1.40E-04	4.09E-04	2.05E-07
Fluoranthene	206-44-0	Full Standby	^e	1.92E-05	4.60E-04	1.34E-03	6.71E-07
Pyrene	129-00-0	Full Standby	^e	1.76E-05	4.23E-04	1.23E-03	6.17E-07
Benz(a)anthracene	56-55-3	Full Standby	^e	2.96E-06	7.10E-05	2.07E-04	1.03E-07
Chrysene	218-01-9	Full Standby	^e	7.27E-06	1.75E-04	5.09E-04	2.55E-07
Benzo(b)fluoranthene	205-99-2	Full Standby	^e	5.28E-06	1.27E-04	3.69E-04	1.85E-07
Benzo(k)fluoranthene	207-08-9	Full Standby	^e	1.04E-06	2.49E-05	7.25E-05	3.63E-08
Benzo(a)pyrene	50-32-8	Full Standby	^e	1.22E-06	2.93E-05	8.55E-05	4.28E-08
Indeno(1,2,3-cd)pyrene	193-39-5	Full Standby	^e	1.97E-06	4.72E-05	1.38E-04	6.89E-08
Dibenz(a,h)anthracene	53-70-3	Full Standby	^e	1.64E-06	3.95E-05	1.15E-04	5.76E-08
Benzo(g,h,i)perylene	191-24-2	Full Standby	^e	2.64E-06	6.34E-05	1.85E-04	9.25E-08
Diesel engine exhaust particles	DEEP	3/4 Standby	^d	6.12E-02	1.47E+00	4.28E+00	2.14E-03
Hazardous Air Pollutants, total	HAP	Full Standby		8.29E-03	1.99E-01	5.80E-01	2.90E-04

Notes:

- a. Emission factors based on data from engine exhaust emission data sheet provided by the manufacturer.
- b. Emissions calculated based on assumed HHV of typical diesel fuel.
- c. Assumes continuous daily operations. Engine is used only for emergency purposes (approx. 3 hr/yr) and maintenance (approx. 0.5 hrs/month).
- d. Conservatively assumes that emission factors for PM₁₀ and PM_{2.5} both equal the emission factor for PM. DEEP emission factor also equals PM_{2.5} emission factor.
- e. Emission factors from EPA AP-42, from Section 3.4 Large (> 600hp) Stationary Diesel and All Stationary Dual-Fuel Engines, Tables 3.4-3 and 3.4-4. Assume 0.0015% sulfur by weight for ultra-low sulfur diesel (ULSD) fuel.
- f. Noted as "negligible" in the emission calculations for this engine provided by ORCAA.
- g. Primary NO₂ is assumed to be 10% of the NO_x.

7. Administrative Requirements for NOC Applications

NOC applications are subject to filing fees according to ORCAA Rule 3.3(b) and may incur additional NOC processing fees at an hourly rate according to ORCAA Rule 3.3(c). Applicable NOC filing fees for City of Lacey's NOC application were paid prior to ORCAA commencing processing of the application. Additional NOC processing fees may apply and will be determined and assessed prior to issuing a Final Determination and the Approval Order (a.k.a.: Air Permit).

NOC applications are subject to a 15-day public notice and an opportunity to request a 30-day public comment period and opportunity for a public hearing. Public notice of City of Lacey's NOC application was posted on ORCAA's website on August 8th, 2022. The time period for filing comments on the application and requests for a public comment period expired on August 23rd, 2022. No comments on the NOC application or requests for a public comment period or hearing were received during the NOC application noticing period. Based on this result, neither a public comment period nor public hearing were initiated.

8. SEPA Review

The State Environmental Policy Act (SEPA) under Chapter 197-11 WAC is intended to provide information to agencies, applicants, and the public to encourage the development of environmentally sound proposals. SEPA helps agency decision-makers, applicants, and the public understand how the entire proposal will affect the environment. SEPA can be used to modify or deny a proposal to avoid, reduce, or compensate for probable environmental impacts.

The City of Lacey Community Development Department served as Lead Agency and issued a Determination of Non-Significant under WAC 197-11-340(2) on September 1st, 2021.

9. Criteria for Approval

ORCAA's Rule 6.1 and WAC 173-400-113 establish the following general criteria for approving new stationary sources and modifications to existing stationary sources of air pollution in ORCAA's region:

1. **Performance Standards** - Any new stationary source or modification will likely comply with applicable air-performance standards such as the federal new source performance standards (NSPS), national emission standards for hazardous air pollutants (NESHAPs), and any performance standards adopted under chapter 70.94 RCW (which is now chapter 70A.15 RCW);
2. **BACT** - The new or modified stationary source is controlled to a level that meets the standard of "Best Available Control Technology" (BACT);
3. **Ambient Air Quality** – Any increase in air emissions will not cause or contribute to violation of any ambient air quality standard;
4. **Federal Air Permitting Requirements** – All applicable federal air permits, if required, are secured;
5. **Washington Air Toxics Regulations** - If there are increases in toxic air pollutant (TAP) emissions, the requirements of Washington's Controls for New Sources of Toxic Air Pollutants under Chapter 173-460 WAC are met; and,
6. **Public Outreach** – Public notice and comment requirements in WAC 173-400-171 and ORCAA's regulations are met.

ORCAA staff determined City of Lacey's proposal to install an emergency ICE at 8824 Milbanke Street SE in Olympia meets these criteria and may be conditionally approved. The following sections provide more detail on each criterion.

10. Applicable Performance Standards (Summary)

ORCAA's Rule 6.1.4(a)(1) requires a finding that any new or modified stationary source will likely comply with applicable state, federal and local performance standards for air emissions including emission standards adopted under chapter 70A.15 of the Revised Code of Washington (RCW), emissions standards of ORCAA, and federal emission standards including New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), and National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT standards). The performance standards in Table 3 were determined applicable. The performance standards in Table 4 were determined to be relevant but inapplicable performance standards.

Table 3: Applicable Performance Standards specific to the proposed emergency ICE

Title Citation	Brief Description (Consult rule/regulation for specific requirements)	discussion/determination
<i>ORCAA Requirements, Prohibitions, and Performance Standards. ORCAA Regulations 4, 7, and 8</i>	These general regulations may apply to any source or emission unit causing air pollution.	Generally, to all air pollution sources

Title Citation	Brief Description (Consult rule/regulation for specific requirements)	discussion/determination
<i>Annual Registration.</i> WAC 173-400-101 ORCAA 4.1	Requires facilities that are minor sources of emissions to register annually with ORCAA and pay annual registration fees.	To emergency ICE
<i>Annual Registration Fees.</i> WAC 173-400-104 ORCAA 3.1	Requires payment of annual registration fees to ORCAA based in part on air pollutants emitted during the previous year.	To emergency ICE
<i>Concealment and Masking.</i> WAC 173-400-040(8) & ORCAA 7.5	Prohibits the installation or use of any means that conceals or masks an emission of an air contaminant that would otherwise violate any provisions of this chapter.	Generally, to all air pollution sources
<i>Particulate Standards for Combustion and Incineration units.</i> WAC 173-400-050 ORCAA Rule 8.3(a)	Prohibits emissions from any combustion unit in excess of 0.1 grain/dscf. EPA test methods from 40 CFR Appendix A must be used if demonstration of compliance is required.	To emergency ICE
<i>General Standards for Maximum Visual Emissions.</i> WAC 173-400-040(2) ORCAA Rule 8.2(a)	Prohibits emissions with opacity of greater than 20% for more than three (3) minutes in any one hour.	To emergency ICE
<i>Control Equipment Maintenance and Repair.</i> ORCAA Rule 8.8	ORCAA Rule 8.8 requires that all air contaminant sources keep any process and/or air pollution control equipment in good operating condition and repair.	To emergency ICE
<i>Emission Inventory.</i> WAC 173-400-105(1) & ORCAA 4.3	Requires maintenance of records relating to air pollutant emissions and submittal of an annual emissions inventory if required.	To emergency ICE
<i>Emissions Detrimental to Persons or Property.</i> WAC 173-400-040(6) & ORCAA 7.6	Prohibits emissions of any air contaminant from any source that are detrimental to persons or property.	Generally, to all air pollution sources
<i>Excess Emissions.</i> WAC 173-400-107; ORCAA 8.7	Requires source operators to demonstrate that excess emissions were unavoidable in order to obtain relief in an enforcement action.	To emergency ICE
<i>Fallout Prohibition.</i> WAC 173-400-040(3) & ORCAA 8.3(e)	Prohibits particulate emissions from any source to be deposited, beyond the property under direct control of the owner or operator of the source, in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material was deposited.	Generally, to all air pollution sources
<i>Odor Prohibitions and Control.</i> ORCAA 8.5	ORCAA Rule 8.5 contains general requirements for controlling odors and a general prohibition of odors that unreasonably interfere with the use or enjoyment of a person's property.	Generally, to all air pollution sources
<i>Record Keeping and Reporting.</i> ORCAA 8.11	Requires the following: 1. Maintenance of records on the nature and amounts of emissions and other related information as deemed necessary by ORCAA; 2. Reporting of emissions to ORCAA upon request.	To emergency ICE
<i>NSPS: Stationary Compression Ignition and Spark Ignition ICE.</i>	40 CFR 60, Subpart IIII establishes ICE emissions certification standards and maintenance requirements for stationary compression ICE,	To emergency ICE

Title Citation	Brief Description (Consult rule/regulation for specific requirements)	discussion/determination
<i>Title 40 CFR Part 60, Subpart IIII</i>	including emergency ICE, that commenced construction or modified/reconstructed after 07/11/2005.	
<i>NESHAP: Reciprocating ICE. Title 40 CFR Part 63, Subpart ZZZZ</i>	40 CFR Part 63, Subpart ZZZZ establishes additional operation and maintenance requirements for stationary reciprocating ICE including emergency ICE.	To emergency ICE
<i>Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines. Title 40 CFR Part 89</i>	40 CFR Part 89 standards and requirements for compression-ignition nonroad engines are incorporated by reference in 40 CFR § 60.4202 of 40 CFR Part 60, Subpart IIII. 40 CFR § 60.4202(a)(2) adopts the standards in 40 CFR § 89.112 and 40 CFR § 89.113 for all emergency ICE greater than 50 HP beginning in the model year 2007.	To emergency ICE

Table 4: Relevant Performance Standards Determined Inapplicable

Regulation Title Citation	Relevant Performance Standard Determined Inapplicable	Basis
<i>Control of Emissions from New and In-Use Nonroad Compression Ignition Engines. Title 40 CFR Part 1039</i>	Sets emission standards for new compression-ignition nonroad engines installed after 2014. Requirements of the part are generally addressed to the manufacturer.	ICE is a stationary engine and, therefore, not a nonroad engine.
<i>Process Unit Emission Standards. WAC 173-400-060; ORCAA 8.3(a)</i>	No person shall cause or allow the emission of particulate material from any general process operation in excess of 0.23 grams per dry cubic meter at standard conditions (0.1 grain/dscf) of exhaust gas.	ICE is a combustion source of emissions and, therefore, not a process unit.

11. Best Available Control Technology (BACT)

ORCAA Rule 6.1.4(a)(2) requires the finding that a new source or modification to an existing source of air pollution in an attainment or unclassifiable area will employ best available control technology (BACT) for all pollutants not previously emitted or whose emissions would increase as a result of the new source or modification. ORCAA Rule 6.1.4(a)(2) applies to the proposed emergency ICE.

11.1 Overview of BACT

New sources of air pollution and modifications to existing sources of air pollution are required to use BACT to control all pollutants not previously emitted, or those for which emissions would increase as a result of the new source or modification. BACT is defined in WAC 173-400-030 as, “an emission limitation based on the maximum degree of reduction for each air pollutant subject to regulation under chapter 70A.15 RCW emitted from or which results from any new or modified stationary source, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes and available

methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each pollutant.”

11.2 Overview of t-BACT

New or modified air pollution sources that emit TAP above certain thresholds are required to control those emissions using BACT for Toxic Air Pollutant emissions (referred to as t-BACT). Specifically, t-BACT is triggered for any TAP emitted above its corresponding de-minimis rate. De-minimis emission rates are established in Washington’s regulations titled, Controls for New Sources of Toxic Air Pollutants, under Chapter 173-460 WAC.

11.3 BACT and t-BACT Evaluation

40 CFR Part 60, Subpart IIII (Subpart IIII) applies to the proposed emergency ICE. Subpart IIII adopts by reference and requires the emissions standards and requirements from 40 CFR Part 89 (Part 89) for all emergency ICE greater than 50 HP beginning in the model year 2007. The proposed emergency ICE will be a model year 2022 CAT C18 ATAAC engine with Tier II certification according to 40 CFR Part 89 standards, which complies with the Part 89 standards. Certification information for the proposed engine from EPA indicates the engine achieves Tier II certification standards through engine design and electronic control only: Tier II certification was achieved for this engine without add-on air pollution control technology.

ORCAA staff determined the air pollution controls inherent in the proposed CAT C18 ATAAC engine meets the BACT and t-BACT requirements for this case. This determination is contingent on the engine being operated as an emergency ICE as described in this Final Determination and in compliance with the recommended conditions of approval described in Section 15 of this Final Determination.

12. Ambient Impact Analysis (Criteria Pollutants)

ORCAA’s Rule 6.1.4(a)(3) and Washington rule WAC 173-400-113 both include the criterion that emissions from any new stationary source or modification does not delay the attainment date of an area not in attainment, nor cause or contribute to an existing violation of any Ambient Air Quality Standard (AAQS).

According to Washington rule WAC 173-400-930(1)(e), emergency engines less than 2000 BHP in compliance with the substantive requirements of WAC 173-400-930 satisfy applicable new source review requirements including the requirement to evaluate impacts to the ambient air. The substantive requirements from Chapter WAC 173-400-930 include:

1. The engine must meet EPA emission standards applicable to all new nonroad compression-ignition engines in 40 CFR § 89.112 Table 1 and 40 CFR § 1039.102 Tables 6 and 7 (in effect on the date in WAC 173-400-025), as applicable for the year that the emergency engine is put in operation;
2. Must be fueled by ultra-low sulfur diesel or ultra-low sulfur biodiesel, with a sulfur content of 15 ppm (0.0015% sulfur by weight) or less; and,
3. Will operate no more than fifty hours per year for maintenance and testing or other nonemergency use.

The proposed emergency engine has a BHP rating less than 2000 BHP, and Approval Order conditions will limit operation of the engine for maintenance and testing to no more than 50 hours per year and require ultra-low sulfur diesel. Therefore, based on WAC 173-400-930 provisions, the proposed emergency engine meets the criterion requiring a finding that emissions from any new stationary source or modification not delay the attainment date of an area not in attainment, nor cause or contribute to an existing violation of any AAQS.

13. Ambient Impact Analysis (Toxic Air Pollutants)

Washington's regulations titled Controls for New Sources of Toxic Air Pollutants (Air Toxics Rule) under Chapter 173-460 of the Washington Administrative Code apply to new stationary sources of Toxic Air Pollutants (TAP). The purpose of this Rule is to, "... maintain such levels of air quality as will protect human health and safety." The TAP covered under the Rule include carcinogens and non-carcinogens. The Rule allows for a multi-tiered approach to assess potential health and safety impacts from TAP increases.

The "First Tier Review" (Tier 1 Review) is a two-step process. First, the emissions increase of each TAP is compared to its unique Small Quantity Emission Rate (SQER). SQERs are listed for each TAP under WAC 173-460-150. An SQER is the level of emissions of a TAP below which dispersion modeling is not required to demonstrate compliance with the ambient impact requirement. TAP emissions increases used in this first step must be based on the maximum potential to emit considering control or reduction in emissions achievable using the air pollution control technology or methods proposed to meet the tBACT requirement. Any TAP with an increase below its SQER can be presumed to be in compliance with the ambient impact requirement. If this is the outcome, further analysis is not required for that TAP. However, TAPs with emissions increases above their SQER must undergo the second step of the Tier 1 Review.

The second step of the Tier 1 Review requires evaluating TAP impacts against Acceptable Source Impact Levels (ASIL) and is referred to as an ASIL Analysis. An ASIL is the adopted health-based concentration for a TAP below which can be presumed as meeting the ambient impact requirement of WAC 173-460-070. ASILs are provided for each TAP under WAC 173-460-150. An ASIL analysis typically involves using an ambient air dispersion model to estimate ambient concentrations resulting from TAP emissions increases and considering air dispersion and local meteorological characteristics of the source. If the modeled impact of the increase in emissions of a TAP does not exceed its corresponding ASIL, the ambient impact requirement of WAC 173-460-070 may be considered met and the First Tier Review is completed for that TAP.

Emissions rates used to support an ASIL Analysis must be based on the maximum potential to emit considering control or reduction in emissions achievable using the air pollution control technology or methods proposed to meet the tBACT requirement. In addition, the Air Toxics Rule allows TAP reductions from existing emission units not subject to review to be subtracted or "netted out" from TAP increases, provided the reductions are included in the approval order as enforceable voluntary emission limits and meet all the requirements of WAC 173-460-071. These requirements include:

- (1) The voluntary emissions reductions must be enforceable through a regulatory order issued by the air permitting agency.

- (2) The approval order enforcing the voluntary emissions reductions must include monitoring, recordkeeping, and reporting requirements sufficient to ensure the reductions are maintained.
- (3) The agency's preliminary determination to approve the voluntary emissions reductions are subject to a 30-day public notice and comment period and opportunity for a public hearing.

For pollutants with ambient concentrations found to be greater than their ASIL, a "Second Tier Review" (Tier 2 Review) by the Washington Department of Ecology (Ecology) is required. An application for a Tier 2 Review by Ecology is referred to a Tier 2 petition. Tier 2 petitions must include a Health Impacts Assessment (HRA) and estimated ambient TAP impacts based on refined air dispersion modeling. Ecology will not act on a Tier 2 petition unless a written preliminary determination on the NOC application for the new or modified TAP source and a draft approval order have been completed by the local agency with jurisdiction. Ecology's review and approval of a Tier 2 petition is contingent on a finding that TAP impacts meet the ambient impact requirement of WAC 173-460-070 that increases in TAP emissions are sufficiently low to protect human health and safety from potential carcinogenic and/or other toxic effects. If Ecology recommends denial of a Tier 2 petition, the permitting authority may not approve the project. The applicant then has the option of submitting a petition for a "Third Tier Review" (Tier 3 Review) by Ecology and a request for a risk management decision.

DEEP is the only TAP above its SQER. ORCAA conducted preliminary dispersion modeling analyses in April 2023 in support of the NOC application, prior to receiving updated equipment-specific emissions information from the applicant (Addendum #3, received 8/25/23). On August 25th, 2023, ORCAA received the requested information to support the potential to emit calculations (see Table 2), and subsequent TAP analysis for DEEP. The following is an excerpt from that application addendum:

Scaled results for DEEP comparing the initial modeling results from ORCAA to the results based on our emission estimates are summarized in the table below. The worst-case load for emissions of DEEP is 75%. We scaled the annual dispersion factor modeled by ORCAA in the "Tier I AERMOD" run (51.2 µg/m3/[g/s]) by multiplying it by the annual emission rate of DEEP, converted to grams per second. The resulting concentration is less than the ASIL. We used 70 hours per year to estimate annual DEEP emission from the emergency generator. This is an overestimate of the hours that the generator will operate. The generator will be tested for 30 minutes per month for maintenance purposes (6 hours per year total) and emergency operation of the generator is expected to be 3 hours per year.

	3/4 Standby	ORCAA
DEEP Emissions		
Annual Usage (hrs)	70	100 ^a
Engine Horsepower (hp)	555 ^b	755
Load Factor (%)	75	75
DEEP Emission Factor (g/hp-hr) ^c	0.05 ^b	0.10 ^d

Annual Emissions (lb/yr)	4.28	12.10
SQER (lb/yr)	0.54	0.54
Modeling Required?	Yes	Yes
Scaled Tier I AERMOD Annual Modeling Results		
Modeled Annual Results ($\mu\text{g}/\text{m}^3$) ^e	3.15E-03	8.91E-03
ASIL ($\mu\text{g}/\text{m}^3$)	3.30E-03	3.30E-03
Greater than ASIL?	No	Yes

Notes:

- a. Maximum annual usage hours as per 40 CFR Part 60 Subpart IIII.
- b. Data from engine exhaust emission data sheet provided by the manufacturer.
- c. Assumes that the DEEP emission factor equals the PM emission factor.
- d. Data from CMI (CEX) for 2020 engine (Family Name: LCEXL015.AAJ; Certificate #: LCEXL015.AAJ-052 Issued 28-Oct-2019), uncontrolled.
- e. Based on scaled AERMOD run results conducted by ORCAA using a 1 g/s emission rate and the stack parameters noted in the table.

Additionally, it's worth noting that the exhaust flowrate and exit temperature are slightly different than what was used in ORCAA's April 2023 preliminary modeling. However, the applicant provided the following statement:

Both values are within 10% of the modeled parameters, so we believe the modeling results will not change substantially.

ORCAA agrees with this conclusion, and the TAP Ambient Impact Review is considered met.

14. Requirements for Major Stationary Sources and Major Modifications to Major Stationary Sources

Projects that are major stationary sources and major modifications to major stationary sources as defined in 40 C.F.R. 52.21(b) may be subject to permitting requirements under WAC 173-400-700 through 173-400-860.

The City of Lacey Madrona Wellfield is not a "Major Stationary Source" as defined in 40 C.F.R. 52.21(b) and not subject to the permitting program required by WAC 173-400-700 through WAC 173-400-860. Therefore, these permitting requirements do not apply.

15. Title V Air Operating Permit (AOP) Implications

The State of Washington program pursuant to Title V of the federal Clean Air Act is governed under Chapter 173-401 WAC, the Washington Air Operating Permit Program. Chapter 173-401 WAC requires existing major stationary sources to operate in compliance with an approved Air Operating Permit (AOP). Major stationary sources are those stationary sources with a potential to emit which is greater than 100 tons per year of any criteria pollutant, greater than 10 tons per year of any hazardous air pollutants (HAP), or greater than 25 tons per year of any combination of HAP.

The City of Lacey Madrona Wellfield is not a "Major Source" under the Title V program and is not subject to the requirement to operate under an AOP.

16. Conditions of Approval

The following conditions of approval were determined necessary for assuring compliance with applicable air regulations and standards and protecting air quality. Recommended conditions of approval will become effective with once the Approval Order is issued:

1. **Approved Equipment.** The internal combustion engine (ICE) described in the following table is approved for installation and operation as an emergency ICE at the City of Lacey's Madrona Wellfield facility, located at 8824 Milbanke Street SE in Olympia, subject to the conditions in this Order of Approval (Order). Deviations from this Order, or from equipment or operating specifications documented in Notice of Construction 22NOC1572 may constitute violation of this Order and ORCAA's regulations unless prior approval is granted.

Table 1: Approved Stationary Source – Emergency ICE

Equipment	Specifications	Use
Stationary Internal Combustion Engine (ICE)	<ul style="list-style-type: none">• Certified as a Tier II engine with no aftertreatment controls.• Maximum rated output: 755 BHP• Fuel: low-sulfur diesel (<15 ppm sulfur)• Serial No. to-be-determined	<ul style="list-style-type: none">▪ Emergency power generation

[Regulatory Basis: ORCAA 6.1(a); ORCAA 6.1.2(l); WAC 173-400-110(2); WAC 173-400-111(10); WAC 173-400-113]

2. **Operating Requirements:** The emergency ICE shall only be operated:
 - a. During emergencies as defined in 40 CFR § 60.4219(1) and 40 CFR § 63.6675(1);
 - b. For maintenance checks and readiness testing as allowed under 40 CFR § 60.4211(f)(2);or,
 - c. For certain non-emergency situations as allowed under 40 CFR § 60.4211(f)(3).

[Authority: WAC 173-400-113(1); ORCAA 6.1.4(a)(1)]
[Origin: 40 CFR § 60.4211(f); 40 CFR § 63.6640(f)]

3. **Operating Limits:**
 - a. The total calendar year operating hours for maintenance checks, readiness testing and non-emergency situations shall not exceed 50 hours.
 - b. The owner or operator must minimize the emergency ICE's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the opacity standards in condition 7 shall apply.
 - c. The emergency ICE must not operate more than 70 hours in any 12-month period.

[Authorities: WAC 173-400-113(1); ORCAA 6.1.4(a)(1,3,5)]
[Origins: 40 CFR § 60.4211(f); 40 CFR § 63.6625(h); 40 CFR § 63.6640(f); WAC 173-400-930; WAC 173-460-040(3)(b)]

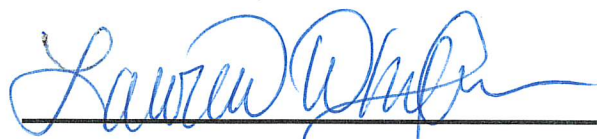
4. **Stack Requirements:** The emergency ICE exhaust stack shall have a vertical discharge to the atmosphere of at least 12 feet. There shall be no flow obstructions at the point of discharge (i.e., cap). However, a weatherproof stack exhaust configuration that does not obstruct the exhaust flow is acceptable.
[Authority: WAC 173-400-113(2); ORCAA 6.1.4(a)(2)]
5. **Fuel Specifications:** The emergency ICE shall be powered only by diesel fuel, biodiesel fuel, or a mixture of both. In any case, the liquid fuel used to power the engines shall have a maximum sulfur content of 15 ppm by weight, a minimum cetane index of 40, and a maximum aromatic content of 35 percent by volume. A demonstration of compliance with this permit condition is only necessary if the fuel purchased is marine diesel or fuel imported from another country. It is assumed that all non-marine domestically refined fuels will have met this requirement before leaving the refinery (pursuant to 40 CFR 80.510).
[Authority: WAC 173-400-113(1,2); ORCAA 6.1.4(a)(2)]
6. **Monitoring Requirements:** The emergency ICE shall be equipped with an operable, non-resetting hour meter.
[Authority: WAC 173-400-113(1); ORCAA 6.1.4(a)(1)]
[Origin: 40 CFR § 60.4209(a)]
7. **Opacity:** Visible emissions from the emergency ICE shall not exceed 5 percent opacity, 6-minute rolling average, as determined in accordance with EPA Title 40 CFR Part 60 Appendix A Method 9. This limit does not apply during periods of cold start-up. Unless defined by the engine manufacturer, cold start-up shall be defined as the period beginning when the engine is started and ending when the temperature of the engine coolant reaches 150 °F.
[Authority: WAC 173-400-113(2); ORCAA 6.1.4(a)(2)]
8. **Operation and Maintenance Requirements:** The owner or operator shall operate, maintain and repair the emergency ICE consistent with manufacturer's emission-related recommendations.
[Authorities: WAC 173-400-101(4); WAC 173-400-113; ORCAA 6.1.4(a)(1,2)]
[Origins: 40 CFR § 60.4206; 40 CFR § 60.4211]
9. **Recordkeeping:** Copies of records must be maintained for a period of at least five years after the date the record is generated. Copies of records must be kept on-site and in a printed or electronic form that is readily accessible for inspection for at least the first two years after the date the record is generated, and may be kept off-site after that two-year period, provided the records can be made available to ORCAA within 15-days from being requested. At a minimum, the following records shall be kept and updated monthly:
- Purchase invoices indicating the supplier, date, quantity, grade, and sulfur content of all fuel combusted in the emergency ICE;
 - Date, time, and duration of periods when the emergency ICE was operated during periods of power outages;
 - Date, time, and duration of periods when the emergency ICE was operated for maintenance checks and readiness testing;
 - Date, time, and duration of periods the emergency ICE was operated for non-emergency purposes;

- e. The total number of hours that the emergency ICE operated during the previous 12-month period; and,
 - f. The total number of hours that the emergency ICE operated for maintenance checks, readiness testing, and non-emergency situations during the previous 12-month period.
- [Authority: WAC 173-400-102; WAC 173-400-113(1); ORCAA 8.11]

17. Final Determination to Approve

This Final Determination documents ORCAA staff's determinations with respect to the applicable criteria of approval in ORCAA Rule 6.1. ORCAA staff recommends approval of City of Lacey's proposed emergency ICE, provided the conditions identified in Section 16 of this Final Determination are implemented through an enforceable Order of Approval (AKA: Air Permit). Emissions calculations, modeling summary and other data supporting this Final Determination are provided as attachments.

~ end of section ~


PREPARED BY: Lauren Whybrew

10/6/2023

Date



10/31/23

REVIEWED BY: Mark Goodin, PE

Date

18. Supporting Information

The following attachments include information supporting determinations and conclusions stated above and included emissions calculations.

1. Abbreviations and Acronyms
2. Emergency Definitions
3. Federal Standards: Applicability by section and cross reference with Approval Order conditions.
4. Copy of SEPA Threshold Determination

Attachment 1: Abbreviations, Acronyms and Units of Measure

Abbreviations and Acronyms

AOP	Air Operating Permit
AP-42	Compilation of Emission Factors, AP-42, Fifth Edition, Volume I, Stationary Point and Area Sources – Published by EPA
ASIL	Acceptable Source Impact Level pursuant to Chapter 173-460 WAC
BACT	Best Available Control Technology
CAM	Compliance assurance monitoring (Title 40 CFR 64)
CFR	Code of Federal Regulations
CO	Carbon monoxide
EPA	United States Environmental Protection Agency
FCAA	Federal Clean Air Act
HAP	Hazardous air pollutant listed pursuant to Section 112 FCAA
ICE	Internal Combustion Engine
MACT	Maximum Achievable Control Technology
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOC	Notice of Construction application
NO _x	Nitrogen oxides
NSPS	New Source Performance Standards
NSR	New Source Review
ORCAA	Olympic Region Clean Air Agency
PM	Total particulate matter (includes both filterable particulate matter measured by EPA Method 5 and condensable particulate matter measured by EPA Method 202)
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to 10 micrometers
PM _{2.5}	Particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers
PSD	Prevention of Significant Deterioration
PTE	Definition pursuant to WAC 173-400-030(76)
RACT	Reasonably Available Control Technology
RBLC	RACT/BACT/LEAR Clearinghouse
RCW	Revised Code of Washington
SO ₂	Sulfur Dioxide
SQER	Small Quantity Emission Rate listed in Chapter 173-460 WAC

TAP	Toxic Air Pollutant pursuant to Chapter 173-460 WAC
T-BACT	Best Available Control Technology for toxic air pollutants
VOC	Volatile Organic Compound
WAC	Washington Administrative Code
WCAA	Washington Clean Air Act

Units of Measurement

'	minute (measurement of angle)
"	second (measurement of angle)
°	degree
acfm	actual cubic feet per minute
atm	atmosphere
BHP	Brake horse power
Btu	British thermal units
cfm	cubic feet per minute
dscf	dry standard cubic feet
dscfm	dry standard cubic feet per minute
°F	degree Fahrenheit
ft	feet
g	grams
g/s	grams per second
gal	gallon
gr	grain
hp	horsepower
hr	hour
in	inches
K	degree Kelvin
kg	kilograms
km	kilometers
kW	kilowatt
L	liter
lb	pounds
µg	micrograms
m	meters
M	thousand
Mbf	thousand board feet
min	minute
MM	million
MMbf	million board feet
MMBtu	million British thermal units
mmHg	millimeters of mercury
mph	miles per hour
MW	megawatts
ppb	parts per billion
ppm	parts per million
ppmvd	parts per million, dry volume
psi	pounds per square inch
s	second
scfm	standard cubic feet per minute
tpy	tons per year

Attachment 2: Emergency Definitions

Emergency Operation as defined by:

40 CFR § 60.4219(1): The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.

40 CFR § 63.6675(1): The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.

Attachment 3: Federal Standards: Applicability by section and cross reference with Approval Order conditions.

Table A1: Applicable Requirements from Title 40 CFR Part 63 Subpart ZZZZ

CITATION	SUBJECT	APPLICABLE	CONDITION
§63.6580	What is the purpose of this subpart?	Yes, although no ongoing requirements	N/A
§63. 6585	Am I subject to this subpart? – Stationary RICE		
§63.6585(a)	Stationary RICE definition	Yes, although no ongoing requirements	N/A
§63.6585(b)	Major Source definition	No – Facility does not meet major source definition	N/A
§63.6585(c)	Area Source definition	Yes – Facility meets area source definition	N/A
§63.6585(d)	Area sources not subject to requirement to obtain a 40 CFR Part 70 or 71 air operating permit.	Yes – Facility does not require a Title V air operating permit.	N/A
§63.6585(d)-(e)	Other requirements	No – These provisions do not apply.	N/A
§63. 6590	What part of my plant does this subpart cover?		
§63. 6590(a)(1)	Affected Source - Existing stationary RICE	No – Emergency RICE is a new unit.	N/A
§63. 6590(a)(2)	Affected Source - New stationary RICE	Yes – RICE is regulated as a new stationary RICE	N/A
§63. 6590(a)(3)	Affected Source - Reconstructed stationary RICE	No	N/A
§63. 6590(b)	Stationary RICE subject to limited requirements	No	N/A
§63. 6590(c)	Stationary RICE subject to Part 60	Yes	Requirements are met by meeting the requirements in 40 CFR Part 60 Subpart IIII
§63. 6595	When do I have to comply with this subpart?		
§63. 6595(a)(1)	Compliance dates for existing stationary RICE at major sources	No	N/A
§63. 6595(a)(2)	Compliance dates for starting up new or reconstructed stationary RICE at major sources before August 16, 2004.	No	N/A

§63. 6595(a)(3)	Compliance dates for starting up new or reconstructed stationary RICE at major sources after August 16, 2004.	No	N/A
§63. 6595(a)(4)	Compliance dates for starting up new or reconstructed stationary RICE less than 500hp at major sources before January 18, 2008.	No	N/A
§63. 6595(a)(5)	Compliance dates for starting up new or reconstructed stationary RICE at major sources after August 16, 2004.	No	N/A
§63. 6595(a)(6)	Compliance dates for starting up new or reconstructed stationary RICE at area sources before January 18, 2008.	No	N/A
§63. 6595(a)(7)	Compliance dates for starting up new or reconstructed stationary RICE at area sources after January 18, 2008.	Yes – No ongoing requirements	N/A
§63. 6595(b)	Area sources that become a major source	No	N/A
§63. 6600	What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?	No	N/A
§63. 6601	What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?	No	N/A
§63. 6602	What emission limitations must I meet if I own or operate existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?	No	N/A
§63. 6603	What emission limitations and operating limitations must I meet if I own or operate existing stationary RICE located at an area source of HAP emissions?	No	N/A
§63. 6604	What fuel requirements must I meet if I own or operate an existing stationary CI RICE?	No	N/A
§63. 6605	What are my general requirements for complying with this subpart? a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.	Yes	N/A
§63. 6610	By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?	No – Major sources only	N/A
§63. 6611	By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary	No – Major sources only	N/A

	RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?		
§63. 6612	By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?	No – Provisions apply to existing RICE only	N/A
§63. 6615	When must I conduct subsequent performance tests? If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.	No – No testing requirements for new emergency RICE per Table 3	N/A
§63. 6620	What performance tests and other procedures must I use?	No – No performance testing is required for new emergency RICE	N/A
§63. 6625(a)-(g)	What are my monitoring, installation, collection, operation, and maintenance requirements?	No	N/A
§63. 6625(h)	Must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.	Yes	condition 3b
§63. 6625(i)-(j)	Oil analysis requirements.	No	N/A
§63. 6630	How do I demonstrate initial compliance with the emission limitations and operating limitations?	No	N/A
§63. 6635	How do I monitor and collect data to demonstrate continuous compliance?	No	N/A
§63. 6640(a)-(e)	How do I demonstrate continuous compliance with the emission limitations and operating limitations?	No – None of the requirements from Tables 1a – 5 apply	N/A
§63. 6640(f)	Requirements for emergency stationary RICE In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4) of this section, is prohibited.	Yes	condition 2 & 3a
§63.6645	What notifications must I submit and when?	No	N/A
§63.6650	What reports must I submit and when? Emergency stationary RICE that operate or are contractually obligated to be available for more than 15 hours per year for the purposes specified in §63.6640(f)(2)(ii) and (iii) or that operate for the purposes specified in §63.6640(f)(4)(ii)	Yes	This reporting requirement was not incorporated into the NOC

			Approval Order.
§63.6655	What records must I keep?	No – No requirements for new emergency RICE	N/A
§63.6660	In what form and how long must I keep my records?	No	N/A
§63.6665	What parts of the General Provisions apply to me?	Yes, although no ongoing requirements	N/A
§63.6670	Who implements and enforces this subpart?	No	N/A
§63.6675	What definitions apply to this subpart?	No	N/A

Table A2: Applicable Requirements from Title 40 CFR Part 60 Subpart IIII

CITATION	SUBJECT	APPLICABLE	CONDITION
§60. 4200	Am I subject to this subpart?		
§60. 4200(a)	Applicability to owners, manufacturers and operators	Yes, although no ongoing requirements	N/A
§60. 4200(b)	Non-applicability to engines being tested	No	N/A
§60. 4200(c)	Exemption from obtaining a permit under 40 CFR Parts 70 or 71	Yes – Applicable exemption from Title V for area sources	N/A
§60. 4200(d)	Exemption for national security	No	N/A
§60. 4200(e)	Temporary replacements	No	N/A
§60. 4201	What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?	No – Applies to engine manufacturers	N/A
§60. 4202	What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?	No – Applies to engine manufacturers	N/A
§60. 4203	How long must my engines meet the emission standards if I am a manufacturer of stationary CI ICE?	No – Applies to engine manufacturers	N/A
§60. 4204	What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?	No – Applies to non-emergency engines	N/A
§60. 4205	What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?		
§60. 4205(a)	Pre-2007 model emergency stationary RICE with a displacement of less than 10 liters per cylinder	No	N/A
§60. 4205(b)	2007 model year and later emergency stationary RICE with a displacement of less than 30 liters per cylinder	Yes	condition 1

§60.4205(c)	Fire pump engines with a displacement of less than 30 liters per cylinder	No	N/A
§60.4205(d)	Emergency stationary RICE with a displacement of greater than 30 liters per cylinder	No	N/A
§60.4205(e)	NTE standards for engines with a displacement less than 30 liters per cylinder	No	N/A
§60.4205(f)	Emission standards for modified and reconstructed engines	No	N/A
§60.4206	How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?		
§60.4206	Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR Part 60, Sections 60.4204 and 60.4205 over the entire life of the engine.	Yes	condition 8
§60.4207	What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?		
§60.4207(a)	Reserved	No	N/A
§60.4207(b)	Diesel fuel requirements that meet §80.510(b) beginning October 1, 2010 for engines with a displacement less than 30 liters per cylinder	Yes	condition 5
§60.4207(c)	Reserved	No	N/A
§60.4207(d)	Diesel fuel requirements beginning June 1, 2012 for engines with a displacement greater than 30 liters per cylinder	No	N/A
§60.4207(e)	National security exemption under §60.4200(d)	No	N/A
§60.4208	What is the deadline for importing or installing stationary CI ICE produced in previous model years?		
§60.4208(a)	After December 31, 2008 installation requirements	No	N/A
§60.4208(b)	After December 31, 2009 installation requirements	No	N/A
§60.4208(c)	After December 31, 2014 installation requirements	No	N/A
§60.4208(d)	After December 31, 2013 installation requirements	No	N/A
§60.4208(e)	After December 31, 2012 installation requirements	No	N/A
§60.4208(f)	After December 31, 2016 installation requirements	No	N/A
§60.4208(g)	After December 31, 2018 installation requirements	No	N/A
§60.4208(h)	Engines with a displacement less than 30 liters per cylinder importation requirements	No	N/A
§60.4208(i)	Modified and reconstructed engine non-applicability	No	N/A
§60.4209	What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?		
§60.4209(a)	Non-resettable hour meter prior to startup requirements	Yes	condition 6
§60.4209(b)	Engine equipped with a diesel particulate filter requirements	No	N/A
§60.4210	What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?	No	N/A
§60.4211	What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?		

§60.4211(a)	Compliance with emission standards	Yes – General applicability provision.	N/A
§60.4211(a)(1)	Operation according to manufacturer's emission related information	Yes	condition 8
§60.4211(a)(2)	Emission related setting changes that are only permitted by manufacturer	Yes	condition 8
§60.4211(a)(3)	Meet applicable requirements of CFR 40 parts 89, 90, and/or 1068	Yes	condition 8
§60.4211(b)	Compliance of emission standards for pre-2007 model engines	No	N/A
§60.4211(c)	Compliance of emission standards for 2007 or later model engines	Yes	condition 1
§60.4211(d)	Compliance with emission standards in §60.4204(c) & 60.4205(d)	No	N/A
§60.4211(d)(1)	Initial performance testing to demonstrate initial compliance	No	N/A
§60.4211(d)(2)	Continuous monitoring	No	N/A
§60.4211(d)(3)	Non-emergency engines with displacement greater than 30 liters per cylinder performance testing	No	N/A
§60.4211(e)	Modified and reconstructed engine compliance requirements	No	N/A
§60.4211(f)	Emergency stationary ICE maintenance and testing hours	Yes	condition 3
§60.4211(g)	Compliance of deviated changes to those permitted by manufacturer	No	N/A
§60.4212	What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?	No	N/A
§60.413	What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?	No	N/A
§60.413(a)	Performance test requirements according to §60.8 and Table 7 to Subpart IIII of §Part 60	No	N/A
§60.413(b)	Testing during startups, shutdowns and malfunctions	No	N/A
§60.4213(c)	Test run requirements	No	N/A
§60.4213(d)	Compliance with the reduction requirement	No	N/A
§60.4214	What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?	No	N/A
§60.4214(a)	Specific non-emergency stationary CI ICE recordkeeping and notifications	No	N/A
§60.4214(b)	Emergency stationary CI ICE recordkeeping and notification requirements. If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification.	Yes – Applicable exemption	N/A
§60.4214(c)	Stationary CI ICE with diesel particulate filters recordkeeping	No	N/A

§60.4215	What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?	No	N/A
§60.4216	What requirements must I meet for engines used in Alaska?	No	N/A
§60.4217	What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?	No	N/A
§60.4218	What parts of the General Provisions apply to me?	Yes, although no ongoing requirements	N/A
§60.4219	What definitions apply to this subpart?	Yes, although no ongoing requirements	N/A

Attachment 4: SEPA Threshold Determination

DETERMINATION OF NONSIGNIFICANCE

SEPA/Case Number: 21-264

Description of Proposal: Construction of a new aeration treatment building to provide pH adjustments for corrosion control. The proposed treatment building will be constructed on an existing undeveloped parcel that is 0.17 acres. The overall project consists of four contiguous City owned parcels. Each having areas of 0.17 acres. There are four existing buildings on the combined site containing well and chlorination equipment. The proposed project included approximately 0.12 acres of impervious surface.

Proponent: City of Lacey

Location of Proposal: 8820-8826 Milbanke Dr SE, Olympia WA. Parcel

Lead Agency: City of Lacey Community Development Department

Threshold Determination: As provided by RCW 43.21C.240 and WAC 197-11-158, the lead agency has determined that the requirements for environmental analysis, protection, and mitigation measures have been adequately addressed in the applicable development regulations and comprehensive plan adopted under Chapter 36.70A RCW and in other local, state, or federal laws or rules. Therefore, this proposal is not likely to have a significant adverse impact upon the environment, an Environmental Impact Statement is not required under RCW 43.21C.030(2)(C), and the City of Lacey will not require additional mitigation measures under SEPA. This decision was made after review of an Environmental Checklist and other information on file with the City. This information is available to the public upon request.

_____ There is no comment period for this DNS.

☒ This DNS is issued under 197-11-340(2); the lead agency will not act on this proposal for 14 days. Comments must be submitted by 9/15/2021

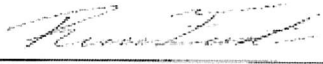
_____ The comment period, pursuant to WAC 197-11-355, was combined with the Notice of Application comment period, using the Optional DNS Process. The comment period closed on [Click [here](#) and type date].

Assigned Staff Person: Reace Fant, Assistant Planner

Responsible Official: Rick Walk, AICP, Director of Community & Economic Development

Address: 420 College Street SE, Lacey, WA 98503

Phone: (360) 491-5642 **Fax:** (360) 438-2669

Date: 9/1/2021 **Signature:** 

Appeal Deadline: 5:00 p.m. on 9/15/2021

NOTE: Pursuant to RCW 43.21C.075 and Lacey City Code 14.24.170(A), a project denial based upon environmental information, and a conditioned or mitigated Determination of Nonsignificance (DNS) may be appealed by any agency or aggrieved person. Appeals are filed either with the Community Development Department when there is also an underlying governmental action or with the City Council if there is no underlying governmental action. Appeals to the City Council must be filed within fourteen (14) days of the issuance of the written decision (refer to the Lacey City Code for time periods on appeals filed with the Community Development Department).
cc: Department of Ecology

OLYMPIC REGION CLEAN AIR AGENCY

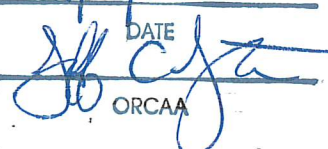
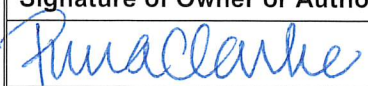
2940 Limited Lane NW - Olympia, Washington 98502 - 360-539-7610 – Fax 360-491-6308

FORM 1- NOTICE OF CONSTRUCTION

TO CONSTRUCT - INSTALL - ESTABLISH OR MODIFY AN AIR CONTAMINANT SOURCE

Form 1 Instructions:

1. Please complete all the fields below. **This NOC application is considered incomplete until signed.**
2. If the application contains any confidential business information, please complete a Request of Confidentiality of Records (www.orcaa.org/forms).
3. Duty to Correction Application: An applicant has the duty to supplement or correct an application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application must, upon becoming aware of such failure or incorrect submittal, promptly submit supplementary factors or corrected information.

Business Name: City of Lacey		For ORCAA use only	
Mailing Address: 420 College St SE, Lacey, WA 98503		File No: 837 County No: 67 Source No: 828 Application No: 22NOC1572	
Physical Address of Project or New Source: 8824 Milbanke Dr SE, Olympia, WA 98513		Date Received: Received AUG 03 2022 ORCAA	
Billing Address: 420 College St SE, Lacey, WA 98503			
Project or Equipment to be installed/established: Madrona pH Treatment project-new generator			
Anticipated startup date: <u>12 / 31 / 2025</u> Is facility currently registered with ORCAA? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
This project must meet the requirements of the State Environmental Policy Act (SEPA) before ORCAA can issue final approval. Indicate the SEPA compliance option: <input checked="" type="checkbox"/> SEPA was satisfied by <u>City of Lacey, WA</u> (government agency) on <u>09/01/21</u> (date) - Include a copy of the SEPA determination <input type="checkbox"/> SEPA threshold determination by _____ (government agency) is pending - Include a copy of the environmental checklist <input type="checkbox"/> ORCAA is the only government agency requiring a permit - Include ORCAA Environmental Checklist <input type="checkbox"/> This project is exempt from SEPA per _____ (WAC citation).			
Name of Owner of Business: City of Lacey		Agency Use Only	
Title:		CONDITIONALLY APPROVED FOR CONSTRUCTION ONLY IN ACCORDANCE WITH RCW 70A.15, WAC 173-400- ORCAA REGULATIONS (SEE ATTACHED ADDENDUM FOR CONDITIONS OF APPROVAL) <u>11/3/2023</u> DATE  ORCAA	
Email:			
Phone: 360-491-5600			
Authorized Representative for Application (if different than owner): Puna Clarke, P.E.			
Title: Project Manager/Utility Engineer			
Email: pclarke@ci.lacey.wa.us			
Phone: 360-459-4494			
I hereby certify that the information contained in this application is, to the best of my knowledge, complete and correct.			
Signature of Owner or Authorized Representative: (sign in Blue Ink) 		DATE: <u>7-21-22</u>	
IMPORTANT: Do not send via email or other electronic means. ORCAA must receive Original, hardcopy, signed application and payment prior to processing application.			