Notice of Construction (NOC) Worksheet

pscleanair.org
Puget Sound Clean Air Agency

Applicant: Lenz Enterprises Inc.	**NOC Number**: 11753
Project Location: 5210 SR 532, Stanwood, WA 98292	**Registration Number**: 28983
Applicant Name and Phone: Edward Wheeler, (360) 654-6271	**NAICS:** 325314
Engineer: Courtney Shernan/Carole Cenci	**Inspector**: Tom Hudson/Ivan Rivera

A. DESCRIPTION

For the Order of Approval:
Expansion and substantial alteration of control equipment of an existing aerated static pile (ASP) and windrow/mass bed composting facility from an incoming feedstock limit of 75,000 wet tons per year to an incoming feedstock limit of 150,000 wet tons per year of organic material as defined in the Order of Approval conditions. All material put into each ASP is counted toward the incoming feedstock limits, including feedstock received from offsite, bulking agents, and any and all other materials placed into the ASPs. Total amount of feedstock is limited to 100,000 wet tons per year in the new ASPs and the facility overall is limited to 150,000 wet tons per year.

The facility includes one existing tipping and feedstock preparation building (5,000 cfm exhaust), eight existing ASP cells (17,000 ft^2 floor area total), five new ASP cells (22,000 ft^2 floor area total), windrow composting area, and final product storage and curing area. Emissions from the tipping building and the existing eight ASPs will be controlled by two existing biofilters (4,256 ft^2 area total) and the five new ASP cells will be controlled by two new biofilters (9,800 ft^2 area total). All ASPs are negatively aerated and covered with at least 12" of finished compost.

Additional Information:

Existing Facility

Lenz Enterprises Inc. (Lenz) operates an existing aerated static pile (ASP) and mass bed composting facility with an incoming feedstock capacity of 75,000 tons per year. The composting operation includes the following three-stage system:

- **Existing Stage 1 High-Rate Phase:** ASP composting with controlled positive/negative or no aeration with temperature monitoring;
- **Existing Stage 2 Stabilization Phase:** Windrow or turned mass bed composting with manual temperature and gas production monitoring; and
- **Existing Stage 3 Curing Phase:** Turned or unturned mass bed curing. This material may be screened or unscreened. Curing occurs for some materials based on the ultimate use of the final product, but curing is not required for all products.

Proposed Equipment/Activities

Lenz is proposing modifications to its existing facility to increase incoming feedstock capacity from 75,000 to 150,000 tons per year. These modifications are described in the NOC application as "Phase II"

of the operational composting area at the facility. However, in the application and other materials, the stages of composting (high-rate, stabilization, and curing) were sometimes also referred to as phases. To avoid confusion, the current project to add additional capacity will be referred to as the "new" ASPs, biofilters and windrows. The existing capacity which was temporarily permitted with NOCOA 10494 will be referred to as the "existing" ASPs, biofilters, and windrows (previously massbeds). The modifications include the following, as listed in the original permit application for NOC 11753, the application for NOC 11053 (which was submitted to make permanent the 75,000 ton per year feedstock limit), and based on additional information from the applicant:

1. Modifications to feedstock handling operations in the tipping building to accommodate a 100% increase in feedstock handling capacity;
2. Installation of a larger greater capacity (5,000 CFM) air handling unit in the tipping building to capture tipping building air and routed to the existing north biofilter;
3. Construction and operation of an additional 22,000 square feet of high-rate aerated static pile (ASP) composting area with controlled forced negative airflow with temperature monitoring;
4. Construction and operation of two new biofilters creating an additional 5,488 square feet of biofilter to accommodate additional ASP operations;
5. Expanded second stage composting area to include four additional acres of impervious surface for windrow composting with manual temperature and gas monitoring.
6. Change in the method of operation of the existing ASPs to be fully negatively aerated (previously were permitted to use positive, negative, and no aeration) and changing from mass bed to windrows for the second stage of composting.
7. Permanent approval of the temporary increase allowed by NOC 10494 and applied for in NOC 11053.

These modifications are discussed in more detail below:

1. **Feedstock Receiving and Pretreatment**
   To increase the amount of feedstock taken in, Lenz is proposing to add a second shift of compost personnel to allow longer processing onsite (7am to 5:30pm, Monday through Saturday). Lenz is also proposing to change its receiving evaluation process to allow certain materials, such as brush and stumps, to bypass initial screening and go straight to grinding.

2. **Stage I Composting**
   The facility currently encompasses 17,000 square feet of ASP composting area. Lenz is proposing to construct an additional 22,000 square feet of ASP composting area. Two new biofilters (5,488 ft^2 area total) will control emissions from the new ASP composting area.

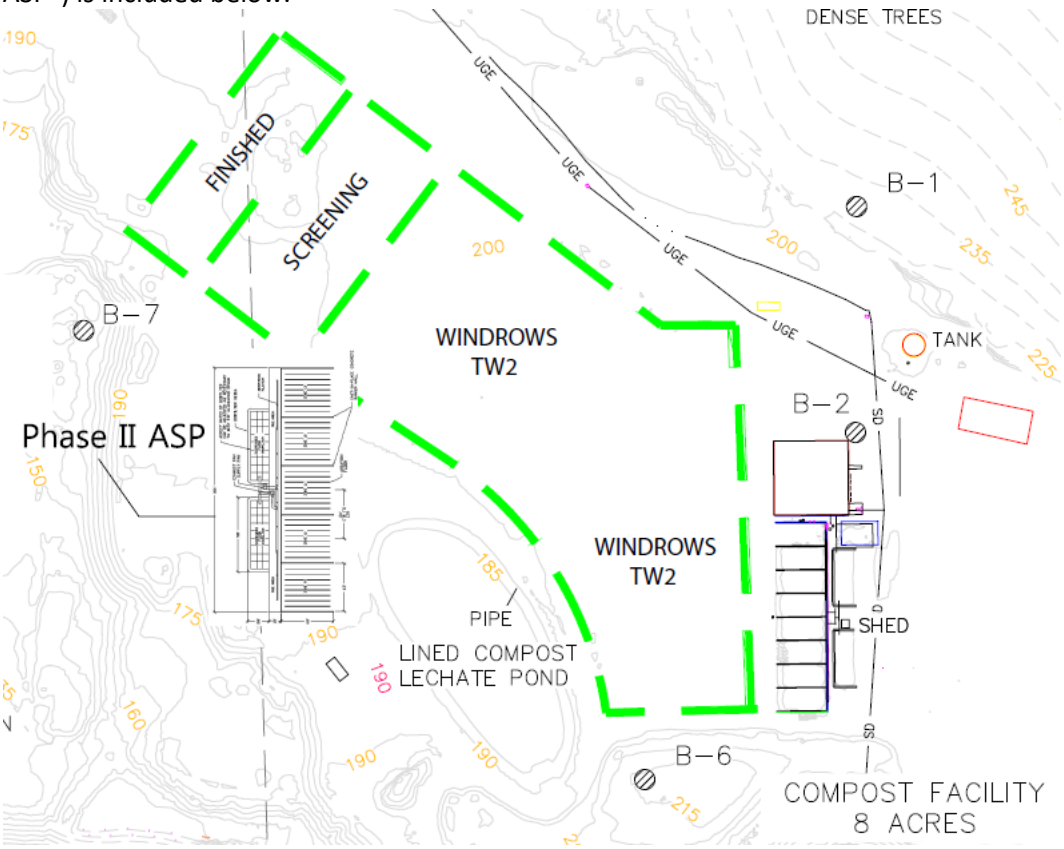
3. **Stage 2 Composting**
   Lenz currently uses a mass bed system for Stage 2 composting (72,000 square foot area with a pile size of 21,333 cubic yards). Lenz is proposing to change from using a mass bed system to a windrow system as the primary bed configuration for the existing and expanded capacity. In a windrow system, piles are formed into long rows, with valleys between the rows, rather than a single large pile (mass bed). The windrow system allows for faster turning of beds and additional

exposure to natural aeration. Lenz is proposing to use an additional 177,000 square foot area for Stage 2 composting. The following table was provided in the NOC application:

Phase II - Windrow Composting		
21,333	cy	Mass-Bed Volume (current)
72,000	ft^2	Mass-Bed Area (current)
8	ft	Pile height (current)
1.65	acres	Mass-Bed Area (current)
177,000	ft^2	Proposed Phase II
4.0	acres	Proposed Phase II
7,848	cy	Proposed Phase II per acre of windrow
5.72	acres	Phase I & II
44,861	cy	Windrow Volume Phase I & II
2.10	x	Increase in Volume Capacity

The majority (75%) of the raw materials composted will be curb-side recycled yard and food residuals (roughly 112,000 tons of material per year). Other materials will include land-clearing debris (20% or roughly 30,000 tons annually) and agricultural debris (5% or roughly 8,000 tons annually).

A plot plan of the composting area of the facility with the proposed modifications (identified as "Phase II ASP") is included below.



Permit History

The Lenz facility was originally permitted under Order of Approval No. 9386 with a 30,000 ton per year capacity. In 2014, Order of Approval No. 10494 was issued for a temporary expansion of the facility from 30,000 to 75,000 tons per year. Order of Approval No. 10494 required Lenz to submit a Notice of Construction (NOC) application for final approval for the expansion by December 1, 2015, and it stated that if the application was deemed complete by January 15, 2016, temporary Order of Approval No. 10494 would remain in effect until final action was taken on the NOC application. Lenz's NOC application for permanent approval (NOC No. 11053) was deemed completed on January 7, 2016. The Agency has not taken final action on NOC No. 11053, so Lenz has been operating under Order of Approval No. 10494. Order of Approval No. 10494 will be cancelled and superseded by this Order, and the NOC application submitted for No. 11053 will be reviewed and included in this NOC as needed and appropriate.

B. DATABASE INFORMATION

Source:
28983 - Lenz Enterprises Inc

Basic Equipment
Count: 23

Reg	Name	I...	NC/N...	BE Code	Year...	U...	Rated Capacity	Rated Units	NOC...	NOC Exempted	Comments
28983	Lenz Enterp...	1	11753	14 - composting	2009	1	150000.00	Tons/Year	☐	☐	ECS Design - Aerated Static Pile (ASP)
28983	Lenz Enterp...	2		19 - crusher (cone, gyratory, impact, jaw)		1	450.00	Ton/Hr	☑	☐	30 x 42 Jaw Crusher (cedar rapids)
28983	Lenz Enterp...	3		19 - crusher (cone, gyratory, impact, jaw)		1	350.00	Ton/Hr	☑	☐	1316 El Jay Cone Crusher
28983	Lenz Enterp...	4		32 - IC engine (generator, pump, compressor)	2017	1	97.00	Hp	☑	☐	2017 Komptech Nemus 2700 Trommel, Screen
28983	Lenz Enterp...	5		32 - IC engine (generator, pump, compressor)	2017	1	68.00	Hp	☑	☐	2017 Screenpod Airvac 1600 Dual,
28983	Lenz Enterp...	6		32 - IC engine (generator, pump, compressor)		1	75.00	Hp	☑	☐	6" Pioneer Trailer mounted diesel pump NA Serial # 5936
28983	Lenz Enterp...	7		32 - IC engine (generator, pump, compressor)		1	75.00	Hp	☑	☐	6" Pioneer trailer mounted pump #2 NA Serial # 7239 W
28983	Lenz Enterp...	8		32 - IC engine (generator, pump, compressor)	1996	1	15.00	Hp	☑	☐	Airbo Light Plant 1462-SF 940912 CI LSD 15 Light generat
28983	Lenz Enterp...	9		32 - IC engine (generator, pump, compressor)	2016	1	45.00	Hp	☑	☐	CEC 36X80 Stacker Conveyor 36X80 No serial # on machi
28983	Lenz Enterp...	10		32 - IC engine (generator, pump, compressor)	2006	1	97.00	Hp	☑	☐	CEC Screener 6' X 16' Serial # 06369-278 CI LSD 97 Scree

Comment: ECS Design - Aerated Static Pile (ASP)

Control Equipment
Count: 2

Reg	Name	Item #	NC/N...	CE Code	Year Installed	Units Inst...	Rated Capa...	Rated E...	NOC Not Required	Comments
28983	Lenz Enterp...	3	11753	99 - Miscellaneou...	2020	2	5488.00		☐	Phase II biofilter (north and south cells)
28983	Lenz Enterp...	2	11753	99 - Miscellaneou...	2009	2	4256.00	21220.00	☐	Biofilter for Phase I ASPs and Tipping Building

Comment: Biofilter for Phase I ASPs and Tipping Building

New NSPS due to this NOCOA?	**No**	**Applicable NSPS: None**	**Delegated? N/A**
New NESHAP due to this NOCOA?	**No**	**Applicable NESHAP: None**	**Delegated? N/A**
New Synthetic Minor due to this NOCOA?	**No**		

C. NOC FEES AND ANNUAL REGISTRATION FEES

NOC Fees:

Fees have been assessed in accordance with the fee schedule in Regulation I, Section 6.04. All fees must be paid prior to issuance of the final Order of Approval.

Fee Description	Cost	Amount Received (Date)
Filing Fee	$ 1,150	
Composting Facility	$ 10,000	
Refined Dispersion Modeling Review	$ 1,000	
SEPA (DNS)	$ 800	
Public Notice	$ 700 + $399 (publication costs)	
Filing received		$ 1,150 (3/6/2019)
Additional fee received		$ 12,500 (2/23/2021), $399 (4/21/2021)
Total Remaining	$ 0	**$14,049**

Registration Fees:
Registration fees are assessed to the facility on an annual basis. Fees are assessed in accordance with Regulation I, Section 5.07.

Applicability		
Regulation I	**Description**	**Note**
5.03(a)(1)	Facilities subject to federal emission standards (Title 40 CFR)	
5.03(a)(5)	Facilities with gas or odor control equipment (>= 200 cfm)	
5.03(a)(8)(D)	Facilities with commercial composting operations	
5.03(a)(8)(K)	Facilities with rock crushers	
Annual Registration Fee		
Regulation I	**Description**	**Fee**
5.07(c)	Base Registration Fee	$ 1,150
5.07(c)(1)	40 CFR 60 Subpart OOO	$ 2,100
5.07(c)(3)	Emission reporting	Varies
5.07(c)(6)	Facilities with composting operations (≥ 100,000 tons/yr)	$ 23,000
	Total =	$ 26,250+emission fees

D. STATE ENVIRONMENTAL POLICY ACT (SEPA) REVIEW

State Environmental Policy Act (SEPA) review was conducted in accordance with Regulation I, Article 2. The SEPA review is undertaken to identify and help government decision-makers, applicants, and the public to understand how a project will affect the environment. A review under SEPA is required for projects that are not categorically exempt in WAC 197-11-800 through WAC 197-11-890. A new source review action which requires a NOC application submittal to the Agency is not categorically exempt.

In addition to an Order of Approval from PSCAA, the proposed project requires a modification to Lenz's solid waste permit from the Snohomish Health District. This permit modification from Snohomish Health District cannot be issued until a SEPA determination is made.[1]

The Agency contacted Tom Barnett of Snohomish County Planning and Development Services via email on April 16, 2019, to confirm the county was not requiring SEPA review for the Lenz project. Mr. Barnett responded on the same day citing the exemption from SEPA they were relying on. The Agency also contacted Snohomish Health District on April 18, 2019, and they stated they were not requiring a SEPA review because it was not a new use. The Agency sent an email to Snohomish County Planning and Development Services, Snohomish Health District, and the Department of Ecology on April 20, 2020, requesting agreement that PSCAA would be the lead agency for SEPA review. All three agencies agreed that PSCAA would be lead agency via emails of April 20, 2020 from Dawn Mauer of the Washington Department of Ecology, April 21, 2020, from Tom Barnett of Snohomish County Planning and Development Services, and April 23, 2020, from Fanny Silverio-Gonzalez of the Snohomish Health District .

The applicant submitted a signed and completed environmental checklist that is included below. Each of the sections of the checklist are discussed in detail below.

Lenz updated SEPA CL07032019.pdf

Earth

The checklist indicates, "The site has been graded and prepared for industrial use as a part of the site mine reclamation plan. All construction will be slab on grade." The checklist lists Lenz's proposed measures to reduce or control erosion or other impacts to the earth, including preparing and implementing a construction quality control plan; using good construction techniques, procedures, and best management practices; and following the site's Stormwater Pollution Prevention Plan (SWPPP).

Air

Compost operations are potential sources of odor and other emissions. The tipping building where feedstock is received, processed, and stored and the aerated static piles are expected to have the

[1] Email from Anne Alfred (Snohomish Health District) to Edward Wheeler, dated July 3, 2019.

greatest potential for odor. Currently on the existing aerated static piles, Lenz alternates between positive aeration, with emissions controlled using a biofilter layer over the ASPs, and negative aeration, with emissions controlled using a 5' deep biofilter. With this modification, Lenz will be operating under negative aeration at all times with emissions controlled by a separate biofilter and is expected to have a greater removal efficiency than the current method of positive/negative/no aeration for VOC compounds, ammonia, and odor. For the proposed project, Lenz is proposing to control VOC, ammonia and odor emissions from the tipping building and ASPs using negative aeration to biofilters during 100% of the operation time of the ASPs, which does not include building or reclaiming the piles.[2]

Lenz will be required to test the biofilters on a recurring basis to ensure that they are meeting the performance standards for VOC and ammonia removal required by this Order of Approval.

This Order of Approval will require that there shall be no detectable odor associated with the Lenz composting facility at or beyond the facility's boundary. The Order of Approval will also require a complaint response plan addressing any odor or other complaints.

Composting is also a source of greenhouse gas emissions, including methane, nitrous oxide, and carbon dioxide. However, diversion of waste from landfills is expected to reduce emissions of methane and greenhouse gases overall. Researchers from Washington State University analyzed and compared emissions from composting and landfilling, and their findings were published in 2019. Using EPA's LandGEM model for estimating landfilling emissions and assuming a throughput of 100,000 tons per year, emissions of CO_2e from composting were estimated to be 25% less than emissions from landfilling.[3] Using EPA's WARM model, the results showed that diverting waste from landfilling to composting would reduce greenhouse gas emissions.[4] In the report, this was attributed to two factors: "removing food waste emissions of methane from landfills" and "the carbon storage benefit of applying compost to soils."[5] Based on this information, the Lenz facility is expected to have an increase in greenhouse gas emissions associated with this project; however, net greenhouse gas emissions are expected to decrease due to the diversion of material from landfills. Other information also indicates that composting organic waste generates fewer life cycle greenhouse gas emissions than landfilling, varying with landfill gas collection systems and use of that gas.[6] [7]

Other air contaminants, including but not limited to VOCs, hazardous air pollutants (HAPs), and toxic air pollutants (TAPs), are also discussed in Sections E, F, G, and H of this worksheet. Conditions related to air contaminants are identified Section K of this worksheet.

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[2] In the original application, Lenz proposed alternating between positive and negative aeration of the ASPs. In Lenz's January 2020 submittal, Lenz updated the project proposal to indicate that negative aeration would be used 100% of the time for both new and existing ASPs except when building and reclaiming the piles.

[3] Jobson, T., Khosravi, N., "Emissions from Washington State Compost Facilities: A Review of Volatile Organic Compound Data, and an Estimation of Greenhouse Gas Emissions" (November 2019, updated February 2020)

[4] Ibid

[5] Ibid

[6] Environ. Sci. Techno. 2020, 54, 9200-9209

[7] California Air Resources Board. Method For Estimating Greenhouse Gas Emission Reductions from Diversion of Organic Waste from Landfills to Compost Facilities, Final Draft, May 2017.

Water

The checklist states that groundwater is drawn from the site and used for sanitary needs; that sanitary wastewater is collected and hauled offsite; and that all stormwater on the site will be collected, treated, and reused onsite. Lenz confirmed that this is specifically referring to the composting activities at the facility in a letter dated June 25, 2020 (see Appendix E).

The checklist further states that there will not be discharges to ground water or surface water from proposed operations. Stormwater and leachate issues will also be reviewed by the Snohomish Health District as part of their solid waste permit review implementing WAC 173-350 (with input from the Washington Department of Ecology).

Lenz will be required to have no stormwater discharges from the composting area of the property and no discharges to groundwater or surface water. Specific requirements for the leachate collection system will be reviewed by the Snohomish Health District and will be incorporated into the facility's solid waste permit.

Plants and Animals

The checklist indicates that there is no existing vegetation at the compost facility and no noxious weeds or invasive species on or near the site.

The checklist also indicates that hawks, eagles, and songbirds have been observed on or near the site. The checklist indicates that the site is not part of a migration route. This is incorrect, since the site is part of the Pacific Flyway migratory route.[8] However, the project is not expected to have an impact on bird migration because the Flyway is very large, extending from the Pacific Ocean coastline to the Rocky Mountains and from Alaska to Mexico. The Lenz facility is a very small area compared to the entire flyway. In addition, the areas near the facility that are tidelands, coastal, agricultural or other non-industrial land are available and are much more hospitable to migrating birds.

Energy and Natural Resources

The checklist states that electricity will be used for motors, blowers, and system controls and that energy conservation is designed into the system by utilizing energy efficient motors, blowers, and control systems.

Environmental Health

The checklist indicates that there is no contamination present on the site from any uses, and there are no existing hazardous chemicals or conditions that might affect project development or design. Diesel fuel and lubricants such as grease for operating and maintaining equipment will be used during construction and normal operations.

[8] https://www.fws.gov/birds/management/flyways.php (accessed 7/16/2020)

The checklist describes in general terms the sources of noise from the proposal and further states that noise reduction is included in the design of the equipment used onsite that can create noise, and this applies to both mobile and stationary equipment that can generate noise. The checklist also states the property size and vegetation provide additional buffer to control noise impacts. The compost portion of the facility is located roughly 800 feet south of State Route 532, which borders the north side of the property. Lenz is required to comply with Snohomish County Code, Title 10, Chapter 10-01 Noise Control and not exceed allowable noise levels.

Land and Shoreline Use

Snohomish County's comprehensive plan designation for the site is Mineral Conservation (MC) and Rural 5 acre (R-5). The applicant provided additional documentation to demonstrate that the composting operation is authorized by Snohomish County.

Housing, Aesthetics, Light/Glare, Recreation, and Historical and Cultural Preservation

The project is not expected to have impacts on housing or recreation. In addition, the checklist indicates that no views will be altered or obstructed by the project and indicates that there are no landmarks, features, or other evidence of Indian or historic use or occupation. However, it is likely that the land was historically inhabited by indigenous people.

The checklist states that light will be generated from safety lighting and heavy equipment use, with normal operating hours between 7:00am and 5:30pm, but light and glare will not be a safety hazard or interfere with views. The checklist also states the property size and vegetation provide additional buffer to control light and glare impacts.

Transportation

The checklist states at B.14.f: "The proposed completed project will not generate any additional vehicular trips per day." Based on that statement, the checklist states at 14.h that "No measures to reduce or control transportation impacts are proposed." However, the proposal would increase the maximum amount of feedstock processed from 75,000 tons per year to 150,000 tons per year. Lenz has stated that its assumption that no additional vehicular trips per day is based upon the concept that materials arriving and leaving the site will be accomplished with larger vehicles (i.e. larger load per vehicle).[9]

Based on documentation provided by Lenz, there will be no more than 77 total truck trips per day and 7,118 total truck trips per year for the compost facility,[10] and vehicular traffic will not increase. Limits on the number of truck trips per day and per year will be established to verify that the

[9] "Lenz Permit Modification Application_PSCAA_2018.pdf", received via email on February 19, 2019. See Appendix A of this worksheet.

[10] "Transportation Analysis for Lenz Compost Facility Expansion.pdf", received via email on May 5, 2020. See Appendix E of this worksheet. This document indicates that there will be 37 truck trips per day (highest day, peak season) and 5,357 truck trips per year **to** the facility, and there will be 40 truck trips per day (highest day, peak season) and 1,761 truck trips per year **from** the facility. These values have been combined to get the total truck trips listed above.

vehicular traffic will not increase, with a requirement to maintain records of each truck trip to verify compliance with the limits.

Public Services and Utilities

The checklist states that the project will not result in an increased need for public services. In addition, the following utilities are currently available at the site: electricity, telephone, water, and refuse service.

A draft DNS was posted on March 23, 2021, with the draft NOC worksheet and draft Order of Approval for public comment and a final DNS was issued on October 13, 2021, for public comment. As part of its application materials and the comment processes, Lenz provided additional information considered by the Agency as part of its SEPA review. The Agency responded to comments received on the draft and final DNSs on pages 75-92 of this worksheet. Based on the proposed action, the information in the SEPA checklist and the information before the Agency, it was determined that the project will not: adversely affect environmentally sensitive or special areas, or endangered or threatened species; conflict with local, state, or federal laws or requirements for the protection of the environment, or establish a precedent for future actions with significant effects and will not cause any probable significant adverse environmental impacts.

E. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) AND REASONABLY AVAILABLE CONTROL TECHNOLOGY REVIEW

Best Available Control Technology (BACT)

New stationary 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 70.94 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."

An emissions standard or emissions limitation means "a requirement established under the Federal Clean Air Act or Chapter 70.94 RCW which limits the quantity, rate, or concentration of emissions of air contaminants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction and any design, equipment, work practice, or operational standard adopted under the Federal Clean Air Act or Chapter 70.94 RCW."

Best Available Control Technology for Toxics (tBACT)

New or modified sources are required to use tBACT for emissions control for TAP. Best available control technology for toxics (tBACT) is defined in WAC 173-460-020 as, "the term defined in WAC 173-400-030, as applied to TAP" and tBACT can be met through BACT for a project. For this application, what has been determined as BACT is also tBACT.

Reasonably Available Control Technology (RACT)

"Reasonably available control technology (RACT)" means the lowest emission limit that a particular source or source category is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. RACT is determined on a case-by-case basis for an individual source or source category taking into account the impact of the source upon air quality, the availability of additional controls, the emission reduction to be achieved by additional controls, the impact of additional controls on air quality, and the capital and operating costs of the additional controls.

A project to replace or substantially alter emission control technology at an existing stationary source that does not result in an increase in emissions of any air contaminant is required to submit a NOC application and receive an Order of Approval. It is required that the owner or operator employ RACT for the affected emission unit(s). The agency may prescribe reasonable operation and maintenance conditions for the control equipment and prescribe other requirements as authorized by chapter 70.94 RCW. Lenz is substantially altering the control equipment on the existing ASPs to provide better capture and lower emissions by switching the aeration system from positive/negative/no aeration to fully

negatively aerated. This is a substantial alteration of control equipment that will not result in an increase in emissions therefore the controls must meet RACT.

Similar Permits

Table 1. Similar Permits Issued by PSCAA

Origin	Description	Limitations
PSCAA Order No. 11935 (12/3/2020)	Commercial composting facility (maximum of 14,000 wet tons of feedstock per year) for recycling green yard waste, fish waste, pre-consumer food waste, and agricultural manure and bedding using Extended Aerated Static Pile composting technology. The compost operation consists of a tipping area, two Extended Aerated Static Pile composting bays with four zones each, concrete composting pad (100'x300'), curing piles, final product storage piles, and a leachate pond.	**PM/Visual Emissions** • Visible emissions from grinding and screening shall not exceed 5% opacity for any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour as measured by WDOE Method 9A. **VOC/Odor/Organic HAP&TAP** • VOC removal efficiency of at least 75.0% across biofilter cover layer. • No detectable odor allowed at or beyond the facility's boundary **Ammonia** • NH3 removal efficiency of at least 53.0% across biofilter cover layer. • No detectable odor allowed at or beyond the facility's boundary

Origin	Description	Limitations
PSCAA Order No. 12023 (11/6/2020) and 11582 (6/13/19)	One Anaerobic Digester System with food waste feed. System made up of two 18,853 gallon fermentation tanks, one 7,060 cubic feet biogas storage unit, waste gas flare, one biofilter rated at 23 cubic yards volume capacity with H2S removal system, one 750 gallon receiving tank, one 300 gallon food waste grinding tank, one 2,333 gallon feeding tank, one 4,250 gallon feeding tank, one 4,250 gallon liquid plant food tank, System design capacity is 1500 tons per year of food waste feedstock.	**VOC/Odors** • With respect to the emissions produced from material handling activities and emissions from the digester operation itself BACT for VOC and odor is total enclosure with 100% of emissions vented directly into the biofilter inlet duct. • The anaerobic digestion process is completely sealed from the atmosphere with no direct discharge. • Food waste receiving and handling all occurs within a building and is directly vented to the biofilter • There will be no storage of unprocessed food waste on-site. • Digestate slurry (liquid plant food) will go to a tank that is directly vented to the biofilter • The biofilter will be monitored and maintained to ensure proper operation and in compliance with the permit conditions (see additional discussion below). • No detectable odor from the facility operation is allowed outside the property line. **Ammonia** • Ammonia concentration in biogas sent to the flare below 500 ppm. • Ammonia concentration after the biofilter below 55 ppm • pH of digestate limited to 8.5
PSCAA Order No. 10494 (4/1/2014)	Temporary Expansion of an existing Aerated Static Pile (ASP) and Mass Bed Composting Facility from 30,000 to 75,000 tons per year; of Agricultural Organics (Cow Manure, bedding, and Paunch), pre and post-consumer food waste, and yard waste.	**PM/Visible Emissions** ▪ Water mist system for wood grinder ▪ Shall not exceed 10% opacity for any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour **VOC/Odor** ▪ Biofilter for ASPs and tipping building. ▪ Daily odor inspections of the property. ▪ Material must be premixed for composting prior to leaving the tipping building. ▪ No storage of compost material at the end of each workday unless it is covered with a 6” biofilter media cap. ▪ Use of leachate collection and treatment system.

Origin	Description	Limitations
PSCAA Order No. 10455 (8/21/2012)	Composting System rated at 228,521 tons per year of pre and post-consumer food waste, yard, clean wood and land clearing wastes; consisting of (4) four - 41,000 ton per year Gore Composting Systems with the first phase of composting reduced from 28 to 21 days; a Tipping Building (with additional 100 ft x 50 ft apron canopy) for receipt, grinding, and mixing of feedstocks with a 24,000 cfm rated biofilter; and a Grinding Building (625 square foot) for grinding and mixing feedstocks to be equipped with a 900 square foot biofilter rated at 2,100 cfm exhaust flow.	**PM/Visible Emissions** ▪ Shall not exceed 10% opacity for any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour ▪ Water mist system for wood grinder **VOC/Odor** ▪ Biofilter for tipping building. ▪ Composting material must be covered for the gore cover composting system. ▪ Daily odor inspections of the property. ▪ Material must be premixed for composting prior to leaving the tipping building. ▪ Use of leachate collection and treatment system.

In addition to the Orders of Approval listed above, multiple composting facilities in the Agency's jurisdiction have been operating for many years without receiving any Notices of Violation for odors, which would indicate they are likely able to operate without odors beyond the property line. Examples include:

- 21331, Pierce County Recycling Composting & Disposal
- 29611, Hyponex
- 29147, Olympic Organics
- 18656, Riverside Topsoil

Additionally, for years the State of Washington's solid waste requirements have required commercial composting facilities to control nuisance odors to prevent migration beyond a facility's property boundaries. *See e.g.,* WAC 173-350-220.

Other Regulatory Agencies Requirements

California Air Districts

South Coast Air Quality Management District (SCAQMD) and San Joaquin Air Pollution Control District (SCAQMD) require air quality permits for some composting operations and have adopted composting facility-specific rules to complement the requirements of their NSR rules. These rules are summarized in the table below.

Table 2. California Permitting Rules for New and Existing Composting Operations

Air District	Relevant Rules	Emissions Limitations
SJVAPCD	Rule 4565 (animal manure, biosolids, poultry litter) & 4566 (organics); NSR Rule 2201	Mitigation measures based on wet-tons of material processed to achieve reductions of 19%, 60%, 80% VOCs.
SCAQMD	Rule 1133.2 (co-composting with biosolids and/or animal waste), Rule 1133.3 greenwaste only; NSR Regulation XIII, Rules 1304, 317	70% reduction by weight for existing operations, and 80% reduction by weight for new operations for VOCs and NH3 (Rule 1133.2); 80% reduction by weight for VOC and NH3 (Rule 1133.3)

SJVAPCD Composting Rules Summary

SJVAPCD Rule 4565 (Biosolids, Animal Manure, and Poultry Litter Operations) and SJVAPCD Rule 4566 (Organic Material Composting Operations) provide requirements for new and existing composting operations and related activities. Rule 4565 requires reductions of VOC emissions from biosolids (sewage sludge or wastewater), animal manure, and poultry litter composting and co-composting (biosolids/manure/litter mixed with other materials) operations. Rule 4566 requires VOC emission reductions from organic material (food, green, or a mixture thereof) composting operations. In addition to reducing VOC emissions, the measures and practices required by SJVAPCD Rules 4565 and 4566 also reduce ammonia (NH_3) emissions. Per Rule 4565, mitigation measures, for both the active and curing composting stages, are aiming at reducing VOC emissions from biosolids, animal manure, or poultry litter composting operations. The number of mitigation measures required depends on the facility's annual feedstock throughput. A list of all mitigation measures can be found in Table 2 of District Rule 4565.

- Composting of up to 20,000 wet-tons per year are required to implement at least three Class One mitigation measures.
- Composting between 20,000 and 100,000 wet-tons per year are required to implement at least four total mitigation measures (either four Class One measures or three Class One measures and one Class Two measure).
- Composting of 100,000 wet-tons per year or greater are required to implement four or five mitigation measures (depending on the measures chosen).
- Composting of less than 200,000 wet-tons per year are required to implement two mitigation measures or an alternative measure that demonstrates at least 19% VOC reduction.
- Composting between 200,000 and 750,000 wet-tons per year are required to implement either three mitigation measures or an alternative measure that demonstrates at least 60% VOC reduction.
- Composting 750,000 wet-tons per year or greater are required to implement a mitigation measure that demonstrates at least 80% VOC reduction.

Per Rule 4566, mitigation measures are aiming at reducing VOC emissions from organic material composting during the active stage. The number of mitigation measures required depends on the

facility's annual feedstock throughput. A list of all mitigation measures can be found in Table 1 of District Rule 4566.

- Composting of less than 200,000 wet-tons per year: for windrow composting only, implement at least 3 turns during the active-phase and one mitigation measure; or an Agency-approved alternative measure that demonstrates at least 19% VOC reduction.
- Composting between 200,000 and 750,000 wet-tons per year: for windrow composting only, implement at least 3 turns during the active-phase, one mitigation measure for watering systems, and the finished compost cover mitigation measure; or an Agency-approved alternative measure that demonstrates at least 60% VOC reduction.

Pursuant to SJVAPCD Rule 2201, add-on emission control devices may be required if a new or modified composting/co-composting operation triggers BACT. The SJVAPCD has established BACT guidelines relevant to the composting industry, which are summarized in the table below:

Table 3. SJVAPCD BACT Guideline Summary

Basis	Description	BACT/tBACT
SJVAPCD BACT Guideline 6.4.1 (4/3/1998)	Composted Materials – Screening, Transportable, Wood Waste Processing	**PM_{10}:** Use of a water sprinkler system or maintaining adequate moisture content of the process materials to prevent visible emissions in excess of 5% opacity.
SJVAPCD BACT Guideline 6.4.3 (7/16/2018)	Green Waste, Wood Waste, and Composted Material – Transfer & Screening	**PM_{10}:** Process materials with moisture content ≥25% and ≤30%; visible emissions not to exceed 5% opacity
SJVAPCD BACT Guideline 6.4.8 (12/19/2016)	Manure Composting Operations	**VOC:** Class One Mitigation Measures from District Rule 4565 (10% control) **NH_3:** Class One Mitigation Measures from District Rule 4565 (10% control)

SCAQMD Composting Rules Summary

SCAQMD 1133 series rules provide requirements for composting and related activities. SCAQMD Rule 1133.3 requires reductions of VOC and NH_3 emissions from green waste composting. For green waste composting, it includes three types of feedstock materials: green waste-only, green waste mixed with food waste, or green waste with up to 20% manure, by volume.

Either best management practices (BMPs) or add-on emission control devices are required to reduce VOC and NH_3 emissions from green waste composting windrows per Rule 1133.3, depending on the facility's feedstock throughput.

- Composting of green waste only, up to 20 volume % manure, or up to 5,000 tons per year (tpy) of food waste throughput:
    - Cover each active phase pile with finished compost (at least 6" thick) within 24 hours of formation.

- Apply water within 6 hours before turning, such that the top of the pile is wet at a depth of at least 3".
- Alternatively, implement a mitigation measure that demonstrates emission reductions of at least 40 wt% for VOC and at least 20 wt% for NH_3.

- Composting of greater than 5,000 tpy of food waste throughput:

  - Requires an add-on emission control device that has an overall system control efficiency of 80% or higher for VOC and NH_3 during the active phase (at least 22 days) of composting containing more than 10% food waste, determined by a source test.

Any relocation or any new or modified source which results in an emission increase of any non-attainment air contaminant, ozone depleting compound, or ammonia shall employ BACT. SCAQMD has interpreted the BACT provision as a 1.0 lb/day increase in emissions from all sources subject to NSR. Minor Source BACT requires compliance with SCAQMD Rule 1133.2 for composting. ASP composting systems with an appropriate emission control device may be considered as BACT.

Washington Department of Ecology

Table 4. Similar Permits Issued by WDOE & PSCAA

Origin	Operational and Design Limitations	
PSCAA Order No. 11935 (12/3/2020)	Commercial composting facility (maximum of 14,000 wet tons of feedstock per year) for recycling green yard waste, fish waste, pre-consumer food waste, and agricultural manure and bedding using Extended Aerated Static Pile composting technology. The compost operation consists of a tipping area, two Extended Aerated Static Pile composting bays with four zones each, concrete composting pad (100'x300'), curing piles, final product storage piles, and a leachate pond.	VOC/Organic HAP ▪ VOC removal efficiency of at least 75.0% across biofilter cover layer ▪ No detectable odor allowed at or beyond the facility's boundary Ammonia ▪ NH3 removal efficiency of at least 53.0% across biofilter cover layer ▪ No detectable odor allowed at or beyond the facility's boundary Particulate Matter • Visible emissions from grinding and screening shall not exceed 5% opacity for any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour as measured by WDOE Method 9A.

Origin	Operational and Design Limitations
WDOE Order No. 14AQ-C191 (9/17/2019)	Compost facility accepting up to 62,700 wet tons per year feedstock from industrial, institutional, and residential, sources. **PM/Visible Emissions** ▪ Grinding, mixing, and turning conducted with adequate moisture to prevent visible emissions ▪ Vehicle routes covered with crushed stone or paved and controlled w/ water or chemical dust suppressants **VOC/Odor** ▪ Negative aeration system collecting at least 98% of Stage 1 emissions ▪ Biofilter with at least 75.0% destruction for all collected VOC emissions and 21.8% destruction for all collected NH_3 emissions ▪ Unscreened compost cover (at least 12") applied to stockpiles at the end of each day ▪ Unscreened compost cover (at least 12") applied to compost piles ▪ Carbon to nitrogen ratio of 25:1 to 30:1 for feedstock prior to placement in compost bed ▪ Compost bed moisture content 55-65%

BACT for Other Source Categories with Potential Odor Emissions

Table 5. BACT Determinations for Source Categories with Potential Odor Emissions

Origin	Description	Limitations
PSCAA Order No. 11946 (8/21/2020)	Septage and biosolids processing facility consisting of one Dusky Shark septage and biosolids receiving/ screening station, eight septage and biosolids storage tanks (37,500 gallons each), Varcor septage and biosolids waste stream separation system (90 gallons per minute; including a preheater, degas tower, sludge dryer, and condensing units), one pelletizer, one convective dryer drag chain conveyor, dry material storage bay (20 ton capacity), and ammonia truck loading.	**VOC/Odor** ▪ Odor removal of ≥ 90% & H_2S removal of ≥ 99% using enclosed biofilter vessel. ▪ Building HVAC system equipped with carbon filtration system ▪ No detectable odor allowed at or beyond the facility's boundary
PSCAA Order No. 11955 (8/4/2020)	Establishment of a Tier 2 marijuana production and processing facility with a 10,000 square foot canopy. The facility is composed of five 2,000 square foot greenhouses containing the production and processing of marijuana.	**VOC/Odor** ▪ Use of carbon adsorption for odor control ▪ No detectable cannabis odors allowed at or beyond the property line.

Origin	Description	Limitations
PSCAA Order No. 11985 (6/19/2020)	Establishment of a Tier 2 marijuana production and processing facility with a 2,100 square foot canopy.	**VOC/Odor** ▪ Use of carbon adsorption for odor control ▪ No detectable cannabis odors allowed at or beyond the property line.
PSCAA Order No. 11939 (4/22/2020)	Four 400 Watt CO2 laser cutters (one MultiCam Laser Cutter 2000 Series and three Kern Model HSE lasers) for cutting and engraving of primarily acrylic products with some incidental cutting of wood and stainless steel products.	**VOC/Odor** ▪ Use of carbon adsorption system ▪ No detectable odor allowed at or beyond the facility's boundary
PSCAA Order No. 11846 (7/15/2019)	Food production facility including the following equipment: two existing 600 horsepower, 24.5 MMBtu/hr heat input capacity, Cleaver Brooks Scotch Marine firetube steam boilers; and four existing soup kettles and one new stock cooking vessel (900 gal)	**VOC/Odor** ▪ Use of packed-bed scrubber ▪ No detectable odor allowed at or beyond the facility's boundary

Analysis

Different types of emissions, including odorous emissions are generated during the various stages of the composting process, including, but not limited to, the following:

- Feedstock receiving and processing;
- Aerated Static Pile composting;
- Windrow (Stage 2) composting;
- Leachate collection, treatment, and storage; and
- General site conditions

For this emission source, BACT and RACT are the same given that the controls chosen by Lenz meet the definition of RACT as well as BACT. RACT/BACT for each of these stages is analyzed in detail below.

1. **Feedstock Receiving and Processing**
   Feedstocks are unloaded at the southeast corner of the receiving building, where an air handling system is used to exhaust air through a biofilter. According to the NOC application, the material is evaluated as it is delivered to assess the necessary bulking agents that will be required. Mixing and grinding also occur within the tipping building and bulking agents are added when the mixture is moved out of the tipping building.

   BACT/RACT for feedstock receiving and processing will be achieved using a designated tipping building for receiving material with a negative ventilation system to capture and route emissions to a biofilter. Additionally, mixing and grinding of material must occur within the tipping building except for bulking agents which are added outside the tipping building. The BACT requirements for biofilter performance are discussed in Item 2 below (ASP Composting) and are also applicable to feedstock receiving and processing. Based on the design of the tipping building and the ventilation system, the building is not expected to capture 100% of emissions from material being stored in the building. Therefore, as part of the BACT/RACT determination, Lenz will also be required to process all feedstock received by the end of the workday, except in the rare event of primary and back-up equipment failure. This work practice requirement is expected to reduce the potential for emissions from the tipping building.

2. **Aerated Static Pile (ASP) Composting**
   Lenz has established ranges for various parameters (e.g., food waste percentage, carbon to nitrogen ratio, bulk density, etc.) to achieve a desired initial mix for composting. Once the material is transferred to the ASP, a computerized system is used to continuously monitor the temperature of the piles. Material will be processed in new and existing ASPs for a retention time between 10 and 15 days. Lenz is proposing to use the following management practices to control VOC, organic HAP, ammonia, and other odors during ASP composting in the new and existing piles:

   - Mixing compost to specific design parameters.

- Monitoring of ASP to maintain appropriate moisture content, oxygen content, pH, and temperature.
- All ASPs covered with a minimum 12" layer of biofilter material.
- Negative aeration with emissions controlled by biofilters.

This Order of Approval will establish requirements for the initial construction of the new and existing ASPs, including required ranges for carbon-to-nitrogen ratio, bulk density, and percent food waste:

- Carbon-to-Nitrogen Ratio: Page 18 of *Industrial Composting* states, "the composting process is effective within carbon-to-nitrogen ratios of 22 to 40." Page 146 of *Industrial Composting* also states, "Feedstocks with low carbon-to-nitrogen ratios (lower than 20:1) will release ammonia during composting." Lenz indicated that the target carbon-to-nitrogen ratio for the feedstock mix is 20:1 to 40:1.[11] This range will be established as a requirement for the initial construction of each ASP.

- Bulk Density: Lenz's Plan of Operation (pg. 60) indicates that "the optimal initial density for composting is approximately 800 to 900 pounds per cubic yard".[12] However, Table 3 (pg. 13) of the Plan of Operation indicates that the mix goal is 850 to 950 lbs/yd^3. A bulk density upper limit of 950 lb/yd^3 will be established as a requirement for the initial construction of each ASP.

- Each ASP will be required to contain no more than 14.0% food waste by weight. See Section F for additional discussion of the basis of this requirement.

This Order of Approval will also establish required operating ranges for new and existing ASPs during Stage 1 composting, including moisture content, temperature, pH, and oxygen levels. In conversations with the applicant they stated that these ranges were developed for ASPs where the active composting process has established itself. The ASPs can be outside these ranges during the initial 48-72 hours after construction as the biodegradation process begins. The conditions allow for these initial periods to allow the process to stabilize. The ranges in the conditions are as follows:

- Moisture Content: Lenz indicated that the target moisture range during Stage 1 composting after the first 48 hours is 35% to 65%. This operating range will be established as a condition in this Order of Approval.

- Temperature: Lenz indicated that the target temperature range during Stage 1 composting after the first 48 hours for the new ASPs is between 45 and 70°C. This operating range will be established as a condition in this Order of Approval, and the temperature of the ASPs will be required to be monitored hourly. The Agency received comments during the public notice period from Lenz that indicated this range was not wide enough to accommodate normal operations of the existing ASPs under full negative aeration due to their original design. The range for the existing ASPs was

[11] See Appendix A, "Lenz Permit Modification Application_PSCAA_2018.pdf"

changed to require that it not exceed 80°C over a 14-day average and not exceed 100°C as a 24-hour average in response to this comment.

- pH: Lenz indicated that the target pH range during Stage 1 composting is between 6.5 and 8.0. However, Lenz's Plan of Operation indicates that the ideal pH range is 6.5 to 8.5 and that thermophilic bacteria are inhibited by low pH conditions (< 6).[12] Therefore, a required pH range of 6.0 to 8.5 after the first 72 hours will be established as a condition in this Order of Approval. During the first 72 hours after construction, the pH in the pile may vary outside this range and is not a parameter that can be controlled according to the applicant.
- Oxygen: Page 124 of *Industrial Composting* indicates that oxygen levels should range between 10 and 18% in aerated systems. Page 86 of *Industrial Composting* states, "The aeration system must be designed to provide uniform and oxygen levels exceeding 10% throughout the mass." Therefore, a required oxygen minimum of 10% will be established as a condition in this Order of Approval.
- Cover Layer Thickness: each pile is required to be covered with a 12-inch layer of ground wood residuals, finished compost, or compost screen overs.[12] WDOE Order No. 14AQ-C191 (9/17/2019) requires that a 12 inch cover be applied after compost bed placement. Therefore, during Stage 1 composting, each aerated static pile will be required to be covered with at least 12 inches of biofilter media.

Lenz will control emissions from the new and existing ASPs using negative aeration to biofilters. Biofilters have been used for odor removal for many years. It is critical for the biofilter to be operated within appropriate operational ranges and to have sufficient monitoring and regular testing to demonstrate the biofilter is in good working order and the media's surface area is actively contacting emissions. The media must be actively sustaining bacterial cultivation and growth and maintaining a healthy population of bacteria. Research is available that gives us a better understanding of what criteria must be met for the biofilter to operate efficiently:

- Moisture content: Williams and Miller[13] (1992) report that bed moisture is the single most important parameter for biofilter viability – optimal moisture contents varied from 20% to 60%. Lenz's Plan of Operation (pg. 65) indicates that a design setpoint of 50% moisture is used.[14] Lenz commented on moisture content and how they propose to build and maintain the most efficient biofilter as shown below. The order of approval does not require a specific moisture content for the biofilters. However, Lenz must follow their O&M plan and maintain and operate the biofilter in a way that ensures they will continue to meet 98% control of VOC and 80% control of ammonia. Conformance with these requirements will be shown through regular testing of the biofilters. Lenz' comment is pasted in below:

  > "The moisture content of a biofilter becomes a gradient from inside to outside due to moisture retention and how the biofilter is moistened to facilitate water-film layer emissions control at the surface; and the level of moisture content of the air

[12] See Appendix A, "LENZ_COMPOST_POO_150k_2019.pdf"
[13] Williams, T.O. and F.C. Miller. 1992. Odour control using biofilters. BioCycle 33(10): 72-77.
[14] See Appendix A, "LENZ_COMPOST_POO_150k_2019.pdf"

coming from the ASPs. This condition only becomes more enhanced as a deeper biofilter (which will control emissions more effectively) is used. This condition actually restricts Lenz's ability to build the most efficient biofilter system." (Quoted from an attachment to an email dated January 7, 2021 at 12:13 PM from Edward Wheeler to Carole Cenci and John Dawson)

- Temperature: According to Leson and Winer[15] (2012) specified a temperature between 20 and 40 degrees C should be maintained at the inlet air to the biofilter. Frederickson et al (2013) indicated optimum microorganism performance when biofilter operated between 30 and 40 degrees C. Lenz has indicated that they maintain a biofilter media temperature between 10°C and 45°C. This range is slightly larger than what is cited in the references above. As mentioned above, higher temperatures can result in a higher biodegradation rate. Temperature is not an explicit parameter required in the Order of Approval. However, Lenz must follow their O&M plan and maintain and operate the biofilter in a way that ensures they will continue to meet 95% control of VOC and 80% control of ammonia. Conformance with these requirements will be shown through regular testing of the biofilters. Lenz' comment is pasted in below:
- Oxygen: The applicant identified oxygen levels in the biofilters as an important parameter for proper operation, specifically that there is a lower floor below which the biofilters will not be functioning properly. The OA conditions require the oxygen levels to be at or above 10%.
- Depth, residence time, static pressure and vegetation: The Order of Approval includes a minimum bed depth requirement (at least 4 feet), a minimum residence time (at least 40 seconds), and an allowable static pressure range that will be established by the manufacturer of the biofilter. These parameters will be some of the parameters that will help detect potential degradation. The Order of Approval also requires that Lenz does not allow vegetation growth on the biofilters.

Porosity is also a key operating parameter but a search of literature indicates a broad range so this has not been included in this permit.

Another key parameter found to be important for achieved odor removal is media replacement. It was suggested that media be replaced after 4 years continuous operation (Colon et al.[16] (2009)), however the frequency at which it needs to be changed will vary for each biofilter. Traditional biofilters typically use a combination of wood chips, bark, and compost as media. To evaluate the biofilter media, this permit requires routine monitoring of new and existing biofilter static pressure in each duct between the fan and each biofilter. A higher than normal static pressure would indicate the biofilter is clogged or too compacted. This information will be required to be used in determining appropriate measures Lenz must take to ensure proper biofilter operation, including replacing the media.

[15] Leson G & Winer AM (2012) Biofiltration: an innovative air pollution control technology for VOC emissions. Journal of A&WMA, 41, 8, pp 1045-1054.
[16] Colon J. et al (2009) Performance of an industrial biofilter from a composting plant in the removal of ammonia and VOCs after material replacement. Journal of Chemical Technology and Biotechnology.

Lenz has indicated that the new and existing biofilters will be able to achieve 95% control of VOC emissions,[17] and this assumption is used for the potential project and facility-wide emission calculations (see Section F of this worksheet). Therefore, a limit will be established by this Order of Approval requiring each new and existing biofilter to achieve at least 95.0% reduction of VOC emissions. The new and existing biofilters will also be required to achieve at least 80.0% removal of ammonia, consistent with SCAQMD Rule 1133.3.

In addition, the negative aeration systems for both the new and existing ASPs will be required to achieve at least 98% capture of VOC and ammonia emissions, which will all be routed to and controlled by a biofilter. All ASPs will be required to operate only in a negative aeration mode. This capture efficiency is consistent with the assumption used for WDOE's Order No. 14AQ-C191. To control uncaptured emissions, Lenz will be required to cover each new and existing ASP with at least 12" of biofilter material.

This permit will require monitoring of oxygen, bed depth, bed residence time, and static pressure to verify biofilter performance. In addition, Lenz will be required to conduct performance testing after startup and every calendar quarter to verify that all biofilters are meeting the required removal efficiencies.

3. **Windrow Composting**
During the windrow stage of composting, the bed will be turned at least every 7 days to ensure that proper oxygen, moisture, and porosity levels are maintained. Lenz is proposing to use the following management practices to control odors during windrow composting:

- Mixing compost to specific design parameters.
- Monitoring of bed to maintain appropriate temperatures, minimize temperature fluctuations, and maintain appropriate moisture content.
- Turning the bed at least every 7 days.

Lenz will be required to maintain a moisture content of 40% to 65% during the entirety of the Stage 2 composting process (the windrows).

4. **Mass Bed Curing**
Curing occurs for some materials based on the ultimate use of the final product, but curing is not required for all products. This material may be screened or unscreened, and these piles may or may not be turned. The curing piles are expected to be a smaller source of VOC and odor emissions than the Stage 1 and Stage 2 composting operations. Consistent with the Stage 2 windrows, Lenz will be required to maintain a moisture content of 40 to 65%.

5. **Leachate Collection, Treatment, and Storage**
Lenz uses a leachate treatment system with the following equipment and processes to reduce the potential for odors from collected and stored leachate (as stated in the NOC application):

- Collected leachate drains through conveyance piping to deliver leachate to the treatment system in a timely manner.

[17] See Appendix C, "20200104_Lenz Response to PSCAA Compost App review 122019.pdf"

- A leachate collection tank with coarse bubble diffusion is used to ensure that aerobic conditions persist in the collection tank.
- A chopper pump is used to transfer water from the leachate collection tank to minimize downtime and ensure proper solids sizing for treatment.
- A rotary drum screen (RDS), with a 0.02-inch wedgewire screen is used to separate the majority of solids collected with the leachate.
- A fully-programmable, automatically controlled Modified Sequential Batch Reactor (MSBR), with fine bubble diffusion is used to reduce Biological Oxygen Demand (BOD), and Total Suspended Solids (TSS). The treatment of this water significantly reduces the potential of odors from collection of leachate.
- Only leachate that has been treated is stored in the lagoon to reduce the potential for odors.

This Order of Approval will require Lenz to route standing water and water runoff from the tipping building and the compost pads to the leachate collection and treatment system. Leachate (treated or untreated) from the compost facility may not be used for dust suppression, but may be used for moisture addition during feedstock preparation or moisture addition during the composting process. Excess leachate that has been treated may be stored in the on-site lagoon.

6. General Site Conditions

Lenz is proposing to use the following management practices to control odors and fugitive dust emissions:

- Continual assessment and housekeeping to cleanup and dispose of waste in a timely manner.
- Regular compost technician walk-through inspections and cleanings of the facility.
- Regular site management inspections.
- Timely spill and debris clean up action.
- Regular use of a sweeper truck to clean surfaces.

To satisfy BACT, no detectable odor shall be allowed at or beyond the facility's boundary. Grinding, mixing, and turning must be conducted with adequate moisture to prevent visible emissions. Consistent with SJVAPCD BACT Guidelines 6.4.1 and 6.4.3, visible emissions from grinding and screening shall not exceed 5% opacity for any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour, as measured by WDOE Method 9A. Per the Agency's Article 9, Section 9.15, vehicle routes must be controlled with water or chemical dust suppressants adequate to prevent visible emissions. Lenz will be required to perform facility-wide inspections for odor and visible emissions and conduct corrective action if either is detected.

BACT/RACT Recommendations

Table 6. BACT/RACT Summary

Emission Unit	Pollutants	BACT/RACT Limits (applies to all pollutants listed)	OA Conditions Implementing BACT/RACT
Feedstock Receiving and Processing	VOC, ammonia, odor, HAPs/TAPs	• VOC removal efficiency of at least 95.0% across biofilters. • No detectable odor allowed at or beyond the facility's boundary • Must be done in tipping building with negative ventilation system and routed to biofilter • Grinding and mixing (except for bulking agents) occurs in tipping building • Process all feedstock by end of each workday (VOC, HAPs/TAPs & odor only). Or in the case of primary and back-up equipment failure, remaining material must be stored in the southeast corner of tipping building	Conditions: 1, 4, 5, 7-12, 14, 17, 26-30, 34, 36-40
	Particulate	• Visible emissions from grinding and screening shall not exceed 5% opacity for more than 3 minutes in any hour	Condition: 1, 6, 11, 13, 33, 36, 37, 39-40

Emission Unit	Pollutants	BACT/RACT Limits (applies to all pollutants listed)	OA Conditions Implementing BACT/RACT
Aerated Static Pile Composting	VOC, Odor, Ammonia, HAPs/TAPs	• Capture efficiency of all emissions from the ASPs of at least 98%. • VOC, including volatile HAPs and TAPs, removal efficiency of at least 95.0% across biofilters. • Ammonia removal efficiency of at least 80% across biofilters • No detectable odor allowed at or beyond the facility's boundary	1, 3-5, 7-12, 15-19, 20-37, 38-40
	Particulate	• ASPs covered with minimum 12-inch layer of biofilter material	1, 16f)
Windrow Composting	VOC, Odor, Ammonia, HAPs/TAPs	• No detectable odors beyond the property line	1, 5, 25, 34,36, 37, 39, 40
	Particulate	• Minimize fugitive dust	18, 33, 36, 39-40
Leachate Collection, treatment, and storage	Odor	• No detectable odors beyond the property line	1, 5, 14, 34

F. EMISSION ESTIMATES

Proposed Project Emissions

VOC emissions from the compost expansion were estimated using VOC emission factor information collected and reviewed by the Agency in 2014. That information relied on numerous references but used a significant portion of the information collected in California. That information and subsequent rulemaking by SCAQMD and SJVAPCD were included in the California SIP revision package approved by EPA (see FR November 29, 2012, pp. 71129-71131). The Agency VOC technical report on composting is embedded below

Final Report - Compost VOC EF.docx

For this case, Lenz is proposing to control VOC and odor emissions from the composting operation using covered ASPs with negative aeration to biofilters. In addition, the ASPs will be constructed with no more than 14.0% food waste. Therefore, an uncontrolled VOC emission factor of 5.7 lb/ton for greenwaste composting is used (see Table 1 of the Agency technical report above). Lenz has indicated that this ASP system with negative aeration to biofilter will capture 98% of emissions and achieve a 95% reduction of emissions in the biofilters, which Lenz will be required to verify on a recurring basis through testing. This 95% control is applied to the VOC emission calculations for ASP composting.

Ammonia emission factors used for the calculations are based on data presented in SJVAPCD's 2010 compost emission factor report. These uncontrolled emission factors are consistent with the factors used for Order No. 14AQ-C191 issued by WDOE. An 80% control efficiency is applied to the NH_3 emission calculations for ASP composting, which is consistent with the requirement in SCAQMD Rule 1133.3 for composting operations with greater than 5,000 tons per year food waste. This ammonia control efficiency will be established as a permit requirement by this Order of Approval. Lenz has indicated that this ASP system with negative aeration to biofilter will capture 98% of ammonia emissions.

The calculations provided by the applicant assume 90% of the uncontrolled VOC emissions from the compost process will be emitted during ASP composting and the remaining 10% of the emissions will be emitted from the windrow/mass bed composting. According to the applicant's "Air Quality Technical Report 2nd Addendum" (Appendix D), emissions were calculated "assuming that 90% of emissions happen in the active composing phase (i.e., from the engineered biofilters), and the remaining 10% from the windrows." The Agency was able to identify references that state that 90% of VOC emissions occur

during the active stage of composting and 10% occur during the curing stage, including SJVAPCD's compost emission factor report.[18,19]

Lenz will be required to meet at least a Solvita® Maturity Index of 3.5 or greater prior to moving material from Stage 1 to Stage 2 of the composting process.

Toxic air pollutant (TAP) emissions (except ammonia, methanol, and acetaldehyde) were calculated based on sampling conducted at the Lenz facility by the Washington Department of Ecology in June 2013. Concentration measurements were taken at the following locations:

- ASP biofilter (south biofilter)
- ASP & tipping building biofilter (north biofilter)
- Fresh ASP
- 7-Day ASP
- Mass bed
- Finished pile

For emission sources where multiple samples were taken, the maximum of all samples was used to estimate TAP emissions. Methanol was not measured during the June 2013 sampling, and the maximum acetaldehyde measurement during the sampling was an outlier. Therefore, methanol and acetaldehyde emissions were calculated by multiplying the total VOC emissions by the weight percentage from EPA's SPECIATE tool for composting (12.79% for methanol and 0.14% for acetaldehyde).

The applicant provided updated emission calculations via email on March 12, 2020 (see Appendix D). The Agency made the following updates to the March 2020 calculations provided by the applicant:

- The calculations provided by the applicant assumed 100% capture of emissions from the ASPs with the negative aeration system. The calculations were updated to assume a 98% capture efficiency, consistent with Order No. 14AQ-C191 issued by WDOE.
- The maximum stockpile time was updated from 0.25 days (6 hours) to 0.5 days (12 hours). This was updated to be consistent the feedstock receiving and processing window indicated in the application (7am – 5:30pm), with a small buffer. This is also being established as a condition in this Order of Approval.
- The applicant assumed a 19% VOC control efficiency for the Stage 2 windrows. Per the SJVUAPCD Final Draft Staff Report for Proposed New Rule 4566 (8/18/2011), "Data from the San Joaquin Valley Air Pollution Study Agency's (Study Agency) field study showed that the watering system would provide a 19% reduction in VOC emissions during the active phase." Since the magnitude of emissions is lower during the windrow stage (compared to the Stage 1 ASPs), a 19% reduction may not be achievable from watering alone. Therefore, the 19% control efficiency was removed from the calculations.
- The measured concentrations of speciated HAP and TAP were converted to a mass emission rate basis using the following formula,[20]

[18] San Joaquin Valley Air Pollution Control District, "Compost VOC Emission Factors" (9/15/2010).
[19] Authority to Construct for Permit Application No. 26437, Plant No. 2066 (issued 9/21/2017).
[20] Jobson, T., Khosravi, N., "Emissions from Washington State Compost Facilities: A Review of Volatile Organic Compound Data, and an Estimation of Greenhouse Gas Emissions" (November 2019, updated February 2020)

$$flux\ density\ \left(\frac{\mu g}{m^2 min}\right) = conc.\left(\frac{\mu g}{m^3}\right)\ x\ air\ flow\ rate\left(\frac{m^3}{min}\right) x\ \left(\frac{10\%\ He}{\%\ He_{sample}}\right) / area\ (m^2)$$

where the air flow rate measured during the testing was 5 L/min (0.005 m^3/min) and the surface area sampled by the chamber was 0.13 m^2.

- For the HAP/TAP calculations, since the surfaces of the ASPs were not measured while under negative aeration during the Ecology sampling, emissions from the surfaces of the ASPs (uncaptured by negative aeration) were back calculated assuming a 98% capture efficiency of the negative aeration system, 95% control efficiency for the biofilter, and 75% control efficiency for the biofilter layer on the ASP. This 75% control efficiency for the biofilter layer is based on the Agency's VOC technical report on composting.

The updated calculations are provided below:

11753css Emissions.xlsx

The permitted potential emissions are calculated based on the increase from 75,000 tons of feedstock per year to 150,000 tons of feedstock per year. The facility expects to operate near this limit of 150,000 tons of feedstock per year, so actual project emissions are assumed to be equal to potential project emissions.

Table 7. Project VOC and HAP Emission Summary

Emission Source	Project Increase in Potential VOC Emissions (tpy)	Project Increase in Potential Total HAP Emissions (tpy)	Project Increase in Potential Single HAP (Methanol) Emissions (tpy)
Covered ASPs/Biofilter	10.39	1.62	1.59
Windrows	21.38	6.40	2.73
Stockpiling	2.06	Included above	Included above
Total	33.83	8.02	4.33

Table 8. Project Speciated Emission Summary

Pollutant	CAS Number	Potential Project Emissions (tpy)			
		Biofilter	ASP	Mass Bed	Finished
Propene	115-07-1	3.41E-02	3.48E-03	4.70	2.47E-03
Dichlorodifluoromethane	75-71-8	0.00E+00	0.00E+00	0.00	1.94E-04
Chloromethane	74-87-3	0.00E+00	0.00E+00	0.08	0.00E+00
1,3-Butadiene	106-99-0	0.00E+00	0.00E+00	0.01	0.00E+00
Ethanol	64-17-5	0.00E+00	0.00E+00	2.26	0.00E+00
Acetonitrile	75-05-8	3.12E-03	3.18E-04	0.11	1.18E-03
Acetone	67-64-1	0.00E+00	0.00E+00	4.29	2.83E-03
Trichlorofluoromethane	75-69-4	0.00E+00	0.00E+00	0.00	3.53E-04
Methylene Chloride	75-09-2	0.00E+00	0.00E+00	0.00	0.00E+00
Vinyl Acetate	108-05-4	0.00E+00	0.00E+00	1.87	0.00E+00
2-Butanone (MEK)	78-93-3	0.00E+00	0.00E+00	2.53	0.00E+00
Ethyl Acetate	141-78-6	0.00E+00	0.00E+00	0.00	0.00E+00
n-Hexane	110-54-3	0.00E+00	0.00E+00	0.05	2.30E-04
Benzene	71-43-2	0.00E+00	0.00E+00	0.04	2.65E-04
n-Heptane	142-82-5	0.00E+00	0.00E+00	0.08	0.00E+00
4-Methyl-2-pentanone	108-10-1	0.00E+00	0.00E+00	0.06	0.00E+00
Toluene	108-88-3	7.57E-03	7.73E-04	0.07	0.00E+00
n-Octane	111-63-9	0.00E+00	0.00E+00	0.07	0.00E+00
Ethylbenzene	100-41-4	0.00E+00	0.00E+00	0.00	0.00E+00
m,p-Xylenes	179601-23-1	0.00E+00	0.00E+00	0.00	0.00E+00
Styrene	100-42-5	0.00E+00	0.00E+00	0.08	0.00E+00
n-Nonane	111-84-2	0.00E+00	0.00E+00	0.24	0.00E+00
alpha-Pinene	80-56-8	6.94E-01	7.08E-02	25.73	3.00E-04
d-Limonene	5989-27-5	4.23E-01	4.32E-02	19.49	1.59E-04
Carbonyle Sulfide	463-58-1	0.00E+00	0.00E+00	0.08	0.00E+00
Methyl Mercaptan	74-93-1	0.00E+00	0.00E+00	0.20	0.00E+00
Dimethyl Sulfide	75-18-3	0.00E+00	0.00E+00	2.81	0.00E+00
Carbon Disulfide	75-15-0	0.00E+00	0.00E+00	0.04	0.00E+00
Formaldehyde	50-00-0	0.00E+00	0.00E+00	0.26	0.00E+00
Propionaldehyde	123-38-6	0.00E+00	0.00E+00	0.90	0.00E+00
Butyraldehyde	123-72-8	0.00E+00	0.00E+00	0.86	0.00E+00
Benzaldehyde	100-52-7	0.00E+00	0.00E+00	0.97	0.00E+00
Isovaleraldehyde	590-86-3	0.00E+00	0.00E+00	1.01	0.00E+00
Valeraldehyde	110-62-3	0.00E+00	0.00E+00	0.03	0.00E+00
o-Tolualdehyde	529-20-4	0.00E+00	0.00E+00	0.05	0.00E+00
n-Hexaldehyde	66-25-1	0.00E+00	0.00E+00	0.09	0.00E+00
2,5-Dimethylbenzaldehyde	5779-94-2	0.00E+00	0.00E+00	0.00	0.00E+00
Methanol	67-56-1	1.47	0.12	2.73	-
Acetaldehyde	75-07-0	0.016	0.001	0.030	-
Ammonia	7664-41-7	5.57	0.25	11.36	-

Facility-wide Emissions

The facility expects to operate near this limit of 150,000 tons of feedstock per year, so actual facility-wide emissions are assumed to be equal to potential facility-wide emissions. The same emission controls (ASP with negative aeration to a biofilter) will be used for both the existing compost area and the new

compost area, so the same assumptions are used for calculating the facility-wide emissions (based on 150,000 tons of feedstock per year).

Table 9. Facility-Wide Emission Summary

Emission Source	Facility-wide Potential VOC Emissions (tpy)	Facility-wide Potential Total HAP Emissions (tpy)	Facility-wide Potential Single HAP (Methanol) Emissions (tpy)
Covered ASPs/Biofilter	20.78	3.24	3.18
Windrows	42.75	12.80	5.47
Stockpiling	4.13	Included above	Included above
Total	67.65	16.04	8.65

Reporting Source? Yes. VOC, total HAP, and individual HAP emissions from the facility are expected to exceed reporting thresholds.

G. OPERATING PERMIT OR PSD

The Title V Air Operating Permit (AOP) program applicability for the entire source has been reviewed. Facility-wide potential VOC emissions will be 67.65 tons per year (see Table 9 above), which is less than the 100 ton per year threshold for Title V applicability. Facility-wide potential total HAP emissions will be 16.04 tons per year (see Table 9 above), which is less than the 25 ton per year threshold for Title V applicability. Facility-wide potential single HAP (methanol) emissions will be 8.65 tons per year (see Table 9 above), which is less than the 10 ton per year threshold for Title V applicability. Therefore, the facility is not a Title V air operating permit source because post project PTE remains below Title V applicability thresholds and criteria. The source is considered a "**natural minor**". However, the facility-wide potential emissions calculated for this facility are dependent on the assumptions described in Section F of the worksheet. If any of these assumptions is determined to be inaccurate, the facility-wide potential emission calculations will need to be updated, and the Title V applicability will need to be reassessed.

Emission increases associated with this project were reviewed for Prevention of Significant Deterioration (PSD) Program applicability. The facility is not an existing PSD major source and the increase in emissions from this permitting action is below PSD thresholds.

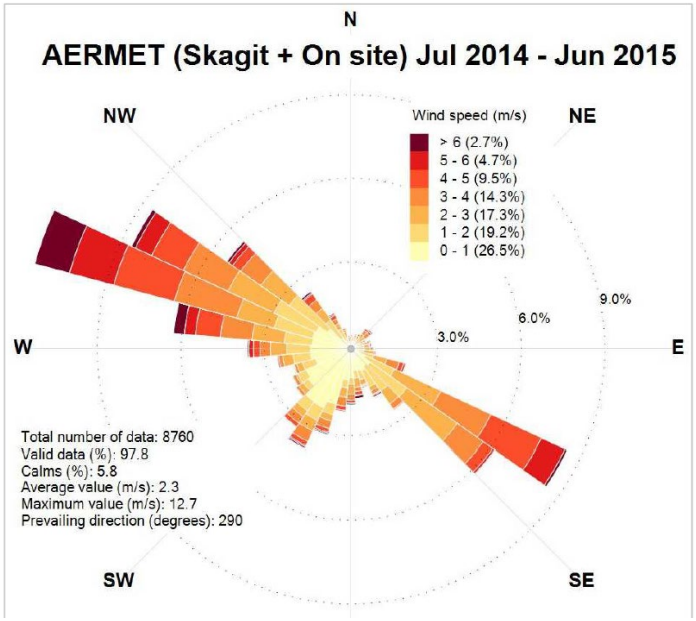
H. AMBIENT TOXICS IMPACT ANALYSIS

The estimated potential toxic air pollutant (TAP) emission increases are calculated based on the increase from 75,000 tons of feedstock per year to 150,000 tons of feedstock per year. The table below includes estimated potential emissions of all TAP and compares those to the Small Quantity Emission Rates (SQER) in WAC 173-460-150.

Table 10. TAP Analysis

Pollutant	SQER (lb/avg. period)	Averaging Period	Project Emissions (lb/avg. period)	% of SQER
Propene	220	24-hr	25.96	11.80%
Chloromethane	6.7	24-hr	0.45	6.69%
1,3-Butadiene	5.4	year	11.14	206.29%
Acetonitrile	4.4	24-hr	0.61	13.78%
Methylene Chloride	9800	year	0.00	0.00%
Vinyl Acetate	15	24-hr	10.25	68.35%
2-Butanone (MEK)	370	24-hr	13.88	3.75%
n-Hexane	52	24-hr	0.26	0.51%
Benzene	21	year	77.57	369.40%
4-Methyl-2-pentanone	220	24-hr	0.31	0.14%
Toluene	370	24-hr	0.43	0.12%
Ethylbenzene	65	year	1.91	2.93%
Styrene	65	24-hr	0.43	0.66%
Carbonyl Sulfide	0.74	24-hr	0.45	60.62%
Carbon Disulfide	59	24-hr	0.21	0.36%
Formaldehyde	27	year	514.56	1905.78%
Propionaldehyde	0.59	24-hr	4.91	832.67%
Methanol	1500	24-hr	23.71	1.58%
Acetaldehyde	60	year	94.71	157.85%
Ammonia	37	24-hr	94.15	254.47%

For some TAPs, the potential emission increase exceeds the SQER. An air dispersion modeling analysis was conducted using AERMOD and one year of meteorological data from Lenz's onsite meteorological station processed using the latest version of AERMET. In addition to these data, surface data from Skagit County Regional Airport and upper air data from Quillayute Airport were used to create the AERMOD-ready meteorological files. The applicant provided the following wind rose for the data:



The following ambient air boundary was used for the modeling analysis. Using the Snohomish County's Online Property Information (SCOPI) web viewer, the Agency confirmed that these parcels are owned by Lenz. Based on information received from Lenz on January 6, 2020, Lenz uses fencing, signage, video surveillance, and security personnel to preclude public access to the facility.

The applicant provided modeling files via email on March 12, 2020. The Agency made the following updates to the modeling files provided by the applicant:

- The model setup assumed that emissions were distributed across the newly constructed sources at the facility and the existing sources. Since the modeled emissions are based on the increase in emission due to the project, the modeled sources were updated to reflect only the new sources of emissions associated with the project, or existing sources that will experience an increase in emissions due to the project (e.g., additional stockpiling emissions going through the existing Biofilter 1). The updated modeled sources are shown in the figure below:

- In the model emission rate calculations provided by the applicant, it assumed that the stockpiling emissions are evenly distributed among the biofilters. Since the stockpiling emissions exit from Biofilter 1 only, the Biofilter 1 source was updated to be modeled with all of the emissions from stockpiling apportioned to it.

- The locations of Biofilter 3 (BF3) and Biofilter 4 (BF4) were adjusted slightly to align more closely with the updated plot plan received from the applicant on January 23, 2020.

- The onsite receptors included in the submitted modeling files were removed for clarity. Only offsite impacts were reviewed in this analysis.

The results of the modeling analysis are presented below. Lenz complied with the requirements of the Agency's and Department of Ecology's review of toxic air pollutants as required by WAC 173-460. All of the modeled impacts are below the corresponding acceptable ambient source impact level (ASIL). The Agency's final modeling files are included in Appendix F of this worksheet.

Table 11. Modeled Impacts

Pollutant	ASIL (µg/m³)	Averaging Period	Model Conc. (µg/m³)	% of ASIL
1,3-Butadiene	3.30E-02	year	0.003	10.30%
Benzene	1.30E-01	year	0.02	18.24%
Formaldehyde	1.70E-01	year	0.16	92.41%
Propionaldehyde	8.00E+00	24-hr	4.00	50.03%
Acetaldehyde	3.70E-01	year	0.04	10.00%
Ammonia	5.00E+02	24-hr	51.65	10.33%

I. APPLICABLE RULES & REGULATIONS

Puget Sound Clean Air Agency Regulations

SECTION 5.05 (c): The owner or operator of a registered source shall develop and implement an operation and maintenance plan to ensure continuous compliance with Regulations I, II, and III. A copy of the plan shall be filed with the Control Officer upon request. The plan shall reflect good industrial practice and shall include, but not be limited to, the following:
(1) Periodic inspection of all equipment and control equipment;
(2) Monitoring and recording of equipment and control equipment performance;
(3) Prompt repair of any defective equipment or control equipment;
(4) Procedures for startup, shut down, and normal operation;
(5) The control measures to be employed to ensure compliance with Section 9.15 of this regulation; and
(6) A record of all actions required by the plan.
The plan shall be reviewed by the source owner or operator at least annually and updated to reflect any changes in good industrial practice.

SECTION 6.09: Within 30 days of completion of the installation or modification of a stationary source subject to the provisions of Article 6 of this regulation, the owner or operator or applicant shall file a Notice of Completion with the Agency. Each Notice of Completion shall be submitted on a form provided by the Agency, and shall specify the date upon which operation of the stationary source has commenced or will commence.

SECTION 9.03: (a) It shall be unlawful for any person to cause or allow the emission of any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour, which is:
(1) Darker in shade than that designated as No. 1 (20% density) on the Ringelmann Chart, as published by the United States Bureau of Mines; or
(2) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Section 9.03(a)(1).
(b) The density or opacity of an air contaminant shall be measured at the point of its emission, except when the point of emission cannot be readily observed, it may be measured at an observable point of the plume nearest the point of emission.

(c) This section shall not apply when the presence of uncombined water is the only reason for the failure of the emission to meet the requirements of this section.

SECTION 9.09: General Particulate Matter (PM) Standard. It shall be unlawful for any person to cause or allow the emission of particulate matter in excess of the following concentrations:
Equipment Used in a Manufacturing Process: 0.05 gr/dscf

SECTION 9.11: It shall be unlawful for any person to cause or allow the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property.

SECTION 9.13: It shall be unlawful for any person to cause or allow the installation or use of any device or use of any means designed to mask the emission of an air contaminant which causes detriment to health, safety or welfare of any person.

SECTION 9.15: It shall be unlawful for any person to cause or allow visible emissions of fugitive dust unless reasonable precautions are employed to minimize the emissions. Reasonable precautions include, but are not limited to, the following:
(1) The use of control equipment, enclosures, and wet (or chemical) suppression techniques, as practical, and curtailment during high winds;
(2) Surfacing roadways and parking areas with asphalt, concrete, or gravel;
(3) Treating temporary, low-traffic areas (e.g., construction sites) with water or chemical stabilizers, reducing vehicle speeds, constructing pavement or rip rap exit aprons, and cleaning vehicle undercarriages before they exit to prevent the track-out of mud or dirt onto paved public roadways; or
(4) Covering or wetting truck loads or allowing adequate freeboard to prevent the escape of dust-bearing materials.

REGULATION I, SECTION 9.20(a): It shall be unlawful for any person to cause or allow the operation of any features, machines or devices constituting parts of or called for by plans, specifications, or other information submitted pursuant to Article 6 of Regulation I unless such features, machines or devices are maintained in good working order.

Washington State Administrative Code

WAC 173-400-040(3): Fallout. No person shall cause or allow the emission of particulate matter 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 is deposited.

WAC 173-400-040(4): Fugitive emissions. The owner or operator of any emissions unit engaging in materials handling, construction, demolition or other operation which is a source of fugitive emission:

(a) If located in an attainment area and not impacting any nonattainment area, shall take reasonable precautions to prevent the release of air contaminants from the operation.

WAC173-400-111(7): Construction limitations.

(a) Approval to construct or modify a stationary source becomes invalid if construction is not commenced within eighteen months after receipt of the approval, if construction is discontinued for a period of eighteen months or more, or if construction is not completed within a reasonable time. The permitting authority may extend the eighteen-month period upon a satisfactory showing by the permittee that an extension is justified.

Federal

None

J. PUBLIC NOTICE

A notice of application was posted on the Agency's website for 15 days. No requests or responses were received. A copy of the website posting is below:

New Construction Projects

Company	Address	Project Description	Date Posted	Contact Engineer
Lenz Enterprises Inc	5210 SR 532, Stanwood, WA 98292	Application for the expansion of an existing composting facility to increase feedstock capacity from 75,000 to 150,000 tons per year.	3/13/19	Courtney O'Gorman

The Agency has determined that there could be significant public interest in this project; therefore, the project meets the criteria for mandatory public notice under WAC 173-400-171(3)(n).

A 30-day public comment period for the draft Order of Approval and preliminary Determination of Nonsignificance was held from March 23, 2021, through April 28, 2021. Notices that the draft materials were open to comment were published in the Everett Herald and the Daily Journal of Commerce on March 23, 2021. The Agency posted the application, the draft worksheet, the draft Order of Approval, the DNS and other relevant materials on the Agency's website during the comment period. In addition, the Agency held an online public hearing via Zoom on April 27, 2021, from 4:00 to 5:00 pm Pacific Time.

In addition, a 14-day public comment period for the Determination of Nonsignificance was held from October 13, 2021, through October 27, 2021.

Comments and responses for both public notice periods are in Appendix A to this worksheet.

K. RECOMMENDED APPROVAL CONDITIONS

Standard Conditions:

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the installation address in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.

2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

Specific Conditions:

EMISSION LIMITS

3. The aeration systems for the both the new and existing aerated static piles shall always be operated in the negative aeration mode except as allowed by this Condition for new and existing piles and as allowed by Condition 45 for the existing piles. During active pile construction and deconstruction the aeration systems can be run in positive mode. Except as allowed by Condition 45 for the existing piles, each aeration system must:

    a) Capture at least 98% of the volatile organic compound emissions generated by the aerated static piles. The owner or operator shall demonstrate compliance with this specification as required by Condition 31 and by using the methods approved by the Agency per Condition 32.
    b) Capture at least 98% of the ammonia emissions generated by the aerated static piles. The owner or operator shall demonstrate compliance with this specification as required by Condition 31 and by using the methods approved by the Agency per Condition 32.

4. All emissions captured by the aeration systems while operating in the negative mode must be routed to a biofilter. Each new and existing biofilter shall meet the requirements below:

    a) Provide a minimum removal efficiency of 95.0% for volatile organic compounds
    b) Provide a minimum removal efficiency of 80% for ammonia
    c) During periods when the biofilter outlet concentration or mass emissions of volatile organic compounds is too low to be detected by the Agency-approved testing method, the biofilter being tested will be presumed to meet the removal efficiencies required in item a) of this condition. The minimum detection limit (MDL) must be used in calculations of emissions for purposes of emission reporting and in all other instances where a biofilter emission rate is needed.
    d) During periods when the biofilter outlet concentration or mass emissions of ammonia is too low to be detected by the Agency-approved testing method, the biofilter being tested will be presumed to meet the removal efficiencies required in item b) of this condition. The minimum detection limit (MDL) must be used in calculations of emissions for purposes of emission

reporting and in all other instances where a biofilter emission rate is needed.

5. No detectable odor associated with the Lenz composting facility is allowed at or beyond the facility's boundary.

6. Visible emissions from grinding and screening shall not exceed 5% opacity for any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour as measured by WDOE Method 9A.

FEEDSTOCK AND TIPPING BUILDING REQUIREMENTS

7. Acceptable feedstock for both the new and existing piles shall be limited to "organic material", meaning any solid waste that is a biological substance of plant or animal origin capable of microbial degradation. Acceptable organic materials include but are not limited to the following:

   a) Agricultural wastes, including herbivorous animal manure, paunch waste, shells, marijuana waste which complies with WAC 314-55-097;
   b) ASTM compostable films and containers;
   c) Yard debris;
   d) Food waste – defined for the purposes of this permit as any organic material that was intended for human consumption;
   e) Food processing wastes; and
   f) Wood waste as defined by WAC 173-350-100, which does not contain paint or stain, laminates, bonding agents, or chemically treated wood.

8. Incoming feedstock shall be visually inspected for contaminants prior to being accepted into the facility. The following types of feedstock are unacceptable and shall be turned away as soon as possible:

   a) Feedstock types that are not an acceptable feedstock as defined in Condition 7;
   b) Acceptable feedstock as defined in Condition 7 contaminated with material that is not acceptable for composting. Visible non-acceptable material as defined in Condition 7 observed during the inspection may render a load as contaminated unless it can be removed from the feedstock during pre-processing or can be screened from the finished compost at the end of the process;
   c) Approved feedstock decomposed or putrefied to a degree that could cause an immediate odor problem in the receiving area that cannot be mitigated by mixing and/or bulking with other materials; and
   d) Any load that is determined to have the potential to cause an immediate, unreasonable nuisance that cannot be mitigated by mixing and/or bulking with other materials.

9. For each load of feedstock received, the owner or operator shall record the following information:

   a) Feedstock type;
   b) Weight of load;
   c) Results from inspection of the load;
   d) Date and time of receipt of the load; and

e) Name(s) of employee(s) who performed the inspection.

10. The owner or operator shall calculate and record the total weight of material placed into each of the aerated static piles on a monthly and 12-month rolling basis. The total weight of material placed into all aerated static piles combined, including feedstock for the composting process plus all other material (including bulking agent), shall not exceed 150,000 tons during any consecutive 12-month period. In addition, the total weight of material placed into the new aerated static piles, including feedstock for the composting process plus all other material (including bulking agent), shall not exceed 100,000 tons during any consecutive 12-month period. Both limits must be met for each consecutive 12-month period. All material put into each ASP is counted toward the incoming feedstock limits, including feedstock received from offsite, bulking agents, any and all material added to the ASPs that has previously been through the composting process (including "overs"), and any and all other materials placed into an ASP. For the purposes of compliance with this condition, any finished compost that is added to the surface of the aerated static piles to act as a biofilter for emission control is not counted toward the limit.

11. With the exception of stumps, brush, and clean wood, all feedstock brought on site shall be deposited completely into the tipping building, where it shall be stored under negative ventilation until processed and removed from the building to be placed in an aerated static pile. The tipping building ventilation system must be routed to a biofilter. All feedstock, with the exception of bulking agents (which consists of stumps, brush, and clean wood), shall be premixed for composting prior to removal from the tipping building.

12. With the exception of stumps, brush, and clean wood, all feedstock shall be processed and placed in an aerated static pile within 12 hours of receipt, and no material may be stored in the tipping building overnight, except in the event of primary and back-up equipment failure. If feedstock cannot be processed within 12 hours of receipt or by the end of the workday due to primary and back-up equipment failure, the owner or operator shall perform the following actions:

    a) All remaining material shall be stored in the southeast corner of the tipping building and covered with at least 12 inches of biofilter media;
    b) The owner or operator shall notify the Agency in writing prior to the end of the workday, including the amount of material that is being stored in the tipping building and the reason(s) why the material could not be processed within the required timeframe; and
    c) The owner or operator shall maintain records of the days that feedstock could not be processed within the required timeframe, including the amount of material stored, the reason(s) why the material could not be processed within the required timeframe, and the date and time that the material was able to be processed and placed in an aerated static pile.

OPERATIONAL LIMITS and REQUIREMENTS

13. The owner or operator shall install and properly operate a fine water mist system on all wood grinders to control fugitive dust. With the exception of stumps, brush, and clean wood, all grinding of feedstock must occur within the tipping building.

14. The owner or operator shall route standing water and water runoff from the tipping building and the compost pads to the leachate collection and treatment system. Leachate (treated or untreated) from the compost facility shall not be used for dust suppression but may be used for moisture addition during feedstock preparation or moisture addition during the composting process.

15. The new and existing aerated static piles shall be constructed within the following parameter ranges:

    a) Each pile shall contain no more than 14.0% food waste by weight.
    b) Carbon to nitrogen ratio shall be between 20:1 and 40:1.
    c) Bulk density shall be no greater than 950 lbs/yd^3.

16. Each new and existing aerated static pile shall be operated within the following operational limits at all times, except as described in a) through g):

    a) After the first 48 hours of initial construction of the pile, the moisture content throughout the entire pile shall be maintained between 35% and 65%.
    b) For the new aerated static piles, after the first 48 hours of initial construction of each pile, the average temperature throughout each pile shall be maintained between 45°C (113°F) and 80°C (176°F), based on a 24-hour average (midnight to midnight) except as allowed by Condition 19.
    c) For the existing aerated static piles, after the first 48 hours of initial construction of each pile, the average temperature of each pile shall be maintained between 45°C (113°F) and 100°C (212°F), based on a 24-hour average (midnight to midnight). In addition, the average temperature of each pile shall be maintained between 45°C (113°F) and 80°C (176°F), based on a 14-day average (midnight to midnight). Lenz must meet both the 24-hour average and the 14-day average for each pile at all times. If the average 24-hour average pile temperature or the 14-day average pile temperature is outside the range(s) established in this condition for any existing pile, Lenz shall bring the temperature back within the range(s) as expeditiously as possible. Lenz shall report all 24-hour and 14-day periods when the temperature for any existing pile is outside the range(s) to the Agency within 14 days of the end of each averaging period. The report shall include the dates and times of the 24-hour and 14-day periods (midnight to midnight) that were outside of the target range, actions taken to bring the pile(s) back into the target range(s), and the result of the actions taken.
    d) After the first 72 hours of operation, the average pH of the pile shall be maintained between 6 and 8.5.
    e) At all times, the average oxygen content throughout the entire pile shall be maintained at or above 10% except as allowed by Condition 19.
    f) At all times, each aerated static pile shall be covered with at least 12 inches of biofilter media.
    g) At all times, each aerated static pile shall be negatively aerated, such that the ventilation system continuously vents emissions to a biofilter in accordance with Conditions 3 and 4, except as allowed by Condition 45 for the existing piles Condition 3 for new and existing piles.

17. Each new and existing biofilter shall be operated within the following operational limits at all times:

    a) The oxygen content throughout each biofilter shall be maintained at or above 10%.
    b) Each biofilter shall have a depth of at least 4 feet throughout the entire biofilter.
    c) Residence time in each biofilter shall be no less than 40 seconds.

d) Static pressure in each duct between the fan and each biofilter shall be within the manufacturer's specified range. Documentation of the range from the manufacturer shall be kept on site.
e) There shall be no vegetation growing on the surface of any biofilter.

18. The average moisture content of each windrow and curing bed shall be maintained between 40% and 65% at all times.

19. The new aerated static piles are required to comply with all conditions of this Order of Approval at all times upon issuance except as allowed in this condition. Lenz may process compost in up to two of the new ASPs for up to two months starting on the date of issuance of this Order of Approval without complying with Conditions 16.b) and 16.e).

AERATED STATIC PILE and FEEDSTOCK MONITORING

20. Within the same calendar day that each new and existing aerated static pile is constructed, the owner or operator shall record the bulk density of the pile and the estimated carbon to nitrogen ratio based on the feedstock used to construct the pile. The bulk density and the estimated carbon to nitrogen ratio values are only required to be determined and recorded once for each new and existing aerated static pile on the calendar day it is built.

21. To demonstrate compliance with Condition 15.a, during each of the first 12 calendar months of operation of the new aerated static piles approved in this Order, the owner or operator shall determine the percentage of food waste by weight by verifying the food waste content is 14 percent or less of overall weight of each new and existing pile based on the initial compost mix composition. The owner or operator shall submit to the Agency for approval a proposed method for making this determination within 14 days of the issuance date of this Order of Approval.

22. To demonstrate compliance Conditions 16.b) and 16.c), the temperature of each new and existing aerated static pile shall be monitored and recorded hourly. At least two temperature averaging probes shall be used per ASP, and each probe shall be capable of measuring temperatures in both the core and outer layer of the compost pile. The first probe shall be placed at approximately one-third of the pile length, and the second probe shall be placed at approximately two-thirds of the pile length. The components of the temperature monitoring system shall be calibrated and maintained in accordance with manufacturer instructions and operating manuals. If the 24-hour average and/or 14-day average temperature reading is outside the range(s) identified in Condition 16.b) or c), the system must provide both an audible and visual alarm to alert the operators.

23. To show compliance with Condition 16.e, percent oxygen of each new and existing aerated static pile shall be measured and recorded each calendar day. Multiple measurements shall be made each calendar day to obtain a value representative of the overall pile.

24. All material put into the composting process shall remain within an aerated static pile until the organic material has a Solvita Maturity Index of 3.5 or greater as measured using the TMECC Method 05-08-E – Solvita® Maturity Test. This requirement applies to all new and existing aerated static piles.

25. Once an aerated static pile has met the criterion in Condition 24, the material may remain in the aerated static pile or be moved to a windrow. For each batch of material moved from an aerated static pile to a windrow, the owner or operator shall record the results of the Solvita® Maturity Test performed to meet Condition 24., which pile was moved, and the date it was moved. This requirement applies to all new and existing aerated static piles.

BIOFILTER MONITORING

26. Starting after the first full month of operation of at least one of the new aerated static piles approved under this Order, each calendar month and for each new and existing biofilter, the owner or operator shall measure the static pressure in the duct between the fan the biofilter while operating in negative aeration mode. Each measurement for each biofilter and each test must be conducted while operating each system at manufacturer's recommended set points, including constant fan speed and all dampers in fixed and predetermined positions. The fan speed and damper positions for each test must be the same as all previous tests. The pressure monitoring equipment shall be calibrated and maintained in accordance with manufacturer instructions and operating manuals. The biofilters shall always be operated within the manufacturer's specified pressure range. After 12 consecutive months of testing if the static pressure is within the manufacturer's recommended pressure range for all measurements, the owner or operator may reduce the test frequency to quarterly. If any quarterly reading is outside the manufacturer's pressure range, the test frequency immediately reverts to monthly.
27. Starting after the first full month of operation of at least one of the new aerated static piles approved under this Order, oxygen content of each new and existing biofilter shall be measured and recorded each calendar month, no less than 21 days apart and no more than 31 days apart, using a properly calibrated oxygen probe.
28. Starting after the first full month of operation of at least one of the new aerated static piles approved under this Order, the depth of each new and existing biofilter shall be measured and recorded each calendar month, with no less than 21 days apart and no more than 31 days apart.
29. Starting after the first full month of operation of at least one of the new aerated static piles approved under this Order, the residence time for each new and existing biofilter shall be determined and recorded once each calendar quarter concurrently with the testing required in Condition 30.
30. The owner or operator shall submit for Agency approval a biofilter monitoring plan providing the details of how the facility will perform the required static pressure, oxygen content, biofilter depth and residence time monitoring for each biofilter, including but not limited to, locations of the monitoring equipment, procedures for determining when the biofilter media needs to be replaced, and the number of samples, sampling locations, and procedures for measuring all required parameters. The plan must be submitted no more than 60 calendar days after issuance of this Order of Approval. The owner or operator must comply with the plan at all times after receipt of the plan by the Agency. All changes to the plan required by the Agency shall be made by the owner or operator within 7 calendars days of receipt of the changes by the owner or operator.

PERFORMANCE TESTING

31. The owner or operator shall have emissions tested for compliance with the capture efficiency requirements established in Condition 3 and removal efficiency requirements in Condition 4 of this

Order within 180 days of the completion of construction of the new composting process areas, except as allowed by Condition 45 for the existing piles. The emission tests described in this requirement shall be repeated at least once every calendar quarter for both the new and existing aerated static piles and associated biofilters. The testing shall be performed in accordance with the following:

a) The owner or operator shall demonstrate that at least 98% of all volatile organic compound emissions generated by the ASPs are captured and delivered to the biofilters and that at least 98% of all ammonia emissions generated by the ASPs are captured and delivered to the biofilters using the methods approved by the Agency as required by Condition 32.

b) The concentrations of total VOC and ammonia entering the biofilter shall be measured as close to the inlet of the aeration systems as possible of each biofilter while maintaining good sampling technique to obtain a representative sample. Testing shall be performed during periods when the inlet loading of VOC and ammonia are expected to be at or near their highest. If these higher emitting time periods are different for VOC than for ammonia, testing shall be performed for each of the two pollutants at their respective higher emitting periods.

c) Total VOC and ammonia concentrations shall be measured at the surface or at the subsurface of each biofilter. Sampling can be performed using colorimetric tubes, hand-held organic vapor analyzer, other hand-held methods, evacuated canisters, or other method approved by the Agency. The resulting measurements must be representative of the concentrations being emitted by the biofilter. Sample locations shall be distributed to provide measurements that are representative of the exit concentration of both VOC and ammonia for the entirety of each biofilter. The location and method of the sampling must be in the test plan required by Condition 32.

d) Sampling at the inlet and sampling at the surface/subsurface of each biofilter shall be conducted within four hours of each other.

e) The average concentrations of VOC and ammonia in the inlet and surface/subsurface shall be used to determine removal efficiency of each biofilter for VOC and ammonia.

f) The total weight of material in each of the aerated static piles and the initial construction date of each aerated static pile shall be recorded each sampling day.

32. For testing conducted pursuant to Condition 31, the owner or operator shall submit a compliance test plan to the Agency with the test notification submitted under Regulation I, Section 3.07(b) at least 60 days prior to the compliance test. The test plan must include a detailed description of the methods proposed for determining capture and removal efficiency as required by Condition 31. The test plan must be approved by the Agency before conducting the source test, and the owner or operator must follow the approved test plan. Changes to the approved test plan are acceptable as long as the owner or operator has obtained approval from the Agency prior to the start of the test. The Agency may require different test methods if needed to accurately determine the capture and removal efficiencies of the biofilters, including changes to the VOC and/or ammonia biofilter removal efficiency testing method at low inlet loading.

FACILITY-WIDE REQUIREMENTS

33. The owner or operator shall inspect the entire facility for visible emissions of fugitive dust at least once per calendar day, including an evaluation of whether dust control equipment (e.g., water spray bars, water truck) is being operated and in good working order. If visible emissions are observed, the owner or operator shall investigate the cause and take immediate corrective action to minimize emissions. The owner or operator shall record the date, time, and results of each inspection. If visible fugitive dust emissions were observed during any inspection, the owner or operator shall record the cause and what precautions were taken to minimize emissions.

34. The owner or operator shall conduct an inspection of its entire facility at least once per calendar day to monitor along and outside the property line for detectable odors from the facility. If odors from the facility are detected at or outside the property line during the monitoring or at any other time, the owner or operator shall take immediate corrective action to eliminate the odors. The daily inspection shall also include a visual inspection of the tipping building, each aerated static pile, and each biofilter to evaluate whether these activities are being maintained and operated in good working order. The owner or operator shall record the date, time, and results of each inspection, including any corrective actions taken to eliminate odors or maintenance performed on the biofilters.

35. Pursuant to the State Environmental Policy Act, RCW 43.21C.060, WAC 197-11-660, and Puget Sound Clean Air Agency Regulation I, Section 2.12:

    a) There shall be no stormwater discharges or discharges to ground water or surface water from the areas of the facility related to compost activities, including but not limited to the tipping building, aerated static piles, composting pads, leachate treatment system, and leachate pond.

    b) Starting on the first day on which feedstock for the new aerated static piles is brought by truck to the facility, the total number of truck trips for incoming feedstock delivery and outgoing compost delivery for the compost facility shall not exceed 77 truck trips per day and 7,118 truck trips during any consecutive 12-month period. The owner or operator shall calculate and record the total number of truck trips on a daily, monthly, and 12-month rolling basis to demonstrate compliance with these limits.

COMPLAINTS

36. The owner or operator shall establish a complaint response program for complaints received regarding air quality, including but not limited to odors and/or fugitive dust, as part of an Operation and Maintenance (O&M) Plan. The program shall include a complaint phone line, criteria and methods for establishing whether the Lenz facility may be the source of the air emissions related to the complaint, and a format for communicating results of investigation and advising complainants of Lenz's corrective actions.

    a) The owner or operator shall record and investigate complaints received regarding air quality as soon as possible, but no later than one working day after receipt.

b) The owner or operator shall correct any problems identified by these complaint investigations within 24 hours of identification or cease operation of the equipment until the problem is resolved;

c) Records of all complaints received regarding air quality issues shall include information regarding date and time of complaint; name and address of complainant (if known); nature of the complaint; investigation efforts completed and basis for conclusion reached; and date, time, and nature of any corrective action taken.

d) The owner or operator shall operate and maintain a meteorology station capable of measuring and recording temperature, wind speed, and wind direction that are representative of the meteorological conditions near the aerated static piles.

OPERATION & MAINTENANCE

37. The owner or operator shall develop an O&M Plan consistent with the requirements of Regulation I, Section 5.05(c). The plan must address procedures for determining when the composting systems, tipping building, and biofilters are operating properly and the corrective actions that will be taken when they are not.

38. The owner or operator shall have the operations and performance of the tipping building overall, including the air handling system and the performance of the biofilter to which the tipping building is vented, reviewed and evaluated by an independent third party at least once every 12 months. The first review required by this condition shall be conducted within 150 days of the completion of construction of the new composting process areas. The independent third party in conjunction with Lenz shall develop a proposed evaluation plan and proposed report format and submit these to the Agency for approval at least 75 days prior to the first evaluation. A copy of each written evaluation report shall be submitted to the Agency no later than 45 days after the evaluation date. The evaluation shall include, but is not limited to:

    a) Operational condition and integrity of the tipping building exhaust/capture system extending from the entrance to the tipping building to the point at which the exhaust enters the biofilter, including an evaluation of whether additional fan capacity is needed to adequately capture emissions.

    b) Operational condition and integrity of the biofilter to which the tipping building is vented.

    c) Adequacy and effectiveness of the system maintenance program and practices, including repair history and troubleshooting efforts.

    d) An assessment showing that the existing biofilters are adequately draining to ensure that the beds are not becoming waterlogged.

    e) Actions taken to address any issues or concerns found

    f) Recommendations for continuous improvement of the integrated system operation.

RECORDS AND OTHER REQUIREMENTS

39. All records of observations and supporting documentation required by this Order of Approval shall be completed contemporaneously and no later than the end of each day. Each inspection and observation required on a daily basis by this Order shall be completed for each operational day for the site. An operational day is defined as any day that feedstock, actively composting material, or finished compost is located onsite.

40. The owner or operator shall maintain records required by this Order of Approval for five years and make them available to Puget Sound Clean Air Agency personnel upon request.

41. For the purposes of this Order of Approval, "new" refers to the operations and equipment covered by this Order of Approval and added to the facility after February 2021 and "existing" refers to the operations and equipment temporarily approved by OA 10494 and permanently approved with this Order of Approval.

42. Upon issuance of this Order of Approval, this Order supersedes and cancels Order of Approval No. 10494, dated April 1, 2014, and cancels NOC application 11053 submitted November 12, 2015.

43. All requirements in this Order of Approval for new operations and equipment, as defined in Condition 41, apply immediately upon installation and first use of any new operations or equipment covered by the Order of Approval unless a specific condition in this Order of Approval allows for a later applicability date.

44. All requirements in this Order of Approval for existing operations and equipment, as defined in Condition 41, apply immediately upon issuance of this Order of Approval unless a specific condition in this Order of Approval allows for a later applicability date.

45. All modifications required by this Order of Approval to modify the existing operations and equipment to meet the requirements of Condition 3 must be completed and operational within one year of issuance of this Order of Approval.

46. The owner or operator shall submit a written monthly report to the Agency that documents the amount of material placed into the existing aerated static piles and into the new aerated static piles for the calendar month and the total amount for the previous 12 months. The report must clearly delineate how much material was put into existing piles, and separately how much was put into the new piles. The report must be received by the Agency no later than 30 days after the end of the calendar month covered by the report. The first report shall be submitted no later than February 28, 2022, for the month of January 2022.

L. REVIEWS

Reviews	Name	Date
Engineer:	Courtney Shernan	9/16/2020
Inspector:	Tom Hudson	9/3/2020
Supervisor Review:	Carole Cenci	9/17/2020
Engineer:	Carole Cenci	3/10/2021
Supervisor Review:	John Dawson	3/15/2021

In addition to the reviews above, the applicant was given a courtesy copy of this worksheet prior to issuance.

Appendix A.
Summaries of Comments and Responses

This appendix contains a summary of the comments that the Agency received on the Proposed Order of Approval and Determination of Non-Significance (DNS) during the public comment periods and the Agency responses to the comments.

Background and General Information

On March 23, 2021, the Agency posted for public comment the Proposed Order of Approval No. 11753 and proposed DNS. Comments were accepted from March 23, 2021, to April 28, 2021. A public hearing was held via Zoom on April 27, 2021. Comments were received via email during the comment period and also received verbally at the hearing. Complaints related to the facility that were received during the comment period were also included and considered.

The Agency posted the issued DNS on the Agency website on October 13, 2021, and accepted comments for 14 days. Several comments were received by the Agency.

All comments received by the Agency during both comment periods were carefully reviewed and considered. Comments were placed into one of two groups: Order of Approval/Engineering Worksheet comments or SEPA comments (those received on the draft DNS and then those received on the final DNS). After reviewing and considering all of the comments, in some cases, changes were made to the Order of Approval or the accompanying Engineering Worksheet. These changes are noted in the responses to the comments below. Some comments addressed multiple topics, and some responses are related to multiple comments. For these reasons, commenters and other interested parties are encouraged to read all responses provided, as more than one may address their topic of interest.

Below are the Agency responses to comments received on the Draft Order of Approval, proposed DNS, and the issued DNS. The comments and the Agency's responses have been divided into two basic categories:

> **OA / Technical**: These comments and responses are related to the Proposed Order of Approval, the Engineering Worksheet, and the related emission factors and calculations. Included in this category are odor concerns and complaints received during the comment period.
>
> **SEPA**: These comments and responses are related to the SEPA work and DNS issued by the Agency.

To lend structure to these comments and responses, each comment is labeled with a category and number (e.g., **Comment OA 5**), and the Agency response follows. Because some comments covered multiple topics, and some topics were expressed by more than one commenter, the Agency summarized the comments in this document. The comments as received by the Agency in their entirety are available from the Agency and will be posted on the Agency's website.

Comment Responses OA / Technical:

Comments OA 1 through OA 37 on the proposed Order of Approval, Engineering Worksheet and supporting documents are addressed below.

Comment OA 1 - Application Review Process

The Agency received some written comments, some oral comments during the public hearing, and complaints during the comment period that expressed concerns regarding odors and other emissions, generated by Lenz during the composting process, including the impact on allergies and health. Some expressed concern regarding the expansion of the permitted operation while other commenters requested that the Agency deny the Notice of Construction application and not issue an Order of Approval.

The Agency thanks these commenters for expressing their concerns. In response, more information regarding the Agency's authority and permitting process may be helpful and is described below.

The Agency is a municipal corporation pursuant to the Washington Clean Air Act (RCW 70A. et. seq.) and the permitting authority for air contaminant sources in King, Kitsap, Snohomish and Pierce Counties.

The authority and basic requirements for permitting of new or modified sources of air contaminant comes from the WA Clean Air Act. Pursuant to RCW 70.94, the Agency adopted regulations for NOC permitting in Agency Regulation I, Article 6 which also incorporates by reference parts of the Washington state permitting process found in WAC 173-400.
Agency Regulation I, Article 6 states that the Agency shall issue a permit (referred to as an Order of Approval in the rule) if a proposed source will meet all of the following criteria:

- Complies with all applicable federal, state and local air quality regulations,
- Employs Best Available Control Technology (BACT) for all pollutants, and
- Will not cause or contribute to a violation of any ambient air quality standard.

One of the requirements to obtain a permit is that a proposal must employ BACT for all pollutants. BACT is defined in the WA Clean Air Act as:

> "*…an emission limitation based on the maximum degree of reduction for each air pollutant subject to regulation under this chapter emitted from or that results from any new or modified stationary source, that 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 a 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 such a pollutant. In no event shall application of "best available control technology" result in emissions of any pollutants that will exceed the emissions allowed by any applicable*

> *standard under 40 C.F.R. Part 60 and Part 61, as they exist on July 25, 1993, or their later enactments as adopted by reference by the director by rule. Emissions from any source utilizing clean fuels, or any other means, to comply with this subsection shall not be allowed to increase above levels that would have been required under the definition of BACT as it existed prior to enactment of the federal clean air act amendments of 1990.*" RCW 70A.15.1030(6).

In addition, for this Order of Approval, Lenz is required to apply Reasonably Available Control Technology for control equipment that is being substantially altered, but the changes do not result in an increase in emissions. RACT is defined in the Washington State Clean Air Act as follows:
"Reasonably available control technology" (RACT) means the lowest emission limit that a particular source or source category is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. RACT is determined on a case-by-case basis for an individual source or source category taking into account the impact of the source upon air quality, the availability of additional controls, the emission reduction to be achieved by additional controls, the impact of additional controls on air quality, and the capital and operating costs of the additional controls. RACT requirements for a source or source category shall be adopted only after notice and opportunity for comment are afforded." RCW 70A.15.1030(20).

The Lenz facility is also required to implement BACT for toxic air pollutants where there is an emission increase. This is also referred to as tBACT and is defined in the Department of Ecology regulations at WAC 173-460-020 as follows:
"Best available control technology for toxics (tBACT)" means best available control technology, as that term is defined in WAC 173-400-030, as applied to toxic air pollutants.

Additionally, the Agency includes Condition 1 in its NOC Orders of Approval which requires a facility "to install and establish" its "equipment, device[s] and process[es]" "in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency." Condition 1 ensures that a facility's equipment and/or processes are installed and/or operated consistent with the application materials approved by the Agency in an NOC Order of Approval. It also ensures that emissions calculated by the Agency as part of application review are consistent with what is approved in a NOC Order of Approval. It is also important to note that other conditions in the Order of Approval include explicit details that complement Condition 1.

The proposed and final Orders of Approval 11753 contain conditions that establish BACT, RACT, and tBACT for the Lenz composting facility. These conditions are discussed further, and more detail is provided in the Engineering Worksheet and these Responses to Comments. Establishment and enforcement of these conditions will control the odors and emissions from the Lenz composting operation.

For more discussion regarding odors, please see comment response SEPA 1.

Comments Received from Lenz Enterprises, Inc.

Comments OA 2 through OA 22 were submitted by Lenz Enterprises, Inc (Lenz). As is routine process for the Agency, the draft Order of Approval and accompanying Engineering Worksheet were provided to Lenz prior to the public comment period. The purpose of this is to give the applicant the opportunity to check for accuracy and raise concerns about elements of the draft Order of Approval and supporting documents. Lenz provided input during this process and the Agency made changes to the draft Order or Approval and Engineering Worksheet as appropriate. The Agency thanks Lenz for their participation in the process and for the comments submitted below.

Comment OA 2 - Application Review Process

Lenz commented that after the original permit writer resigned from the Agency the discussions between Lenz and the Agency were "not necessarily connected" and "caused some discontinuities."

Response:
All discussions with Lenz continued to be based on the information Lenz had submitted to the Agency, the previous work done by Agency, and the draft Order of Approval that had been previously shared with Lenz.

No changes were made to the Order of Approval.

Comment OA 3 - Applicable Regulations:

Lenz commented that the agency should have followed a provision of the state New Source Review rule WAC 173-400-103(2)(b) to calculate emissions.

Response:
This provision of the WAC is not part of the Agency's New Source Review rules (Agency Regulation I, Article 6), is not an applicable regulation in the Agency's jurisdiction and is not used by the Agency.

No changes were made to the Order of Approval.

Comment OA 4 - Emission Factors:

Lenz submitted multiple comments regarding various aspects of the emission factors used in the Agency's analysis of the Notice of Construction application from Lenz. The comments included:

- The emission factors used for Volatile Organic Compounds (VOC) were based on an internal Agency document and this document was superficial, did not include the emissions measured at the Lenz site, was not peer reviewed, has significant flaws, and uses assumptions and methods that make it "useless" for the project proposed by Lenz.
- The Agency should have used VOC emission factors based on testing done by Washington Department of Ecology and Washington State University.

- For HAP and TAP emissions, the Agency should have used the information from the testing performed at their facility.
- The emission factors used are not applicable to their facility and were not appropriate to use for calculating emissions and that the Agency was not open to discussion about the factors.
- The emission calculation method included in the Agency document was arbitrary and capricious.
- The Agency would not engage in discussions with them regarding the emission factors.
- The use of these emission factors resulted in theoretical and extreme conditions that substantially changed the original system design and operations plan.
- The emission factors used to calculate emissions could have required a Title V permit rather than a Notice of Construction and Order of Approval.
- Lenz commented that the Agency used emission factors that exceed actual emissions measured at the Lenz site and imposed operational restrictions based on the emissions calculated using these factors.

Response:
The Agency disagrees with these comments.

The Agency disagrees that the emission calculation method was arbitrary and capricious. As described in this response to comments, the emission factors were chosen based on a review of available relevant information, assessment of their applicability, suitability for the Lenz facility and reasonableness. Lenz and the Agency discussed and exchanged information and views on the emission factors for at least a year, beginning no later than April 2019 and continuing until at least April 2020. Emission calculation methods are summarized below.

The VOC emission calculations were based on emission factors documented in a report completed by the Agency in September of 2014, entitled, “Compost Emission Factors – Volatile Organic Compounds.” The report includes a description of the technical approach taken, an explanation of the principles used in choosing the data, identifies the source of the emission factors and includes a bibliography.

The compost VOC emission factors used by the Agency for the Lenz facility have also been used by the Washington Department of Ecology and the Olympic Region Clean Air Agency for air quality permitting.

Most HAP and TAP emissions calculations for this project were based on the Washington Department of Ecology testing performed at the Lenz facility. Emissions of methanol and acetaldehyde were based on total VOCs and speciated data from U.S. EPA for composting facilities.

Ammonia emissions were calculated using an uncontrolled emission factor that the Washington State Department of Ecology developed based on the report from the San Joaquin Valley Air Pollution Control District's "Compost Emission Factors" report (September 15, 2010). The Agency believes these emission factors are the best available and appropriate factors for the Lenz permitting process.

The Agency assumes that the commenter's reference to actual emissions measured at the Lenz site are the Washington State Department of Ecology 2013 VOC testing and Washington State University (WSU) 2018 testing. Both data sets were reviewed by the Agency and the suitability of those data sets for emission factors was discussed in the Lenz Emission Review NOC #11753 document sent to Lenz on September 26, 2019. The reasoning for this decision is summarized below.

The Washington State Department of Ecology 2013 VOC testing data was not used to develop emission factors because the measurements were collected only over two days of sampling which do not represent the entire active compost cycle. The testing data did not include a test report specifying how the samples were collected and analyzed, the specific locations the samples were taken, or the operating parameters at the facility. Composting emissions vary throughout the composting process such that measurements need to be taken over the full composting cycle to obtain a representative emission rate. In addition, the flow rates that are used for the emission calculations were not obtained from Lenz's facility.

The Agency could not use the emission testing performed in 2018 by Washington State University for various reasons. The only information the Agency had regarding this testing was an email about the sampling. No test report or raw data was provided. Additionally, Dr. Thomas Jobson with Washington State University noted in his email to Edward Wheeler on July 16, 2019 (included as Appendix A in Lenz's LENZ ENTERPRISES COMPOST FACILITY UPGRADE 2019 – Potential to Emit and Emissions Estimates document submitted to the Agency by email on July 22, 2019) that the WSU emission factor is a rough estimate and is an underestimate since methanol and ethanol data were not included. This explanation was also shared with Lenz via email.

The Title V permitting program is very different and independent of the Agency's Notice of Construction and Order of Approval program. The Title V permit covers ongoing operation of air pollution sources and is based on federal EPA rules and implemented through Washington regulations found at WAC 173-401 and is unrelated to an approval to construct or modify a facility. A facility would be subject to both the Title V and NOC programs if it met the applicability criteria for both.

It is unclear to what Lenz is referring in their comment regarding "theoretical and extreme conditions that substantially changed the original system design and operations plan." But the Agency believes the commenter is referring to using 100 % negative aeration on the aerated static piles rather than part positive aeration and part negative aeration. The assumptions made in the emission calculations and the emission factors chosen were neither theoretical nor extreme,

but rather based on reasonable technical judgement. The operational and control technology requirements in the draft Order of Approval were arrived at via the Agency's "Best Available Control Technology" (BACT) and "Reasonably Available Control Technology" (RACT) determinations, which were based on the type of facility, equipment at the facility, and this case, on the size of the facility in terms of throughput, and were not dependent on the choice of emissions factors.

For these reasons, no changes were made to the Order of Approval.

Comment OA 5 - System Design:
Lenz commented that the system to maximize environmental controls has not been proven by any full-scale facility.

Response:
The Agency disagrees with this comment. The facility is designed to use negative aeration of the static piles and cover the piles with a layer of finished compost to capture emissions. These captured emissions are then routed to a biofilter which will remove much of the captured emissions. This is common technology and is currently used by other commercial composting facilities.

No changes were made to the Order of Approval.

Comment OA 6 - Permit Conditions General:
Lenz commented that the operational requirements in the draft Order of Approval are "not reasonable or achievable." Lenz also stated that the requirements would be in conflict with other requirements or permits from other agencies. Lenz requested that the Order of Approval be re-written to accommodate their concerns.

Response:
The Agency disagrees with this comment. Lenz reviewed the draft Order of Approval prior to public notice. The Agency believes all the conditions in the draft Order of Approval are reasonable and achievable. The Agency is not aware of any conditions in the draft Order of Approval that conflict with any other requirements or permits from other agencies. However, as indicated in responses to more specific comments below, some conditions will be modified when appropriate. Also see response to comment OA 16.

Some changes were made to specific conditions in the Order of Approval. See further comments below for these changes.

Comment OA 7 - Implementation Schedule:
There is no implementation schedule to update the existing system.

Response: The Agency recognizes that a transition period may be necessary between when this Order of Approval is issued and when the changes to the existing system will be completed.

The Order of Approval has been updated to include an implementation schedule for the existing system. See conditions 44 and 45 in the final Order of Approval

Comment OA 8 - Existing System Permit Conditions:
Lenz commented that the existing aerated static piles cannot meet the temperature requirements in the draft Order of Approval if operated only with negative aeration.

Response:
The Agency shared the draft Order of Approval with Lenz prior to public notice and Lenz did not notify the agency of these concerns.

The Order of Approval has been modified to address this concern. For the existing piles, the temperature at the high end of the range was changed to 100ºC as a 24-hour average and an additional temperature limit of 80ºC was added as a 14-day average. This will allow for higher temperatures which tend to occur with retrofitted fully negatively aerated compost systems. If the pile temperature goes outside either of the target ranges Lenz will be required to bring the temperature back within range as expeditiously as possible and report all periods outside the range to the Agency. See condition 16.c) in the final Order of Approval.

Comment OA 9 - New System Permit Conditions:
Lenz commented that they would need up to a year to test the equipment for the new aerated static piles and adjust it to meet the conditions in the draft Order of Approval. If the system requires replacement or upgrade after installation there could be delays.

Response:
If Lenz needs to adjust equipment or operations that were not part of the review for this or any active Orders of Approval, these adjustments would not require authorization from the Agency unless they otherwise require approval from the Agency. For equipment or operations that were included in this, or any other active Order of Approval the Agency cannot speculate on future issues that may arise. The Agency will work with Lenz when issues arise, and these changes or adjustments may or may not require a new Notice of Construction and Order of Approval.

No changes were made to the Order of Approval.

Comment OA 10 - Aerated Static Pile Emission Capture Efficiency
Lenz commented that the draft Order of Approval contains a minimum system capture efficiency of 98% for all ammonia and VOC generated in the aerated static piles. The Agency developed these requirements without discussion with Lenz. The Agency is requiring Lenz to develop a method to test for capture efficiency. There is no "scientifically verifiable" way to measure capture efficiency.

Response:
The Agency and Lenz spent many hours discussing the proposed permit conditions, including the capture efficiency requirements and during those discussions Lenz did not indicate they could not meet the requirement. In addition, the Agency shared the draft permit with Lenz prior to public notice and they did not notify the Agency of any concerns.
Lenz represented they would achieve 100% capture efficiency in the emission calculations submitted to the Agency. The Agency reduced this to 98% to allow for a small amount of uncaptured emissions coming directly from the aerated static piles. This assumption is consistent with a recent Order of Approval issued by the Washington Department of Ecology for a commercial composting facility using similar technology (Order No. 14AQ-C191).
The Order of Approval requires testing to determine if the capture efficiency requirement is being met. The basic methods that can be used are specified in the permit and the specific details of the test method are required to be developed by Lenz and approved by the Agency. This requirement is consistent with other Agency-issued Orders of Approval that require the applicant to develop the final detailed test plans for Agency approval after issuance of the Order but well before the testing occurs.

Also see response to comments from Tim O'Neill with Engineered Compost Systems, OA 23. Some changes were made to Condition 31.a) to clarify that the capture efficiencies specified in Condition 3 are required to be tested per Condition 31.a).

Comment OA 11 - Biofilter Pollutant Removal Efficiency
Lenz commented that the draft Order of Approval requires the biofilter to achieve a removal efficiency of 95% for VOC and 80% for ammonia and suggested this limit is arbitrary. Lenz doesn't believe they can meet this requirement for low levels of incoming pollutants. Lenz commented that the total emissions coming into and leaving the biofilters are the most important parameters.

Response:
Basing permit conditions on percent reduction is a common method used by this Agency as well as many others. The percent reduction value for VOC is based on the Notice of Construction application received from Lenz and the percent reduction value for ammonia is based on California's South Coast Air Quality Management District Rule 1133.3. These requirements are not arbitrary.

To address Lenz' concern regarding meeting the percent reduction requirements at low pollutant inlet levels, the Agency has modified the draft Order of Approval to require the tests to be performed during periods when the incoming emissions are expected to be at higher inlet loading levels and not when the incoming emissions are expected to be very low. The draft Order of Approval was also modified to specify that if the emissions at the outlet of the biofilter are at or below the method detection limit, it has met the percent removal requirement. See final Order of Approval condition 4.

Comment OA 12 – Odor:
Lenz commented that the condition requiring no detectable odor beyond the facility's fenceline contradicts PSCAA regulations. The Agency did not supply the Best Available Control Technology Analysis to Lenz. The BACT analysis did not use appropriate "examples" and is not relevant to the Lenz site-specific conditions. The analysis is arbitrary and has no basis in science, does not have a direct relationship to the Lenz site, is not reasonable, achievable, or based in law.

Response:
The Agency disagrees with this comment. The condition requiring no detectable odor beyond the facility's fenceline does not contradict PSCAA regulations. The requirement is the outcome of the Best Available Control Technology Analysis review. BACT is defined for all new or modified sources at WAC 173-400-030(13) and is required to be implemented by WAC 173-400-113(2) for all New Source Review permitting actions. Both of these regulations are incorporated by reference into the Agency regulations in Regulation I. Article 6, Section 6.01(a) and apply to this permitting action. In addition to the WAC requirements above, all of the Agency's own regulations apply, including those in Regulation 1, Article 9, Section 9.11. Additionally, this BACT requirement is consistent with State of Washington solid waste requirements that presently already require commercial composting facilities like Lenz's facility to control nuisance odors to prevent migration beyond its property boundaries, s*ee e.g.* WAC 173-350-220.

The Agency gave the draft technical support worksheet which included the BACT analysis to Lenz prior to the public notice of the draft Order of Approval. The BACT analysis used appropriate examples and the Agency concluded they were relevant to the proposed project. These included other facilities whose permits contain similar conditions as well as examples of composting facilities that already achieve this level of performance. The analysis was reasonable and the no detectable odor beyond the facility's fenceline BACT requirement is achievable.

No changes were made to the Order of Approval.

Comment OA 13 - ASP Construction Food Waste Percentage:
Condition 15.a) of the draft Order of Approval restricts the amount of food waste allowed in each aerated static pile to below 14%. Lenz commented that the Agency did not justify this condition when asked by Lenz. The requirement is arbitrary and capricious and may or may not be related to emissions. The draft Order of Approval does not have a definition of "food waste" and does not quantify "significant."

Response:
The Agency is unclear as to this comment's reference to "significant" and the Order of Approval's conditions does not contain the word "significant."

The Agency disagrees that the foodwaste content of the piles was not justified, is arbitrary and capricious, and is possibly unrelated to emissions. Condition 15.a) requiring no more than 14% by weight food waste was included in the draft Order of Approval to reflect the parameters used

in the emission calculations. The factors used to determine emissions from the aerated static piles are based on a pile composition of less than 15% food waste. The emission factors for piles with more than 15% food waste are higher and, if used, would result in higher emission estimates from the facility. The Agency discussed with Lenz the justification for including a limit of 14% by weight food waste limit in the aerated static piles. Lenz was aware of this information as shown by a July 22, 2019 email from Lenz to the Agency that included an attached document entitled, "LENZ ENTERPRISES COMPOST FACILITY UPGRADE 2019 – Potential to Emit and Emissions Estimates." On page 5 of this document it says, "Emission inventory methodology addresses composting facilities with feedstocks that include Greenwaste, co-composting (Greenwaste combined with other feedstocks) and food waste mixed with Greenwaste. The methodology applies to composting mixtures with up to 15% by weight Foodwaste." On page 6 of this document it goes on to say, "Feedstocks accepted at the LCF contain between 5-10% Foodwaste; not up to 15%." On the same page it says, "Feedstocks delivered to the Lenz facility contain between 5-10 % Foodwaste, averaging about 6 %." In the "20200104_Lenz Response to PSCAA Compost App review 122019" document sent to the Agency from Lenz by email on January 6, 2021, Lenz discusses the difference between Lenz's food waste content and a facility with "higher food waste (25%)…which can increase emissions." The documents from Lenz make it clear that they understood that compost piles with 15% foodwaste emit more pollutants than those below 15%. It is clear to the Agency that Lenz was aware of the significance of the limit on the percentage of food waste and the consequences of allowing the facility to process a higher food waste percentage.

The Agency agrees that there is no definition of "food waste" in the draft Order of Approval. The Order of Approval was updated to include a definition of "food waste" for the purposes of this Order, the term "food waste" includes all organic materials intended for human consumption. See condition 7.d) of the final Order of Approval.

Comment OA 14 - ASP Construction Carbon to Nitrogen Ratio:
Lenz commented that the requirement in condition 15.b) to construct each aerated static pile with the carbon to nitrogen ratio between 20:1 and 40:1 may be an "aspirational goal" and "strict compliance with this range will not dictate emission levels." They describe the requirement as "arbitrary and capricious."

Response:
This requirement was based on information submitted by Lenz as part of their Notice of Construction application. Lenz submitted to the Agency a document entitled, "Lenz Compost Facility, Stanwood WA Plan of Operation." On page 59 of this document it states, "The optimal carbon to nitrogen ratio for aerobic composting is 25-40:1. When the ratio is much above 40:1, bacterial activity slows dramatically. When the ratio falls much below 20:1, nitrogenous compounds such as free ammonia build to levels toxic to beneficial decomposer bacteria, and unpleasant odors may result." The Agency worked diligently with Lenz on the draft Order of Approval and spent many hours discussing the proposed permit conditions with Lenz, including the carbon to nitrogen ratio requirement. Lenz did not indicate during the permitting process that they believed the requirement to be an "aspirational goal." Lenz gave no reason during the

permitting process nor in their comments on the pre-public notice version of the draft Order of Approval why they would be unable to construct the piles as required by this condition. The carbon to nitrogen ratio is only required to be met at initial construction on each aerated static pile. Lenz is in full control of how the aerated static piles are constructed.

No changes were made to the Order of Approval.

Comment OA 15 - ASP Construction Bulk Density:
Condition 15.c) of the draft Order of Approval requires that each aerated static pile be constructed with bulk density no greater than 950 lb/yd3. Lenz believes that this requirement is aspirational and will not control emissions.

Response:
The Agency disagrees with this comment. Bulk density is an important parameter for ASP pile construction and is related to proper composting which is related to emissions. If the bulk density is too high, it could limit the oxygen in the pile and limit the ability to pull air through the pile and into the biofilter leading to anaerobic conditions which may generate more odors and more other unwanted emissions. The Agency worked diligently with Lenz on the draft Order of Approval and spent many hours discussing the proposed permit conditions with Lenz, including the bulk density requirements. Lenz did not indicate they could not meet the requirement.
The requirement was based on information submitted by Lenz as part of their Notice of Construction application. Lenz submitted to the Agency a document entitled, "Lenz Compost Facility, Stanwood WA Plan of Operation." On pages 8 and 9 of this document it states, "Composition of the initial compost mix is one of the most critical factors in developing successful compost and reducing potential odors. Organic materials must be properly blended to provide the nutrients that support microbial activity and growth, including a balanced supply of carbon and nitrogen (C:N ratio); and proper physical characteristics." It goes on to list bulk density as one of the physical characteristics. On page 58 of this document in Table B-1: "Properties of a Target Mix" the bulk density range is identified as 750-900 lb/yd^3. Lenz indicated during the Notice of Construction application review process that the lower end of the bulk density range was not critical so no lower limit was placed in the draft Order of Approval on the bulk density. The upper limit in the draft Order of Approval is higher than what Lenz presented as the "target" which allows for variation and flexibility in their operations. The bulk density requirement applies to the construction of the pile and is not required to be maintained nor monitored throughout the life of the pile.

No changes were made to the Order of Approval.

Comment OA 16 - ASP Operation:
Lenz believes that all the requirements in Condition 16. of the draft Order of Approval do not ensure good composting or ensure emission control and are not suitable permit conditions. The conditions contradict one another or are unachievable. Operational requirements should not be dictated by the Agency and are contradictory to other agency's permit requirements. Historic operations using criteria already in use at the site have low emission rates.

Response:
The Agency disagrees with this comment. The Agency worked diligently with Lenz on the conditions in the draft Order of Approval. Over the course of those discussions, the Agency modified the conditions to accommodate concerns raised by Lenz regarding the draft conditions. During the application review process Lenz did not indicate they could not meet the requirements in the draft Order of Approval. The permit conditions reflect the operation that Lenz represented to the Agency and on which the Agency based its permit conditions and calculations. Because the requirements are based on the methods and indicators of good composting provided to the Agency by Lenz, the Agency believes the conditions in the Draft Order of Approval will help ensure good composting and emission control. It is common for the Agency to use operational parameters provided in Notice of Construction application material as conditions in Orders of Approval to help ensure the facility is operated as represented in the application.

Lenz specifically commented on the requirements in Condition 16. for temperature, moisture, and oxygen. The ranges in the draft Order of Approval were based on information submitted by Lenz as part of their Notice of Construction application including the February 2019 "PSCAA Application; Permit Modification" and a document they submitted to the Agency as an appendix to the application entitled, "Lenz Compost Facility, Stanwood WA Plan of Operation."
On page 20 of the Plan of Operation there is a table that identifies the "target operating ranges" for three parameters on which Lenz specifically commented. The table below was copied from Lenz' document:

Process Stage	Temperature C	Moisture %	Oxygen %
Pathogen Reduction	57°-65°	40-50%	>15%
High Rate Decomposition	50°-60°	40-50%	>15%

The draft Order of Approval conditions were based on these ranges but allow additional flexibility outside of these target ranges for all parameters to account for times when the targets are not able to be met. The table below shows the comparison between Lenz' application and the conditions in draft Order of Approval 11753. In all cases the ranges in the draft Order of Approval are wider than the ranges identified by Lenz in their Plan of Operation but are still within proper composting practices. Lenz must meet all conditions in the Order of Approval at all times.

Source of the Range	Temperature, °C	Moisture, %	Oxygen, %
Lenz Application, "Plan of Operation"	50-65 °C	40-50%	>15%
Draft Order of Approval 11753	45-80 °C, 45-100 °C	35-65%	>10%

The application from Lenz included information on the active composting stage and moisture content. It states on page 15, "If a particular compost batch falls below optimum moisture levels, the pile will be remixed and watered." It is clear that this situation could occur and is accounted for in their Plan of Operation. Given that the Order of Approval covers a wider range than Lenz'

target range, it appears they should be able to maintain the needed moisture content across the target temperature range. If moisture levels get too low in any specific pile they would presumably follow their plan of operation and remix and rewater the pile as described on page 15 of the Plan of Operation.

Responses to each of the comments on the requirements in draft Order of Approval Conditions 16.a) – 16.d) are below.
Condition 16.a) requires that after 48 hours of initial construction of the pile the moisture content remain between 35% and 65%. This range was based on information provided by Lenz in both the February 2019 "PSCAA Application; Permit Modification" and a document they submitted to the Agency as an appendix to the application entitled, "Lenz Compost Facility, Stanwood WA Plan of Operation." On page 59 of the Plan of Operation, it states, "The most efficient decomposers are aerobic bacteria, that thrive with an adequate supply of oxygen…and at moisture levels of between 40 and 60 percent by weight. At moisture levels below this range, bacterial activity slows dramatically. At higher moisture levels, small pores between organic waste particles will fill with water, diffusion of oxygen decreases and bacteria switch to anaerobic oxidation pathways which generate foul smelling by products." The range allowed in the permit is wider than the target range identified in the Lenz document to allow flexibility. Per the draft Order of Approval Lenz is allowed to be outside the range during the first 48 hours after construction of the pile. Lenz indicated this was an adequate period of time for the pile to stabilize within the required range of 35% and 65% moisture.

No changes were made to the Order of Approval.

Condition 16.b) for both the new and existing aerated static piles requires that after the first 48 hours of initial construction of the pile, the temperature shall be maintained between 45ºC (113ºF) and 70ºC (160ºF) as an hourly average. This range was based on information provided by Lenz in both the February 2019 "PSCAA Application; Permit Modification" and a document they submitted to the Agency as an appendix to the application entitled, "Lenz Compost Facility, Stanwood WA Plan of Operation." Condition 16.b) in the draft Order of Approval allowed the temperature to be outside the stated range for the first 48 hours after construction.
Lenz commented that the temperature varies on an hourly basis and would be more representative of overall operation if the temperature average time was longer. They also commented that the top end of the temperature range for the new piles should be 80^0C to allow for realistic variation in temperatures. Lenz commented that the temperature range allowed for the existing aerated static piles in the draft Order of Approval is not feasible with a fully negatively aerated system. This comment was based on their current operations using the existing piles in fully negative aeration mode.

The Order of Approval has been modified to extend the temperature range for the new piles to 45ºC and 80ºC based on a 24-hour average. The Order of Approval was also modified to allow the average pile temperature of the existing piles to range from 45ºC to 100ºC based on a 24-hour average and an additional limit was added restricting the 14-day average high temperature to be no more than 80ºC. If the any pile temperature goes outside the ranges Lenz will be

required to bring the temperature back within range as expeditiously as possible and notify the Agency. See OA conditions 16.b) and c).

Condition 16.d) requires that after 72 hours of operation the average pH of the pile be maintained between 6 and 8.5. This range was based on information provided by Lenz in a document they submitted to the Agency entitled, "Lenz Compost Facility, Stanwood WA Plan of Operation." On page 59 of the Plan of Operation it states, "With proper pH in the pile (6.5-8.5) thermophilic bacteria work rapidly within the temperature range of 100º to 150ºF." The condition allows 72 hours for the pH to get into the range and stabilize. The range also allows flexibility on the low end of the range allowing the pH to go down to 6.

No changes were made to the Order of Approval.

Condition 16.e) requires that oxygen content be maintained at or above 10%. This range was based on information provided by Lenz in a document they submitted to the Agency entitled, "Lenz Compost Facility, Stanwood WA Plan of Operation." On page 59 and 60 of the Plan of Operation it presents a graphic and explanation of the percent oxygen in the compost pile over a range of temperatures and how it affects the amount of oxygen dissolved in the liquid within the compost pile which affects whether the pile is in aerobic or anaerobic decay. To maintain adequate oxygen dissolved in the liquid to avoid excessive anaerobic decay, the pile oxygen percentage must remain at or above 10%.

No changes were made to the Order of Approval.

Comment OA 17 - ASP Operation and Contradicting Other Agencies' Requirements:
Lenz believes the draft Order of Approval contradicts WAC 173-350-220 solid waste time and temperature requirements.

Response:
Additional information about this WAC was included in more detail on page 15 of the 2019 "Lenz Compost Facility, Stanwood WA – Plan of Operation." The Plan of Operation states, "During the active phase of composting, pathogen reduction will be met in accordance with WAC 173-350-220. To meet the requirement, temperatures within the pile are maintained above 55°C (131°F) for a minimum of 72 hours (3 days)." The draft Order of Approval allows the pile temperature to go up to 70 - 100°C without any time limit which is consistent with the requirements in this WAC reference.

No changes were made to the Order of Approval.

Comment OA 18 – ASP Monitoring Bulk Density and Carbon to Nitrogen Ratio:
Regarding Condition 19. in the draft Order of Approval (renumbered to Condition 20 in the final Order of Approval), Lenz commented that daily testing of bulk density and carbon to nitrogen ratios is busy work and does not provide "actionable data" to the operator or the Agency.

Response:
The Agency disagrees with this comment. The condition in the draft and final Orders of Approval requires the bulk density of each pile in both the existing composting operation and the new composting operation be recorded and the carbon to nitrogen ratio to be estimated only on the day the pile is constructed and based on the feedstock used to construct the pile. There is no daily or ongoing testing required by this condition.

The Order of Approval was edited to make it clear that this is a one-time requirement only for the day each pile is constructed. It applies to both the existing operation and the proposed expansion of the facility. See condition 20 of the final Order of Approval.

Comment OA 19 – Food Waste Limits:
Lenz commented on Condition 20 of the draft Order of Approval (Condition 21 of the final Order of Approval) that the Agency has not provided information on why 14% food waste is significant, the value is arbitrary and not based in science. Verifying food waste content would require significant effort for sampling and testing. The condition is not achievable and is arbitrary and capricious. Compost feedstocks vary seasonally and would allow tracking the food waste percentage seasonally which would be accurate, reasonable, and achievable.

Response:
The Agency disagrees with this comment. The Agency and Lenz spent many hours discussing their proposed permit conditions, including the food waste limitations and Lenz did not indicate they could not meet the limit. The Agency shared the draft permit prior to public notice with Lenz and they did not notify the Agency of any concerns. Condition 20 of the draft Order of Approval (Condition 21 of the final) requires that each compost pile be constructed with no more than 14 % food waste. The basis for limiting food waste content is based on the Agency's report, "Compost Emission Factors: Volatile Organic Compounds" which summarized data from studies performed in California on composting facilities. This report includes the VOC emission factor for compost piles with 15% or more food waste and for piles with less than 15% food waste. The emission factors for piles with 15% or more food waste were about a factor of 2.3 higher than piles with less than 15% food waste. Requiring a 14% limit on food waste content in the composting mix at Lenz maintains the Lenz operations below the 15% food waste threshold. If the food waste content is expected to go above 15%, the use of food waste emission factors would need to be used to determine potential VOC emissions.

The method for determining the percentage of foodwaste in the draft Order of Approval does not require sampling or sending samples to a lab. This requirement is a one-time requirement for each pile and is based on the initial compost mix composition. The requirement allows Lenz to propose the method they will use to make this determination and submit it to the Agency for approval. Lenz' comment seems to indicate that they cannot meet the 14 % food waste content requirement due to seasonal variability. As described earlier, the limit of 14 % food waste in each pile is based on the method used to calculate emissions for the overall facility. In order to reassess this requirement, the Agency would need to perform a new analysis using a seasonal average of 14 percent food waste, emissions of VOC, HAP and TAP would need to be

recalculated and modeled using an air dispersion model. Also see response to Lenz comment OA 13.

No changes were made to the Order of Approval.

Comment OA 20 – ASP Oxygen Content Monitoring:
Condition 22 of the draft Order of Approval (Condition 23 of the final) requires daily monitoring of the oxygen content of the aerated static piles. Lenz commented this is arbitrary and capricious, is not needed, it is not based on actual site-specific operations, and ambient air at 20.9% oxygen is pulled through the piles.

Response:
The Agency disagrees with the comment. The oxygen content specified in Condition 16. and required to be measured in Condition 23. in the final Order of Approval was based on information provided by Lenz (see response to Comment OA 16). Although ambient air is pulled through the pile, daily monitoring is reasonable and appropriate given that the oxygen is consumed in the composting process. The pile changes each day as the composting process is ongoing and the conditions of the pile continue to change throughout the composting process.

No changes were made to the Order of Approval.

Comment OA 21 – Performance Testing:
Lenz commented that the performance testing at the facility is focused only on the emission control efficiency of the biofilter and does not include overall emissions generated which is an integral part of performance expectation of the system based on system design.

Response:
The Agency disagrees with this comment. It appears the commenter is suggesting the emissions from the whole site be tested. The Agency does not believe this is necessary at this time. The Agency focused on the biofilters because it is a critical aspect of the emission control system and is amenable to testing. Testing the entire site would be very unusual and difficult to accurately measure emission.

In addition to testing of the biofilters, testing of the emission capture efficiency of the aeration system and compost cover is also required. The Order of Approval was modified to require that Lenz show the aerated static pile capture systems are meeting the required 98 percent capture efficiency. In doing this test, Lenz will need to measure emissions coming from the aerated static piles. These two components make up most of the overall system. The emission testing requirements are linked to emission units with BACT determinations that resulted in emission limits. Other emission units reviewed for this project have BACT determinations that resulted in operational practices or work practice standards. For units without an emission limit, the compliance demonstration is not necessarily an emission test.

Condition 31.a) of the Order of Approval was changed to reflect this updated requirement.

Comment OA 22 – Revocation of OA 10494:
The Agency should not revoke Order of Approval 10494 until the new systems are installed and optimized. It is unreasonable to impose conditions applicable to the new system on the effective date of the order.

Response:
The Agency understands that Lenz may need some time to work with the new ASPs after the Order of Approval is issued prior to putting them into full service. The Agency has made changes to the Order of Approval to allow Lenz to trial up to two of the new ASP piles for up to two months. During that time Lenz would not need to meet the temperature or oxygen requirements in the Order of Approval.

The Order of Approval was modified to allow Lenz to operate two of the new ASPs for up to two months without having to meet the temperature and oxygen requirements. See condition 19. of the final Order of Approval. In addition, the Order of Approval was modified to allow the existing piles (those permitted pursuant to prior Orders of Approval) to meet the conditions in this Order of Approval in the timeframes required in the Order.

Comments Received from Tim O'Neill of Engineered Compost Systems

Comments OA 23 through OA 36 were submitted by Tim O'Neill of Engineered Compost Systems (ECS), Lenz' technical and engineering consultant. As is routine process for the Agency, the draft Order of Approval and accompanying Engineering Worksheet were provided to Lenz prior to the public comment period and Lenz provided these documents to ECS. The purpose of this is to give the applicant and their consultant the opportunity to check for accuracy and raise concerns about elements of the draft Order of Approval and supporting documents. Lenz provided input during this process and the Agency made changes to the draft Order or Approval and Engineering Worksheet as appropriate. The Agency thanks Lenz and ECS for their participation in the process and for the comments submitted below.

Comment OA 23 – Existing ASP Design:
The existing aerated static piles were not designed to be operated 100% negative aeration. Requiring them to be run in this mode would require physical changes and time to make them (Order of Approval Condition 3).

Response:
Lenz stated during the application review process that all ASPs on the site would be operated with 100% negative aeration. The emissions were calculated based on 100% negative aeration for both the new and existing aerated static piles. Lenz reviewed the emission calculations and the engineering Notice of Construction Worksheet which identified these assumptions prior to finalizing the draft Order of Approval and did not request any changes or identify any concerns with the assumptions. Lenz tested the existing ASPs in full negative aeration mode prior to the issuance of the final Order of Approval and has shown it can be done.

No changes were made to the Order of Approval.

Comment OA 24 – ASP Capture Efficiency Testing:
There are no commercially available technologies to demonstrate compliance with the capture efficiencies required by the draft Order of Approval for the aerated static piles (Order of Approval Condition 3.a) and b).

Response:
The Agency disagrees with this comment. Condition 31.a) of the draft Order of Approval requires quarterly testing to determine if the aerated static piles are working as designed and that at least 98% of emissions are being captured by the combination of the finished compost cover and the aeration system are being delivered to the biofilters. Lenz represented they would achieve 100% capture efficiency in the emissions calculations in their application and the Agency reduced this to allow for a small amount of uncaptured emissions coming directly from the aerated static piles and to be consistent with the capture efficiency required by a recently permitted compost facility by the Department of Ecology. The condition along with Condition 32 allow flexibility for Lenz to choose a testing method. There is no requirement for a "commercially available technology" to make the required demonstration.

Changes were made to Condition 31.a) of the final Order of Approval to clarify the condition and to make it read more consistently with the performance standard required by Condition 3 of the final Order of Approval.

Comment OA 25 - Biofilter Emission Removal Efficiency:
The requirement for the biofilters to remove 95% of all VOC and 80% of all ammonia emissions is a "vague yet high bar of performance." The commenter had several questions about what would be included in the measurement and whether it would be an average measurement or applied to "each location on the biofilter surface." If it applies to each location on the biofilter surface it will be "impossible" to achieve. The commenter also stated that this standard is too high if it is required to be met at all times (Order of Approval Condition 4.a and b).

The commenter believes the 95% removal efficiency requirement was included in the draft Order of Approval because the Agency used emission factors that the commenter believes to be "arbitrarily high" and based on source tests on unaerated windrows "configured to maximize VOC emissions to grandfather in high VOC emission levels for existing facilities before 2010 in California."

Response:
The removal efficiency of the biofilters was based on various pieces of information, including information received from Lenz. The BACT review for the modification resulted in the required removal efficiency of the biofilters of 95% for VOC and 80% for ammonia.
The method for showing compliance with this requirement (Condition 4. of the draft Order of Approval) is contained in Conditions 30 and 31 of the draft Order of Approval. (Conditions 31 and 32 of the final Order of Approval). Condition 31 of the draft Order of Approval and

Condition 32 of the final Order of Approval require Lenz to submit a compliance test plan for approval by the Agency. This test plan will include all detail necessary for proper testing. The removal efficiency requirements are unrelated to the choice of emission factors.

No changes were made to the Order of Approval.

Comment OA 26 - Biofilter Emission Removal Efficiency California Requirements:
The commenter noted that California's AQMDs permits call for 80% control efficiencies for biofilters (presumably at compost facilities).

Response:
The Agency is working under different regulations than California's AQMDs and determines Best Available Control Technology (BACT) on a case-by-case basis for each application. Control efficiency requirements for California air agencies were taken into account in the BACT review and final determination. The California control efficiencies were determined not to be BACT for the Lenz facility because Lenz represented in their application they could meet higher control efficiencies for the biofilters.

No changes were made to the Order of Approval.

Comment OA 27 – Offsite Odor Limitation:
The commenter stated that the requirement in the draft Order of Approval for no detectable odor associated with Lenz at or beyond the facility's boundary is vague and capricious. Other comments on odor included:

- It is unclear who makes the determination of whether an odor is associated with Lenz.
- The limit should be quantitative based on Odor Units, five or seven Odor Units is standard.
- It needs to be correlated with odor sampling, ASTM analysis, and dispersion modeling (Order of Approval Condition 5).

Response:
The Agency disagrees with this comment. Based on the proposed design and operation of the Lenz facility, which includes upgrades to the existing ASPs and new ASPs with efficient biofilters, no odor from the composting operations is expected at or beyond the property line. This is also consistent with Lenz's obligations to meet the requirements of WAC 173-350-220. If Agency staff persons identify any odor at or beyond the Lenz property line, the Agency would determine if it is coming from the Lenz facility. In addition, Condition 33 of the draft Order of Approval (Condition 34 of the final Order of Approval) requires Lenz employees to monitor the property line. If any odor is detected, the Lenz employee would determine if it is coming from their facility. The Agency's experience with Odor Units, odor sampling and odor modeling has not shown these to be effective or useful for determining if odor is expected to be present at or beyond the property line.

No changes were made to the Order of Approval.

Comment OA 28 – Food Waste Limitation:
The requirement to construct the aerated static piles with no more than 14% food waste by weight is arbitrary. The Agency should use the standard mix BMP's established by the U.S. Composting Council and by the Washington Organic Recycling Council (Order of Approval Condition 15.a).

Response:
The Agency disagrees with this comment. The 14% limit for food waste in each ASP is based on the emission factors used to determine the facility's air emissions and is not arbitrary. The Agency uses information related to air emissions when calculating air emissions. The BMP's established by the U.S. Composting Council and by the Washington Organic Recycling Council have no bearing on the review of air emissions. Also see response to Lenz comment OA 19.

No changes were made to the Order of Approval.

Comment OA 29 – Carbon to Nitrogen Ratio Limitations:
There is no reason there should be an upper limit on carbon to nitrogen ratio when constructing the aerated static piles (Order of Approval Condition 15.b).

Response:
The Agency disagrees with this comment. The requirement was based on information submitted by Lenz as part of their Notice of Construction application. Lenz submitted to the Agency a document entitled, "Lenz Compost Facility, Stanwood WA Plan of Operation." On page 59 of this document it states, "The optimal carbon to nitrogen ratio for aerobic composting is 25-40:1. When the ratio is much above 40:1, bacterial activity slows dramatically. When the ratio falls much below 20:1, nitrogenous compounds such as free ammonia build to levels toxic to beneficial decomposer bacteria, and unpleasant odors may result." Based on this and other information the Agency determined that it was an important part of air emission control to remain within the range identified in the Notice of Construction application.

No changes were made to the Order of Approval.

Comment OA 30 – ASP Temperature Limitations:
The temperature range for the aerated static piles identified in the Order of Approval is not achievable at every point in the pile and some piles may take longer than 2 days to reach the minimum temperature. An achievable and effective monitoring requirement would be that "average oxygen levels be maintained above 15% and the aeration control device (damper or fan) at each zone run at 100% until the average zone temperature falls below 65ºC and that the average pile temperature come below 70ºC by the end of 7 days."

Response:
See response to OA 8.

Comment OA 31 – ASP Oxygen Content Limitations:
The condition limiting the oxygen content of the compost piles should be an average over the entire pile and should allow for it to be greater than 15% oxygen.

Response:
The Agency agrees it is reasonable to have the oxygen level be an average over the pile. Lenz did not ask to have the oxygen percentage modified so this change was not made.

The draft Order of Approval was edited to clarify that the oxygen content limit applies to a average over the pile. See condition 16.e) of the final Order of Approval.

Comment OA 32 – Biofilter Oxygen Limitations:
The condition limiting oxygen content of the biofilters is not required by any regulations at any facility in the country and the commenter was not aware of any "peer-research" on the role of oxygen content on biofilter efficiency. The commenter believes the requirement "appears to have no basis in fact" (final Order of Approval Condition 17.a).

Response:
The Agency disagrees with this comment. The reactions occurring in biofilters that reduce or eliminate emissions require enough oxygen to ensure this reaction occurs as expected. An example of a published study on the impact of oxygen on biofilter performance can be found here:

He Yang, Beatrice Minuth & D. Grant Allen (2002) Effects of Nitrogen and Oxygen on Biofilter Performance, Journal of the Air & Waste Management Association, 52:3, 279-286, DOI: 10.1080/10473289.2002.10470777

No changes were made to the Order of Approval.

Comment OA 33 -ASP Oxygen Content Monitoring:
The commentor believes the frequency of the oxygen monitoring in the piles is too high. The oxygen content doesn't vary enough to warrant this frequency. The commenter goes on to suggest a less frequent oxygen sampling protocol (draft Order of Approval Condition 22, final Order of Approval Condition 23).

Response:
The Agency disagrees with this comment. The Agency does not have adequate information about the oxygen content of the specific compost piles covered by the draft Order of Approval that would warrant reducing the testing frequency.

No changes were made to the Order of Approval.

Comment OA 34 – Biofilter Backpressure Monitoring Frequency:
The commenter believes the monthly testing of back pressure of the biofilter during the first 12 months of operation is not needed based on data gathered at a different compost facility. The commenter believes the testing should be required quarterly and not preceded by monthly testing (draft Order of Approval Condition 25, final Order of Approval Condition 26).

Response:
The Agency disagrees with this comment. It is unknown how closely the biofilters covered by this draft Order of Approval are to the biofilters cited in the comment. Condition 26 of the final Order of Approval requires monthly testing for the first 12 months and states that if the backpressure is within the manufacturer's recommended levels for all of the first 12 months, then subsequently the testing frequency can be reduced to quarterly if Lenz choses to do so.

No changes were made to the Order of Approval.

Comment OA 35 – Biofilter Oxygen Monitoring
The commenter believes the requirement to measure oxygen in the biofilters is not necessary. They go on to state that if the compost pile has greater than 15% oxygen then the air going from the compost pile to the biofilter will also be greater than 15%. They are not aware of any correlation between oxygen levels in the biofilter and pollutant reduction performance of the biofilter. These measurements are not standard in the compost industry and not included in the biofilter BMP trainings from the US Compost Council (Condition 26).

Response:
The Agency disagrees with this comment. As noted in the response to comment OA 32, oxygen is an important parameter for proper biofilter function. Regular monitoring of the oxygen content will help ensure the biofilter is being maintained and is working properly.

No changes were made to the Order of Approval in response to this comment.

Comment OA 36 – Biofilter Compliance at Low Inlet Levels
The commenter is questioning how to handle the biofilter VOC and ammonia removal efficiency calculation if the measured values are very low.

Response:
A similar comment was received from Lenz. See response to Lenz comment OA11.

Other Specific Comments

Comment OA 37 – Lenz Currently Exceeding Permitted Capacity Levels

Both in writing and during the public hearing on the Notice of Construction, comments were made regarding allegations of Lenz exceeding the facility's current permitted capacity.

Response:
Regarding allegations of exceeding the facility's permitted capacity, the Agency is following its standard investigation and review processes to determine any appropriate enforcement. Also see response to comment SEPA 4.b.

Comment OA 38 – Particle Fallout and Trackout of Dirt

During the public hearing on the Notice of Construction one commenter noted that Lenz was not cleaning the pavement and there is fallout of particulate on cars and in gardens.

Response:
There are multiple requirements in the Order of Approval related to particulates. These include requirements for Lenz to inspect the facility once per day for visible emissions of fugitive dust and the condition of the dust control equipment. If any visible emissions are observed, Lenz must take immediate corrective action. In addition, Lenz is required to establish a complaint response program for complaints received regarding air quality, including odors and fugitive dust. The program must include a complaint phone line and a format for communicating results of investigations and corrective actions to complainants.

In addition, the Agency's Regulation I, Article 9, section 9.15 requires Lenz to control fugitive dust. Lenz is required to comply with this regulation. The Agency inspects the Lenz facility and enforces this regulation. The rule specifically reads:

> ***SECTION 9.15***: It shall be unlawful for any person to cause or allow visible emissions of fugitive dust unless reasonable precautions are employed to minimize the emissions. Reasonable precautions include, but are not limited to, the following:
> (1) The use of control equipment, enclosures, and wet (or chemical) suppression techniques, as practical, and curtailment during high winds;
> (2) Surfacing roadways and parking areas with asphalt, concrete, or gravel;
> (3) Treating temporary, low-traffic areas (e.g., construction sites) with water or chemical stabilizers, reducing vehicle speeds, constructing pavement or rip rap exit aprons, and cleaning vehicle undercarriages before they exit to prevent the track-out of mud or dirt onto paved public roadways; or
> (4) Covering or wetting truck loads or allowing adequate freeboard to prevent the escape of dust-bearing materials.

Comment Responses SEPA:

Responses to Comments Received on the DNS
During the March-April 2021 comment period for the NOC Order of Approval, the Agency received comments related to the State Environmental Policy Act and the Agency's intention to issue a Determination of Nonsignificance. In addition, some SEPA-related comments were received during the public hearing on the Notice of Construction. These comments are addressed in this section. Comments received on the final DNS issued on October 12, 2021, are addressed in a following section.

Comment SEPA 1
Many commenters, in both written and oral comments, focused on the potential for odors due to the proposed increase in capacity at the Lenz facility. These comments spanned general concerns about odor to very specific concerns that composting odors interfere with nearby residents' ability to enjoy their property or invite guests to their houses. Some comments specifically mentioned ammonia as a pollutant of concern.

Response:
The conditions of this Order of Approval (also referred to as "OA" herein) regulate odor and ammonia to ensure no significant odor or ammonia impacts will occur and are consistent with the requirement for the facility to install and operate Best Available Control Technology (BACT). The conditions also regulate other toxic air pollutants (TAPs) and require the use of tBACT for toxics as well. The OA requires specific ranges of operation for the composting heaps, their aeration systems, and the biofilters that control their emissions which will reduce odors by destroying odor-causing compounds through microbial activity, and the OA prohibits the facility from causing odors associated with composting outside or beyond the property line. Furthermore, the enhancements to the pollution controls and the monitoring required in the OA, along with a prohibition on offsite composting odors in the OA, support the determination that odors will not increase as a result of the increase in capacity approved in the OA, s*ee also* WAC 173-350-220, and no significant odor impacts will be caused by this project.

Additionally, since odors are regulated as a pollutant through the NOC program, and since the NOC OA directly regulates the operations that could cause odors, minimizes any created odors and prohibits odors offsite, the Agency has determined that no additional odor mitigation pursuant to SEPA is required.

Comment SEPA 2:
One commenter focused specifically on methane emissions. This commenter stated that the methane emissions from the Lenz facility cause strong odors and that methane emissions must be prevented, since methane is a powerful greenhouse gas.

Response:
As compared to disposing of yard and food waste in landfills, composting of yard and food waste typically creates lesser methane emissions. This is because composting occurs aerobically, and

the presence of oxygen during this controlled decomposition can prevent the formation of methane. This is in contrast to landfills, which are known to be larger sources of methane, due to the anaerobic decomposition of waste. The US Environmental Protection Agency points to composting as a strategy to reduce methane emissions that would otherwise originate from landfills[21]. Additionally, methane is odorless, so if a gas is causing odors in a neighborhood, it cannot be methane. See also response to SEPA Comment 1.

Comment SEPA 3:
Comments during the April 27, 2021, public hearing on the Order of Approval mentioned various items, including the topics of impacts of noise from truck traffic, impact of lights on the community, and control of rats and other rodents.

Response:
The topic of truck traffic impacts are considered in item SEPA 4d, below. Regarding light pollution, the Agency notes that the Lenz property already includes long-established mining and composting operations and is an active industrial site, and the site already includes lighting. Given the lighting that is already in place, the impacts of the additional lighting for the new additional composting operations will be minimal. Rats and rodents are outside the scope of the NOC review, but vectors are addressed by the Snohomish Health District's regulation of the Lenz facility, see e.g. WAC 173-350-220 (a composting facility must manage its operations to prevent attraction of vectors). Thus, no significant lighting or vector impacts are expected from this project.

Comment SEPA 4:
Svend-Brandt Erichsen from Nossaman Law submitted an April 28, 2021, letter providing a number of comments "on behalf of individuals residing on Camano Island." No individuals were identified in any of the communications the Agency received from Mr. Brandt-Erichsen related to this application process. One of Mr. Brandt-Erichsen's comments was that the Agency should withdraw the draft DNS and instead make a Determination of Significance and require an environmental impact statement (EIS).

Response:
The Agency disagrees with Mr. Brandt-Erichsen's statement that the Agency should require an EIS for this project. An EIS is required if the project were likely to have a significant adverse environmental impact, where the term "significant" means a reasonable likelihood of more than a moderate adverse impact on environmental quality and where such impacts are not mitigated. Significance is defined in WAC 197-11-794 and is determined in comparison to existing, not theoretical, uses or conditions at a site. As is discussed further in the comments above and below, the Agency has determined that the present proposal will not cause significant adverse impacts that are not mitigated and an EIS is not required.

[21] US EPA, "Reducing the Impact of Wasted Food by Feeding the Soil and Composting", https://www.epa.gov/sustainable-management-food/reducing-impact-wasted-food-feeding-soil-and-composting, accessed 1/12/2022.

Mr. Brandt-Erichsen's April 28, 2021, letter also included several specific topics, which are addressed below.

Comment SEPA 4a:
Mr. Brandt-Erichsen asserts that the Agency used the incorrect "baseline" for the SEPA analysis. Lenz operates an existing commercial compositing facility at 5210 SR 532 in Stanwood and since April 2, 2014, has been operating under an authorization that allowed the processing of 75,000 of incoming feedstock tons per year (which was an increase from the previously authorized 30,000 tons per year to 75,000 tons per year). Mr. Brandt-Erichsen asserts that since the increase from 30,000 to 75,000 was not covered by a previous SEPA review, the present SEPA review should be based on an increase from 30,000 tons per year, rather than from 75,000 tons per year. His letter asserts: "A five-fold increase in potential odors and other air emissions, traffic and stormwater impacts all are significant and should be analyzed in an EIS. PSCAA cannot make a DNS for an increase in operating capacity of this magnitude."

Response:
The commenter is incorrect in asserting that a SEPA threshold determination was not previously issued by the Agency for the increase from 30,000 to 75,000 tons per year. A SEPA DNS was issued by this Agency for that increase at the Lenz facility on February 2, 2014. A copy of this DNS is attached with these responses.

Mr. Brandt-Erichsen's statement that an increase in facility capacity leads to a linear increase in emissions and odors also appears to ignore the new conditions that are imposed on the Lenz facility in the new Order of Approval (No. 11753) and the required operational limits, emission limits, and odor limits, which generally apply not only to the proposed new composting operations but also to the existing operations, will serve to reduce emissions and odors from the existing and increased allowed tonnage. The Agency properly evaluated and considered Lenz's existing operations in reaching this conclusion. Similarly, the idea of a five-fold increase in stormwater impacts assumes bad faith on the part of the applicant in the completion of their SEPA checklist. To the contrary, the requirement to have no stormwater discharges to groundwater or surface water will assure that there is no "five-fold" increase in stormwater or water impacts. *See also* SEPA 4e, 4f, 9g, 9h, and 9i below.

After obtaining Mr. Brandt-Erichsen's April 28, 2021, letter via public records request, Lenz's attorney James Tupper wrote the following in a letter to the Agency on behalf of Lenz (who Mr. Tupper represents): "While the NOC approval is titled "temporary," the authorization was only temporary pending the submission of additional information and the application that is currently before the agency. The 2014 NOC approval was also accompanied by a SEPA DNS issued on February 2, 2014." The Agency agrees with Mr. Tupper's summation of the permitting history. A copy of the DNS associated with the increase from 30,000 tons to 75,000 tons is included below. The Agency properly evaluated the increase in capacity from 75,000 tons per year to 150,000 tons per year in this review.

Comment SEPA 4b:
Mr. Brandt-Erichsen asserts that Lenz is not complying with its current Agency permit, and therefore should be denied the OA that is the subject of this project. Citing a letter sent to the Agency by Cedar Grove Composting, Inc. on March 25, 2021, he states, "Cities and counties have reported sending solid waste to Lenz for composting that exceeded Lenz's permit limit by 40 percent in 2020, and by almost 20 percent in 2019." Mr. Brandt-Erichsen also asserts the following:

"PSCAA has included a number of conditions in the proposed OAC to reduce potential environmental impacts. These include no detectable odors outside the property line, no stormwater discharges to groundwater and surface water, and a limit on daily and annual truck trips. Lenz has a demonstrated track record of not complying with air permit requirements, having expanded its processing capacity without obtaining approval from PSCAA, and now exceeding its temporarily authorized processing capacity by up to 40 percent."

Response:
The Agency is reviewing the "Composting Facility Reports" submitted by Lenz to the Department of Ecology for 2018, 2019, and 2020. The Agency will handle all determinations and subsequent actions related to potential past violations through its standard enforcement process.

The Agency does not agree with Mr. Brandt-Erichsen's assertion that the Agency should essentially presume before issuance that the permit applicant will violate its permit. The Agency has written an enforceable Order of Approval, that includes requirements related to operation, testing, monitoring, recordkeeping, and reporting. The Agency will inspect the facility on a periodic basis. These requirements all serve to ensure compliance with the conditions in the Order of Approval.

However, the cited letter from Cedar Grove did suggest that the Agency should clarify the permit condition related to what is included in determining compliance with the facility's permitted capacity. Thus, Condition 10 and the project description in the OA have been edited to clarify that all materials put into the compost piles, including wood and compost returned to the piles for further processing, is counted toward Lenz's permitted capacity. Finished composed used as cover for odor/emissions control purposes is not counted toward Lenz's permitted capacity.

Comment SEPA 4c:
Mr. Brandt-Erichsen states that the project would have a significant adverse impact on air quality.

Response:
The Agency disagrees with this comment. Impacts on air quality were reviewed thoroughly by the Agency in for Lenz's Notice of Construction as documented in the Agency's worksheet, and the conditions included in the Order of Approval assure that the project will not have a significant adverse impact on air quality. The requirements required by BACT/tBACT/RACT

serve to prevent adverse impacts on air quality and the Order of Approval prohibits offsite composting odors (which are a regulated air contaminant) and includes stringent operational and testing requirements which will minimize odors. Again, Mr. Brandt-Erichsen's statement appears to assume future non-compliance with the Order of Approval which is not a reasonable approach for the Agency to take with a source. *See also* SEPA 1.

Comment SEPA 4d:
Mr. Brandt-Erichsen states that Lenz's SEPA checklist makes unrealistic claims regarding traffic impacts. He claims that Lenz could not reach its new 150,000 ton-per-year capacity using the number of truck trips to which it would be limited under this Order of Approval.

Response:
The Agency disagrees with this comment. Lenz has stated in writing that no additional vehicular trips per day (over existing numbers) will occur and that any increased capacity will be accomplished with use of larger trucks, and the Order of Approval includes enforceable limits through a condition (Condition 35.b) on inbound and outbound truck trips, on a daily, monthly and annual basis to assure no increased vehicular trips. Inbound and outbound truck traffic is readily observable and countable, and Lenz will be required to demonstrate compliance with this condition through appropriate recordkeeping.

Mr. Brandt-Erichsen's traffic-related assertions appear to assume non-compliance by Lenz with the traffic related condition of the Order of Approval which is not a reasonable approach for the Agency to take with a source. Given the condition in the Order of Approval and the information before the Agency, no significant traffic impacts will occur from the proposal and no further traffic analysis or mitigation is necessary.

Comment SEPA 4e:
Mr. Brandt-Erichsen asserts that stormwater from the facility could harm local waterways, particularly local Dungeness crab populations and habitat in Port Susan. He claims that areas used for composting will drain to the mine's stormwater settling basin. He also asserts that the presence of two wetlands on the west side of the Lenz properties lead to streams that flow off-site, and that seeps from the mine's infiltration ponds flow to agricultural ditches that eventually lead to the Stillaguamish River.

Response:
The Agency disagrees with these comments. Condition 35.a of the Order of Approval explicitly prohibits any stormwater discharges from the portions of the facility related to composting. This is an enforceable condition. Additionally, nothing in the map which Mr. Brandt-Erichsen provided with his April 28, 2021, letter shows discharge from composting operations. Again, Mr. Brandt-Erichsen's assertion appears to assume non-compliance with the Order of Approval.

Mr. Tupper's letter representing Lenz also addressed this issue:

> "The entire composting operation will be on impervious surfaces, and all run off from the composting operation will be managed as leachate. The leachate will be treated and re-used in the composting operation. Lenz has no authority and is not authorized to discharge runoff and leachate to surface water and groundwater."

Regarding the potential runoff to the Stillaguamish River, any runoff and seeps from the mining section of the property would be unrelated to the composting operations, since it is required that all stormwater from the composting operations will be treated onsite. As noted above, discharges from the composting operations are prohibited. Given the condition in the Order of Approval and the information before the Agency, no significant stormwater impacts will occur from the proposal.

Regarding a past Department of Ecology case, in 2014, it is the Agency's understanding that Lenz received a Notice of Violation (NOV Docket No. 10738) and an Immediate Action Order (Order Docket No. 10727) from the Department of Ecology. These were related to contaminated surface water discharges to the ditches that lead to the Stillaguamish River. Ecology measured high levels of fecal coliform and turbidity related to the Lenz site. These stemmed from improper management and direction of stormwater as well as an unpermitted cattle operation that was on the site at the time. Lenz resolved these by halting all discharges to surface waters, removing the cattle operation, and conducting a hydrogeologic study of the property. In July 2015, Ecology found Lenz's actions to be sufficient to resolve the problem and issued a Determination of No Further Action, which closed the matter. There does not appear to be a connection between Lenz's composting operation, from which discharges will be prohibited as noted above, and the previous unpermitted discharges. *See also* SEPA 4f and 4g and Tupper's Nov. 30, 2021, letter describing recent Department of Ecology inspection of Lenz facility. Given the condition(s) in the Order of Approval and the information before the Agency, no significant water or stormwater impacts will occur from the proposal and no further analysis is necessary.

Comment SEPA 4f:
Mr. Brandt-Erichsen asserts that, while the SEPA checklist claimed there are no surface water bodies in the vicinity of the site, the site plan in the Plan of Operations shows two wetlands on the west side of the Lenz property and a stream, used by coho salmon, running from those wetlands off site. Seeps from the mine's infiltration ponds (which receive water from compost storage, wood and brush waste areas outside of the 8-acre pad) have a surface flow to agriculture ditches that run to Jorgenson Slough and the Stillaguamish River.

Response:
The Agency does not agree with these comments. There does not appear to be any connection between the composting operations and surface waters as suggested by Mr. Brand-Erichsen. As Mr. Tupper stated in his response letter:

> "Nossman [*sic*] cites to a notice of intent for coverage under the Department of Ecology Sand and Gravel General Permit as the basis for allegations that the proposed composting operation will have adverse impacts on wetlands and a stream west of the larger Lenz

> property. The composting operation is well east of these wetlands. The entire composting operation will be on impervious surfaces, and all run off from the composting operation will be managed as leachate. The leachate will be treated and re-used in the composting operation. Lenz has no authority and is not authorized to discharge runoff and leachate to surface water and groundwater."

See also Tupper's Nov. 30, 2021, letter describing site and operations on site; SEPA 4e. Given the location of the on-site composting and the condition(s) in the Order of Approval and the information before the Agency, no significant surface water impacts will occur from the proposal and no further analysis is necessary.

Comment SEPA 4g:
Finally, Mr. Brandt-Erichsen commented, both in writing and during the hearing on the Order of Approval, that Lenz's SEPA checklist misrepresented site conditions in four ways. First, he asserts that there are unstable slopes on the property that Lenz did not disclose in the checklist. Second, he asserts that Lenz's claims that (a) less than 10% of the site will be covered with impervious surfaces and (b) there will be no stormwater discharge from composting operations contradict one another. Third, he claims that potential odors from a nearby dairy farm should have been included in a discussion of cumulative odors. Fourth, he asserts that Lenz was inconsistent in its definition of the "site" in its checklist, sometimes referring to the entire property, and sometimes referring to only the composting section of the property.

Response:

Mr. Brandt-Erichsen does not state that composting will occurring on unstable soils, just that there are potential landslide areas near the composting area. Given that the composting operations will not have any stormwater discharge and will not be located near the unstable soils, there does not appear to be any connection between ground stability issues and the composting operation.

Regarding the amount of impervious surface in the Checklist, it appears to the Agency that Lenz was referring to the entire property when stating that only 10% would be impervious. Given that composting will occur on only a fraction of the entire property, it is feasible to collect all stormwater from the composting section to prevent discharge while still only having 10% of the entire property be covered in impervious surface. Mr. Tupper representing Lenz confirmed in writing that the composting operations "will take place on an impervious surface" and the "operation is designed and will perform to preclude any runoff or injection from composting operations." *See also* SEPA 4e, 4f, 9g, 9h, and 9i.

Regarding the issue of cumulative odor impacts, Mr. Tupper stated the following in his letter to the Agency:

> "[Mr. Brandt-Erichsen] cites one dairy farm south of the Lenz property and over 200 feet below a steep bluff. There is no evidence that odors from this facility are detectable on

> the Lenz property or that odors from this facility can travel up the bluff and commingle with odors from the Lenz composting operation. Under its current NOC authorization Lenz conducts daily odor inspections around its property and has an established odor management plan."

Additionally, the Order of Approval prohibits offsite odors from the composting operation, and includes operational requirements and emissions limits that will prevent odors. The concept of dairy farm odors and composting odors creating a cumulative combined odor offsite appears to assume that Lenz would not comply with the Order of Approval. *See also* SEPA 1 above. There is not a reasonable basis to conclude there will be significant odor impacts, including cumulative odor impacts, from this project.

Regarding the definition of the "site" for checklist purposes, there is nothing in the manner the checklist was completed that prevents the Agency from assessing the environmental impacts of the proposed project. The intention and requirement to conduct all composting operations on impervious surfaces and to not have discharge from the composting operations are clear.

Mr. Brandt-Erichsen's four arguments do not provide a persuasive or reasonable justification for the Agency to require an EIS in this case on those topics.

The DNS for 2014 Order of Approval is below:

Puget Sound Clean Air Agency

Notice of Construction No. 10494

Registration No. 28983

1904 3rd Ave, Ste 105
Seattle, WA 98101-3317

Telephone: (206) 343-8800
Fascimile: (206) 343-7522

DETERMINATION OF NONSIGNIFICANCE

Description of Proposal

Temporary Expansion of an existing Aerated Static Pile (ASP) and Mass Bed Composting Facility from 30,000 to 75,000 tons per year; of Agricultural Organics (Cow Manure, bedding, and Paunch), pre and post-consumer food waste, and yard waste.

Proponent

Lenz Enterprises Inc
PO Box 868
Stanwood, WA, 98292

Owner

Lenz Enterprises Inc
PO Box 868
Stanwood, WA, 98292

Location of proposal, including street address if any

Lenz Enterprises Inc, 5210 SR 532, Stanwood, WA, 98292

Lead Agency

Puget Sound Clean Air Agency

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIA) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

☐ There is no comment period for this DNS.

☒ This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal before March 17, 2014. Comments must be submitted by that date.

We have identified and adopted this document as being appropriate for this proposal after independent review. The document meets our environmental review needs for the current proposal and will accompany the proposal to the decision-maker.

Name of agency adopting document: **Puget Sound Clean Air Agency**

Contact person, if other than responsible official: **Claude Williams** Phone: **(206) 689-4066**

Responsible Official: **Steven Van Slyke**
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Date 2/5/14 Signature Steven M. VanSlyke

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Responses to Comments Received on the Issued DNS

From October 13 through October 27, 2021, the Agency accepted comments on the final Determination of Nonsignificance. The comments, and the Agency's response to them, are included below.

Comment SEPA 5

Peggy Kitting submitted the following comment:

> "Am I to understand that the SEPA-- State Environmental Policy Act--- that this checklist has determined to allow LENZ too increase 750,000 more tons of pollution in our community air?
> Is this the final decision and can you please tell me what more we can expect after all these months of waiting for a determination? Please answer my two questions."

Response:

The Agency has issued a Determination of Nonsignificance and a Notice of Construction Order for Approval for the increase of 75,000 (not 750,000) tons per year of composting capacity. Additionally, this is the increase in annual throughput for Lenz, not the increase in air emissions. After issuance of the Order of Approval and the DNS, and after issuance of any other permits that may be required from other agencies, Lenz will be permitted to process up to 150,000 tons per year, combined in the new and existing composting processes. The final Order of Approval and Determination of Nonsignificance may be appealed to the Pollution Control Hearings Board.

Comment SEPA 6

Ray Sheldon, Jr., of Tulalip submitted the following comment:

> "I worry about significant environmental impacts to air and water quality when facilities exceed their permit limits and it's unacceptable for violators to be ignored
> It seems like Lenz has exceeded the permit limit in the last 2 years since started!
> Has their Health issues been any violations to Lenz? Why not posted
> Lenz has a permit for 75,000 tons, it seems the addition doesn't add up! City of Seattle and transfer station Eastmont have walking floor trailers haul to Lenz site! Those numbers add up to total 100,000 at this time! I understand that Waste Management route trucks bring those loads almost 3,500 tons.
> I believed that 5,000 tons of waste which is animals left overs!
> Who audit Lenz records, County or Health Department? Then who does?
> Too approve the 150,000 tons per, doesn't make any sense! I tried to contact Stanwood they pushed into the Snohomish County! Of course, County pushed me onto Puget Sound Clean Air! Told me I had a few days to input on your next decision.
> Couple months ago I read some information about someone in your staff!
> Staff member had wrote the statement that land may used to be lived on by tribal people years ago in the past!
> I'm upset with the idea that my ancestors could have lived in the area! Puget Sound Air doesn't worry of any site water run off! My flow to the Salish Sea!
> I thought we learned the mistakes on Cedar Grove the wind blowing to sunnyside hills!
> My daughter had to moved to get clean air in Granite Falls!

Adding the limit to 150,000 could be dangerous and there's taking that tonnage back! Seems to me that big Corporate Companies are looking for cheaper rates, moving around Snohomish County to add more big mounds on companies property! If the tonnage comes from Seattle, if there isn't smell problem! They find a site in King County!! They never give us the numbers for outbound of finished product! There are 2 sites in Snohomish County that the big corporate companies used for piles and find others. Outside of Snohomish City and then Everett on Smith Island!
PS Clean Air problem! I hope they make a great decision for us! After this's land is filled, where next!
Maybe the future, Salish Sea Clean Air? Can tell I'm a tribal member!"

Response:

Regarding allegations of exceeding the facility's permitted capacity, the Agency is following its standard process to determine if a Notice of Violation is the appropriate recourse.

Regarding other concerns about air quality and water quality, the NOC process and the SEPA process provide opportunities for possible impacts to be reviewed. As was noted in previous comments, discharges to surface water and groundwater will be prohibited. Any discharges to surface water or groundwater would require permitting pursuant to 90.48 RCW and WAC 173-220 or WAC 173-216. The requirements in the Order of Approval related to capture and destruction of air pollutants and odor-causing compounds will prevent unacceptable impacts on air quality. *See also* SEPA 1. 2, 4a. 4c, 4e, 4f, 4g above and 9g, 9h, and 9i below.

Comment SEPA 7.
Matthew Cohen of the law firm Stoel Rives sent comments on behalf of his client, Cedar Grove Composting, Inc. The Cedar Grove letter refers to the DNS as "fatally flawed" and urges the Agency to withdraw the DNS and initiate scoping for an EIS. The Cedar Grove letter makes four main SEPA-related arguments, summarized below.

Comment SEPA 7a
Cedar Grove alleges that the SEPA checklist and NOC application understate the capacity increase that Lenz seeks. The same argument that was made by Mr. Brandt-Erichsen in item SEPA 3a, above, was made again by Cedar Grove and Mr. Cohen.

Response:
The Agency's response to this item is the same as it was for item SEPA 4a, above.

Comment SEPA 7b
Cedar Grove asserts that the Agency underestimated the VOC emissions from the Stage 2 windrows, by applying a "crude" split of 90 % of the uncontrolled emissions being attributed to the Stage 1 aerated static piles (and then captured and controlled through the biocover and biofilter), while the remaining emissions were attributed to the Stage 2 windrows.

Response:
This comment appears to be primarily of relevance for the NOC Order of Approval, for which the comment period occurred in March-April of 2021. The comment is not timely for consideration related to the Order of Approval. However, the comment will be considered in the context of the DNS.

The Agency used the best available information, along with its engineering professional, technical judgment, to make a reasonable estimate as to the emissions from the windrows. See also worksheet Section F above; comments OA 4, 10, and 11. Regardless, Cedar Grove fails to make a convincing argument as to why this assumption, even if it were faulty, would be sufficiently faulty as to merit an EIS, instead of a DNS, especially when considering the Order of Approval's prohibition on offsite composting odors.

Comment SEPA 7c
Cedar Grove asserts that the DNS fails to account for the emissions impacts of the feedstocks Lenz accepts. Cedar Grove contends that the uncertainties surround the numerical emissions factors used by the Agency are too crude for use in analyzing the environmental impacts of the Lenz expansion.

Response:
Again, this comment appears to be primarily of relevance for the NOC Order of Approval, for which the comment period occurred in March-April of 2021. The comment is not timely for consideration related to the Order of Approval. However, the comment will be considered in the context of the DNS.

See SEPA 7b. The Agency is tasked with evaluating the project as presented by the applicant, using the information at the Agency's disposal and exercising its technical engineering judgment. The Agency may not simply set an application aside, hoping for better emissions information to become available at some uncertain time. The Agency used the best information at its disposal to evaluate Lenz's proposed project. In fact, while Cedar Grove appears to criticize the Agency's emissions estimates and its methodology, it provides no persuasive evidence that better estimates are available or that the Agency's methodology was not reasonable or that evidence demonstrates that an EIS is required to evaluate air emissions from feedstocks. While the Agency's emissions estimates are indeed sensitive to its assumptions, the Agency's methodology and analysis reasonably identified and evaluated feedstock emissions and Cedar Grove's assertion that the Agency should have done the analysis differently does not support a determination that air emissions were not reasonably calculated for purposes of SEPA compliance

Comment SEPA 7d
Cedar Grove asserts that the Agency's calculations underestimate the impact on the public of the toxic air pollutant (TAP) increases Lenz seeks to permit. Cedar Grove raises questions related to the modeling of toxic air pollutants, such as formaldehyde, and the evidence that their concentrations will be below acceptable ambient source impact levels (ASILs). It asserts that the

Agency did not provide the modeling files related to the dispersion of TAPs during this DNS comment period.

Response:
Again, this comment appears to be only of relevance for the NOC Order of Approval, for which the comment period occurred in March-April of 2021. The comment is not timely for consideration related to the Order of Approval. These modeling files were provided during the comment period on the Order of Approval. Evaluation of TAP emissions for comparison with ASILs is squarely within the realm of New Source Review permitting and the Order of Approval process.

Regardless, the comment will be considered in the context of the DNS. The Agency's estimates of ambient concentrations of TAPs due to the project are described in the worksheet in Section H, above, follow standard practices by air authorities to evaluate TAP emissions, and are consistent with WAC 173-460. The Agency thoroughly summarized in the worksheet its evaluation of TAPs from this project as part of the Agency's evaluation of air emissions. There was no need to re-post these modeling files and the analysis of the TAPs emissions demonstrate there are no significant TAP emissions expected from this project.

Additionally, in the introduction to their letter, Cedar Grove suggested that any controls other than the Gore cover technology in use at Cedar Grove's Everett facility, and in partial use at Cedar Grove's Maple Valley facility, does not constitute Best Available Control Technology (BACT). This is squarely a comment related solely to the Order of Approval, so it is not timely. However, the Agency also notes that Cedar Grove's assertion that windrows should not be allowed, and that Gore technology should be mandated, would constitute a fundamental redefinition of the process used by Lenz. The concept of "redefining the source" or materially altering an applicant's application is contrary to the standard practice in BACT review.

Comment SEPA 8
Svend Brandt-Erichsen requested that the Agency post additional supplementary materials. He wrote:

> "The Agency posted the NOC Worksheet on the Lenz project web page, but you omitted Appendices A through F of the Worksheet. These appendices provide the evidentiary support for most of the Agency's SEPA determinations. For instance, PSCAA's determination that the proposed project will not generate any additional vehicle trips per day is based on the Lenz NOC application, Appendix A to the worksheet, and a transportation analysis, Appendix E to the worksheet. See NOC Worksheet at 10. The NOC worksheet also indicates that Appendix D (Air Quality Technical Report 2nd Addendum) provides key assumptions regarding the emission calculations that PSCAA has relied upon in the NOC worksheet and in issuing a preliminary DNS. See NOC Worksheet at 28-30. PSCAA's determination that increases in toxic air pollutant emissions will not exceed the ASILs is based on the Agency's modeling files, Appendix F to the worksheet. See NOC Worksheet at 35. The NOC Worksheet also has several

documents embedded within it (Agency report on compost VOC emission factors, updated emission calculations for the Lenz application) that have not been posted.

To understand the foundations for the preliminary DNS, so that we can develop informed comments on the DNS, any commenter needs access to the appendices to the NOC Worksheet."

Response:
The Transportation Analysis was one of the documents posted on the Agency's website as a supporting document during the DNS comment period. As was noted previously, the documents raised by Mr. Brandt-Erichsen are related to the conditions of the Order of Approval, for which the Agency accepted comments in March and April of 2021. The Agency's summary and evaluation of these documents in the worksheet was adequate to understand the Agency's reasoning behind issuing a DNS.

Additionally, Mr. Brandt-Erichsen submitted comments during the March-April comment period on the Order of Approval, including comments related to the appendices in question related to the topics of traffic and stormwater, among others, suggesting that he already had the documents which he asked the Agency to re-post.

Comment SEPA 9
Svend Brandt-Erichsen submitted additional comments related to various aspects of the Agency's DNS. These are summarized below.

Comment SEPA 9a
Mr. Brandt-Erichsen asserts that if Lenz is currently operating at levels that have not been evaluated under SEPA, then the "baseline" for analyzing the increase in truck trips due to the increase in capacity should be based on a current capacity of 30,000 tons per year, not 75,000 tons per year.

Response:
See the Agency's response to item SEPA 4d, above. The Order of Approval places enforceable limits on truck trips to and from the Lenz facility. Regarding the "baseline" for this analysis, see the Agency's response to item SEPA 3a, above.

Comment SEPA 9b
Mr. Brandt-Erichsen asserts that the applicant's SEPA checklist did not adequately define the area of the proposed project within the Lenz property.

Response:
See the Agency's response to item SEPA 4g, above. *See also* Tupper's Nov.30, 2021, letter describing site conditions.

Comment SEPA 9c

Mr. Brandt-Erichsen asserts, "In environmental checklist Section B.1.a. and B.1.b. the site (the permitted area) is listed as being **flat** with steepest slopes being **less than 2 percent** (emphasis added). These statements are incorrect. The site has and will have slopes that are steeper than 2 percent."

Response:

While the Lenz property does have steep slopes, the location of the composting facility within the Lenz property is rather flat. See SEPA 4e, 4f, 4g, 9b above and 9e below. Based on the location of the composting on the Lenz property and the conditions in the OA, no significant slope impacts are expected.

Comment SEPA 9d

Mr. Brandt-Erichsen asserts that Lenz vastly understated the amount of soils other than glacial till on the property, and that these other soils are significantly more permeable than glacial till, which would lead to infiltration of groundwater and discharges to surface waters.

Response:

Much like items SEPA 4e, 4f, and 4g, above, if infiltration to groundwater or discharges to surface waters of water related to the composting operation do occur, they would be in violation of the Order of Approval and Department of Ecology regulations. Any discharges to surface water or groundwater would require permitting pursuant to 90.48 RCW and WAC 173-220 or WAC 173-216. The types of water impacts Mr. Brandt-Erichsen describes are prohibited and no significant water or stormwater impacts are expected.

Comment SEPA 9e

Mr. Brandt-Erichsen asserts that Lenz's statement in the SEPA checklist that there is no history of unstable soils in the immediate vicinity of the site is erroneous. He refers to a 2017 hydrogeologic report that shows landslide deposits near the south slopes of the property. He also notes, "The site has an infiltration pond that loads the underlying perched aquifer causing high pore water pressures. Water levels in well MW-1 located near infiltration pond fluctuate over 20 ft annually." He quotes the 2017 report, "two concentrated springs have been identified near the southern boundary of the project site…. (and) there are numerous diffuse seeps and wet areas along the slope". He then asserts that the presence of seeps and springs on a steep slope that appears to have a history of landslides would be a risk factor for slope instability.

Response:

The composting operations are sufficiently removed from the steep slope that there does not appear to be an increased risk of slope instability or landslide near or due to the composting operation. *See also* SEPA 4e, 4f, 4g, 9c, 9d above.

Additionally, Tupper's November 30, 2021, letter states: "Contrary to the suggestion in the comment, 'landslide deposits' are not the same as 'unstable slopes.' The soils and underlying

strata surrounding the Lenz Sand and Gravel Mine have been in place since the last Ice age (approximately 10,000 years). This would indicate stable soils."

Comment SEPA 9f
Mr. Brandt-Erichsen asserts that, while the SEPA checklist states that there are no surface water bodies in the immediate vicinity of the site, there is a stream on the west side of the site and a wetland at the northwest corner of the site. There are also springs and a ditch at the base of the slope on the south side of the property. He asserts, "Site work is planned within 200 ft of some of these surface water bodies contrary to the statement in environmental checklist Section B.3.a.2."

Response:
This comment appears to be related to item SEPA 4g, above, in which Mr. Brandt-Erichsen claims there is a lack of clarity in the checklist regarding the extent of the composting site itself in contrast to the Lenz property as a whole. The stream, wetland, springs, and ditch are not located on the portion of the property where the composting and associated activities will occur. Again, discharges to groundwater or surface water will be prohibited, and impacts to these waters would be a violation of the Order of Approval and Department of Ecology regulations. These regulations require that all active composting occur on impervious surfaces in order to collect all leachate from the active composting area, which includes all stormwater that falls in the active composting area. This leachate is either reused in the composting process or collected in a lined pond. None of the leachate or stormwater associated with the active composting area will be discharged.

Comment SEPA 9g
Mr. Brandt-Erichsen asserts, "In environmental checklist Section B.3.c.1. it is indicated that all stormwater will be collected and reused on site. However, much of the stormwater at the site is directed to a stormwater infiltration pond. This infiltration pond is renamed as a retention pond in the Lenz 2019 Solid Waste Permit Modification and Notice of Construction Modification Engineering Report. However, we did not see an indication that this pond will be lined."

Response:
Any stormwater that falls in the active composting area is required to be handled as leachate, per WAC 173-350-220. The only stormwater that would be directed to the infiltration pond would be stormwater that does not fall on or enter the composting area. Hence, it would not be affected by this project.

Any discharges to surface water or groundwater would require permitting pursuant to 90.48 RCW and WAC 173-220 or WAC 173-216. Again, discharges to groundwater or surface water are prohibited by the Order of Approval, and impacts to these waters would be a violation of the Order of Approval and state water regulations. *See also* SEPA 4e, 4f, 4g.

Additionally, Mr. Tupper's November 30, 2021, letter states the following:

> "A recent Washington Department of Ecology inspection of the site, from both a Sand and Gravel Mine General Permit and an Industrial Permit perspective (even though Lenz

> is not required to have an Industrial Permit) clearly indicates that the site is not only in compliance but also highly functioning with regard to both leachate and stormwater control. Ecology has concluded that NPDES permit coverage is not required for any aspect of the existing or proposed expansion of the composting operations."

Comment SEPA 9h

Mr. Brandt-Erichsen asserts, "In environmental checklist Section B.3.c.2. it is indicated that waste material could not enter the ground. However, the onsite infiltration pond readily discharges to the underlying perched aquifer which in turn discharges to the onsite stream. It appears from aerial photographs that this pond has high levels of nutrients as it is covered at times with green algal scum, like the onsite leachate pond. Consequently, the existing site stormwater pond is a potential or likely pathway for waste material to be discharged to ground. A green film over stormwater ponds is shown on the Google Earth photographs … for various dates. To ensure that waste material is not getting into groundwater and then into the nearby springs and streams, the nearby streams and springs should be sampled for nutrients and indicator parameters to ensure that state Surface Water Quality Standards are not being violated by the project."

Response:

Any stormwater that falls in the active composting area is required to be handled as leachate, per WAC 173-350-220. The only stormwater that would be directed to the infiltration pond would be stormwater that does not fall on or enter the composting area. Hence, it would not be affected by this project.

Any discharges to surface water or groundwater would require permitting pursuant to 90.48 RCW and WAC 173-220 or WAC 173-216. Again, discharges to groundwater or surface water will be prohibited, and impacts to these waters would be a violation of the Order of Approval and state water regulations.

Additionally, Tupper's November 30, 2021, letter states the following:

> "The 'green algal scum' referenced in this comment is Lemna Minor (common name Duckweed), a native Pacific Northwest plant species. Growth of Duckweed indicates that water quality conditions are good enough to support plant life and indicative of many ponds in western Washington."

See also SEPA 4e, 4f, 4g, 9c, 9d, 9e above.

Comment SEPA 9i

Mr. Brandt-Erichsen asserts, "Environmental checklist section B.3.d claims that all surface water will be contained, controlled, treated and reused. The above aerial photos show how much the footprint of the composting operation has increased since 2011, before the increase in processing volume that is the subject of this action. The photos show that the facility already is storing compost, in various stages of processing, outside the area of stormwater control."

Response:
The Order of Approval's prohibitions on discharges will go into effect upon issuance of the Order. The Order requires that the composting operations occur only on areas with stormwater control. Again, it would not be reasonable for the Agency to assume an Order of Approval will be violated by a source. Additionally, WAC 173-350-220(4)(f) requires that all "[i]ncoming feedstocks, active composting, and curing materials must be placed on pads that prevent contamination of soil or groundwater underlying or adjacent to the pads." Thus Lenz's activities will occur on impermeable surfaces as required by rule. *See also* SEPA 4e, 4f, 4g, 9c, 9d, 9e above.

SEPA Summary
None of the comments received by the Agency provides a persuasive justification for the Agency to withdraw the DNS or require an EIS in this case.