

Request for Comments

Proposed Composting Registration Permit Renewal for Yamhill County Mushrooms Composting Facility

Comments due: 5 p.m., June 14, 2019

Project location: Yamhill County Mushrooms Composting Facility, 7246 NW Lilac Hill Rd., Yamhill, Yamhill County

Proposal: The Oregon Department of Environmental Quality proposes to renew Yamhill County Mushrooms Composting Facility's solid waste composting facility registration permit. The permit would authorize the owner to continue to operate a composting facility in compliance with the requirements, limitations and conditions set forth in the permit. Yamhill County Mushrooms, Inc. owns and operates the facility.

Highlights: The subject facility is a mushroom farm, growing white button, cremini and portobello mushrooms. The facility composts feedstocks to create the growing medium, or substrate, for growing the mushrooms. Spent mushroom substrate is steamed in an enclosed building for 24 hours at a sustained temperature of 155 degrees, a process that effectively pasteurizes the mushroom compost, which is then sold to various landscape supply companies.

This facility accepts Type 1 and Type 2 feedstocks, consisting of wheat straw bales, dry chicken manure, alfalfa screenings, canola meal and gypsum. Waste pieces of mushrooms that are not harvested for sale are collected and put back into the compost operation as a feedstock. This facility is not open to the public. Based on a risk evaluation, DEQ determined the permitted operations pose a low risk to the environment and public health. Low-risk composting facilities are required to operate under a Composting Facility Registration Permit. Current operations would not change under the proposed permit renewal.

DEQ has not documented compliance issues at this facility since the permit was last renewed in 2011. The permit holder is prohibited from accepting materials for composting that are not specifically authorized, unless the materials have been approved in accordance with the requirements of this permit. The permittee must not accept any wood waste that does not meet the definition of wood waste in Oregon Administrative Rule 340-093-0030. The permit holder must not accept unsorted, mixed domestic solid waste as a feedstock or for disposal at the composting facility. The permit holder must not accept any materials listed in Oregon Administrative Rule 340-093-0040, as prohibited from disposal at solid waste disposal sites, including but not limited to hazardous waste as defined in Oregon Revised Statute 466.005 and Oregon Administrative Rule 340, Division 101.

How to comment: Send comments to DEQ Permit Coordinator, Denise Miller, at 165 E. Seventh Ave., Suite 100, Eugene, OR 97401 or miller.denise@deq.state.or.us.

Where can I get more information? View the draft permit and permit evaluation by scrolling down in this document or going to <http://www.oregon.gov/deq/Get-Involved/Pages/Public-Notices.aspx>. To request a copy be mailed to you, contact Denise Miller, at 541-687-7465 or miller.denise@deq.state.or.us. For questions on the permit, please contact Craig Filip at 541-686-7868 or filip.craig@deq.state.or.us.

If you want to review the application and related documents in person at the DEQ office located at 165 E. Seventh Ave., Suite 100, Eugene, OR 97401, please contact Denise Miller, at 541-687-7465 or miller.denise@deq.state.or.us to set up an appointment.

The next step: DEQ considers and responds to all comments received and may modify the proposed permit based on comments.

Alternative formats: DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.



State of Oregon
Department of
Environmental
Quality

Western Region Materials Management Program

165 E Seventh Ave.
Eugene OR 97401
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800-849-8477
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Contact: [Denise Miller](mailto:Denise.Miller@deq.state.or.us)
Email: miller.denise@deq.state.or.us

www.oregon.gov/DEQ

Notice Issued: 5/14/2019
By: Denise Miller



SOLID WASTE DISPOSAL SITE PERMIT: Composting Facility Registration – Aerobic Composting

State of Oregon
Department of
Environmental
Quality

Oregon Department of Environmental Quality
165 E. Seventh Ave., Suite 100
Eugene, OR 97401-3049
541-687-7465

Issued as authorized by ORS 459.245 and in accordance with the provisions of [Oregon Revised Statutes Chapter 459, 459A](#), [Oregon Administrative Rules 340 Divisions, 90, 93, 95, 96](#) and [97](#) and subject to the Land Use Compatibility Statement referenced below.

Permittee:

Yamhill County Mushrooms, Inc.
P.O. Box 219
Yamhill, OR 97148
503-662-4131

Property Owner:

Yamhill County Mushrooms, Inc.
P.O. Box 219
Yamhill, OR 97148
503-662-4131

Facility name and location:

Yamhill County Mushrooms, Inc.
7246 NW Lilac Hill Rd.
Yamhill, OR 97148
Yamhill County

Operator:

Yamhill County Mushrooms, Inc.
Leonides Perez
503-662-4131
Leo@ycmushrooms.com

ISSUED IN RESPONSE TO:

- A solid waste disposal site, composting renewal application received Dec. 20, 2018
- A Land Use Compatibility Statement from Yamhill County and dated Jan. 24, 2000
- Verification that the facility is compatible with the solid waste management plan from Yamhill County

The determination to issue this permit is based on findings and technical information included in the solid waste disposal site permit renewal application and permit record.

ISSUED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

Brian Fuller, Manager
Materials Management and Hazardous Waste
Western Region

Date

Permitted Activities

Until this permit expires or is modified or revoked, the permittee is authorized to operate and maintain a solid waste disposal site for composting activities in conformance with the requirements, limitations, and conditions set forth in this document, including all attachments.

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ALLOWABLE ACTIVITIES

1.0 Authorizations

1.1 Authorization to receive specific types of feedstocks

This permit authorizes the permittee to accept the following feedstock types for composting activities, at the disposal site named Yamhill County Mushrooms, Inc. (facility):

- Type 1
- Type 2

Reference: [OAR 340-093-0030](#),

1.2 Authorization to accept other feedstock types for composting

The permittee must not accept any feedstocks excluded from the above authorization at the facility without first submitting the necessary information to DEQ for review, and obtaining DEQ approval in writing.

Reference: [OAR 340-096-0060](#)

1.3 Authorization of activities

The permittee must conduct all facility activities in accordance with the provisions of this permit until permit termination. Once approved by DEQ, any permit-required plans become part of the permit by reference.

Reference: [OAR 340-093-0110](#) and [OAR 340-093-0113](#)

1.4 Duration of authorization

The authorization for the permittee to accept authorized feedstocks for composting activities will end at the time of site closure, permit termination or if the permit expires and DEQ has not received a timely permit renewal application. After that time, feedstock must not be accepted.

Reference: [OAR 340-093-0115](#)

1.5 Water quality activities

The permittee is authorized to construct, install, operate and maintain a composting facility leachate and/or stormwater collection and/or treatment system provided these activities are done in accordance with plans and specifications approved in writing by DEQ.

Any discharge of leachate, wastewater, or stormwater to Waters of the State is prohibited unless as authorized by a DEQ water quality permit.

Reference: [OAR 340-096-0120](#) and [OAR 340-096-0130](#)

2.0 Prohibitions

2.1 Prohibited feedstocks or waste

The permittee is prohibited from accepting materials for composting that are not specifically authorized in Section 1.1 of this permit, unless the materials have been approved in accordance with the requirements of Section 1.2 of this permit. Prohibited material include but are not limited to:

- Painted, treated wood
- Unsorted, mixed solid waste
- Type X feedstocks
- Any materials that are listed in [OAR 340-093-0040](#), as prohibited from disposal at solid waste disposal sites, including but not limited to hazardous waste as defined in ORS 466.005 and OAR 340, Division 101
- Biosolids, except for Class A Exceptional Quality

2.2 Open burning

The permittee must not conduct any open burning at the facility.

Reference: [OAR 340-264-0030](#) (defines open burning)

OPERATIONS AND DESIGN

3.0 Performance Standards

3.1 Design, construction, and operation

The permittee must design, construct and operate the composting facility in a manner that does not cause a discharge of leachate or stormwater from the facility to surface water, except when such discharge is in compliance with a discharge permit issued by DEQ.

Reference: [OAR 340-096-0070\(1\)](#)

3.2 Engineered structures

The permittee must design and manage the engineered structures that collect and dispose of leachate or stormwater in compliance with the applicable requirements of [OAR 340-096-0130](#) *Special Rules Pertaining to Composting: Biogas, Liquid Digestate, Leachate Collection Design and Management Requirements*.

Reference: [OAR 340-096-0070\(2\)](#)

3.3 Groundwater protection

The permittee must design, construct and operate the composting facility in a manner that does not cause a likely adverse impact to groundwater under [OAR 340 Division 40](#).

Reference: [OAR 340-096-0070\(3\)](#)

3.4 Odors

The permittee must design, construct and operate the composting facility in a manner that, to the greatest extent practicable, is consistent with proper facility design and operation, controls and minimizes odors that are likely to cause adverse impacts outside the boundaries of the facility.

Reference: [OAR 340-096-0070\(4\)](#)

3.5 Pathogen reduction

The permittee must design, construct and operate the composting facility in a manner that achieves human pathogen reduction as required by [OAR 340-096-0140](#) *Special Rules Pertaining to Composting: Pathogen Reduction*.

Reference: [OAR 340-096-0070\(5\)](#)

3.6 Vectors

The permittee must design, construct and operate the composting facility in a manner that controls or prevents propagation, harborage or attraction of vectors, including but not limited to rats, birds and flies.

Reference: [OAR 340-096-0070\(6\)](#)

3.7 Other compliance

The permittee must comply with all other applicable laws and regulations.

Reference: [OAR 340-096-0070\(9\)](#)

4.0 Pathogen reduction

4.1 Pathogen limits

The permittee must ensure that all composted material meet the following pathogen limits:

Composted material produced from Type 1 or Type 3 feedstock, or a mix of Type 1 and Type 3 feedstock with less than 50 percent by volume of Type 2 feedstock, must meet the limits for either salmonella or fecal coliform:

Parameter	Limitations
Fecal Coliform	Less than 1,000 Most Probable Number (MPN) per gram of total solids (dry weight)
Salmonella	Less than 3 Most Probable Number (MPN) per 4 grams of total solids (dry weight)

Composted material produced from feedstock containing more than 50% by volume of Type 2 feedstock analysis must meet the limit for fecal coliform:

Parameter	Limitations
Fecal Coliform	Less than 1,000 Most Probable Number (MPN) per gram of total solids (dry weight)

Reference: [OAR 340-096-0140](#)(2)

4.2 Testing frequency

The permittee must test composted material with the minimum frequency provided below. Samples must consist of a composite from finished compost.

Amount and Type of Compost Produced Annually	Minimum Frequency
Less than 2,500 tons of composted material from Type 1 and/or 2 feedstocks	Once a year
Greater than 2,500 tons of composted material from Type 1 and/or 2 feedstock	Every 5,000 tons of feedstock used <u>or</u> a maximum of once every three months
Less than 2,500 tons of composted material from Type 3 feedstocks	Once every 4 months
Greater than 2,500 tons of composted material from Type 3 feedstocks	Every 5,000 tons of feedstock used <u>or</u> monthly

Reference: [OAR 340-096-0140](#)(4)

5.0 Engineered structures

5.1 Construction requirements

The permittee must perform construction in accordance with the approved plans and specifications, including all conditions of approval. Any significant amendments to those plans and specifications must be approved prior to construction in writing by DEQ.

Reference: [OAR 340-096-0130](#)(4)

5.2 Construction documents

If required by DEQ, prior to initiating construction, the permittee must submit and receive written DEQ approval of complete construction documents for the project to be constructed. The construction documents submitted must include a Construction Quality Assurance plan describing measures that will be taken to monitor and ensure that the quality of materials and the work performed by the constructor complies with project specifications and contract requirements.

Reference: [OAR 340-096-0130](#)(5)

5.3 Construction certification report submittal

DEQ may require, upon completion of major or critical construction at the facility, the permittee submit to DEQ a final project report signed by the project engineer or manager as appropriate. The report must certify that construction was completed in accordance with the approved plans including any approved amendments thereto.

Reference: [OAR 340-096-0130](#)(6)

5.4 Approval to use

The permittee must not accept feedstocks for storage, processing or composting in newly constructed facilities or areas until DEQ has approved the Construction Certification Report. If DEQ does not respond in writing to the Construction Certification Report within 30 days of its receipt, the permittee may accept feedstock at the facility in the newly constructed facilities or areas.

Reference: [OAR 340-096-0130](#)(7)

6.0 Special Conditions

6.1 Conditions of approval

This registration permit includes the following conditions of approval:

- Implementation of the updated Odor Minimization Plan, submitted to and approved by DEQ on Apr. 11, 2019.

Should these conditions change during the term of this permit, DEQ may revoke or modify this registration, or may require the facility to submit updated information for environmental risk screening pursuant to OAR 340-096-0080.

Reference: [OAR 340-096-0100](#)(b)

7.0 Site Operations

7.1 General site operations

The permittee must at all times maintain and properly operate all equipment and facilities to prevent discharges, health hazards, and nuisance conditions and in accordance with the provisions of this permit.

7.2 Waste removal

The permittee must remove all waste from the facility at least as often as necessary to prevent malodors, unsightliness, and attraction of vectors or other environmental concerns.

Reference: [OAR 340-093-0210](#)

7.3 Containers

The permittee must clean all on-site containers, as needed, to maintain a sanitary operating environment and to prevent malodors, unsightliness and attraction of vectors.

Reference: [OAR 340-093-0210](#)

7.4 Equipment

The permittee must have readily available equipment of adequate size, and design, to properly operate the facility at all times and to maintain compliance with all permit conditions.

7.5 Roads

The permittee must construct and maintain all weather roads from the public highways or roads, to and within the facility. The roads must be constructed and maintained to prevent traffic congestion, traffic hazards, dust, mud, and trackout.

7.6 Vehicles and truck covers

All vehicles and equipment operated by the permittee and using public roads, must be constructed, maintained and operated so as to prevent leaking, shifting or spilling of feedstocks or finished compost or other products while in transit. The permittee must notify all incoming waste haulers that trucks containing loads must be covered or suitably cross-tied to prevent any load loss during shipment.

7.7 Litter control

Litter that results from the composting facility operation must be controlled such that the entire composting facility and adjacent lands are maintained virtually free of litter at all times. Any debris from the facility must be retrieved and properly disposed of as soon as possible that same operational day.

7.8 Dust

The permittee must reduce or avoid dust and prevent dust from leaving the facility.

7.9 Drainage

The permittee must divert surface drainage around or away from feedstock handling and grinding areas and compost storage areas. The permittee must maintain surface water diversion ditches or structures in a serviceable condition and free of obstructions and debris at all times. Any significant damage must be reported to DEQ and repairs made as soon as possible.

7.10 Wastewater and stormwater management

The permittee must operate the facility in a manner that minimizes leachate and other wastewater production to the maximum extent practicable. The permittee must manage wastewater and stormwater to prevent malodors, public health hazards and off-site discharge. Any wastewater or stormwater discharges to Waters of the State must be authorized under a WPCF and/or NPDES permit.

Reference: [OAR 340-093-0210](#)

7.11 Feedstock unloading area

The area(s) used by the public for unloading feedstocks must be clearly defined by signs, fences, barriers or other devices.

7.12 Public access

Public access to the facility must be controlled, as necessary, to prevent unauthorized entry and dumping.

7.13 Legal control of property

The permittee must maintain legal control of the composting site property, including maintaining a current permit, contract or agreement that allows the operation of the facility if the site is not owned by the permittee.

Reference: [OAR 340-093-0050](#) and [OAR 340-093-0070](#)

7.14 Fire protection

Arrangements must be made with the local fire control agency to immediately acquire their services when needed. The permittee must provide adequate on-site fire control protection, as determined through the local fire control agency. Unauthorized fires must be immediately extinguished and reported to DEQ within 24 hours.

7.15 Signs

The permittee must post signs at the facility which are clearly visible and legible, providing the following information: name of composting facility, emergency telephone number, days and hours of operation, solid waste permit number and operator's address.

7.16 Vector control

The permittee must provide rodent and insect control measures, as necessary, to prevent vector production and sustenance.

7.17 Complaints

The permittee must investigate and attempt to resolve all complaints it receives regarding facility operations by doing the following:

- Contact the complainant within 24 hours to discuss the problem
- Keep a record of the complaint, name and phone number of the complainant (when possible), date complaint was received and date of, and response by, the facility operator
- Immediately initiate procedures at the facility, when possible, to resolve the problem identified by the complainant
- For odor, litter or dust complaints, the permittee must report to DEQ as soon as complaints are received at the facility from five different businesses and/or individuals about a given event or if an odor event lasts longer than 24 hours without resolution or mitigation.

Reference: [OAR 340-096-0150](#)(3) and (4)

7.18 Permit display

The permittee must display this permit, or a photocopy thereof, where operating personnel can readily refer to it.

GENERAL CONDITIONS

8.0 Recordkeeping and Reporting

8.1 Records

The permittee must keep copies of all records and reports for a minimum of five years from date initially placed in the facility operating record. In the case of a change in ownership of the composting facility, the new owner is responsible for ensuring that the records are transferred from the previous owner and maintained for the required five years.

Reference: [OAR 340-096-0100](#)(3)(g)

8.2 Access to records

The permittee must make all records and reports related to the permitted facility available to DEQ upon request.

Reference: [OAR 340-096-0100](#)

8.3 Feedstocks data collection

The permittee must collect information about the amount of each type of feedstock received for composting for each calendar year. The feedstocks must be separately identified and categorized as originating either in or out-of-state:

Reference: [OAR 340-096-0100](#), [OAR 340-097-0110](#) and [OAR 340-090-0100](#)

8.4 Operational records

The permittee must keep the following information on file and make records available to DEQ staff upon request:

- Information on the annual amount of contamination and contaminated overs sent for disposal.
- Information demonstrating assessment of composting processing parameters required in [OAR 340-096-0100](#).

Reference: [OAR 340-096-0100](#)

8.5 Annual data reporting

- Information collected on feedstocks accepted for composting at the facility must be reported annually on the DEQ form titled: *Composting Facility Report*. This completed form must be submitted to DEQ at the address on the form each year.

Reference: [OAR 340-096-0100](#)

8.6 Non-compliance reporting

In the event the permittee violates any condition of this permit or of DEQ's rules or statute, the permittee must immediately take action to correct the violation and notify DEQ within 24 hours at: DEQ's Western Region Materials Management Program Office at 541-687-7465.

Reference: [OAR 340-096-0100](#)

8.7 Oil and hazardous material spill response and reporting

The permittee must immediately clean up any spill of oil or hazardous material. If the spill is of a reportable quantity, the permittee must immediately report the spill to the Oregon Emergency Response System at 1-800-452-0311 and DEQ.

Reportable quantities include:

- Any amount of oil spilled to waters of the state;
- Oil spills on land in excess of 42 gallons;
- 200 pounds (25 gallons) of pesticide residue;
- Hazardous materials that are equal to, or greater than, the quantity listed in the [40 CFR Part 302](#) (List of Hazardous Substances and Reportable Quantities), and amendments adopted before July 1, 2002. For a complete list of hazardous materials required to be reported, please refer to [OAR 340-142-0050](#).

9.0 Permit Modification

9.1 Modification

At any time during the life of the permit, DEQ or the permittee may propose changes to the permit.

Reference: [OAR 340-093-0070](#) and [OAR 340-093-0113](#)

9.2 Modification and revocation by DEQ

DEQ may, at any time before the expiration date, modify, suspend or revoke this permit in whole or in part in accordance with [ORS 459.255](#) for reasons including, but not limited to the following:

- Violation of any terms or conditions of this permit or any applicable statute, rule, standard or order of the Environmental Quality Commission;
- Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- A significant change in the quantity or character of feedstock received or in the operation of the facility.
- Non-compliant operation of the composting site; or
- A significant change in the composting process.

Reference: [OAR 340-093-0113](#) and [OAR 340-093-0115](#)

9.3 Modification by permittee

The permittee must apply for a modification to this permit if a significant change in facility operations is planned, or there is a deviation from activities described in this permit. The permittee cannot implement any change in operations that requires a permit modification prior to receiving approval from DEQ.

Reference: [OAR 340-093-0070](#)

9.4 Fee payment

DEQ may require the permittee to submit an Engineering review fee for permit modifications that require significant modifications to the Engineering Plans. If required, the permittee must submit the fee to DEQ with the proposed plan.

Reference, [OAR 340-096-0100](#), [OAR 340-097-0120](#)(4), and [OAR 340-097-0120](#)(5)

9.5 Change in name or address

The permittee must immediately report to DEQ in writing any name or address change of the owner or operator of the facility or property.

Reference: [OAR 340-096-0100](#)(3)

9.6 Transfer, sale or exchange of permit or facility

The permittee must submit a permit modification application for any transfer, sale, or exchange of the permit or facility prior to completing the transaction.

All permit conditions will remain in effect until such time as a new or modified permit is issued by DEQ. The permittee will remain responsible for the failure by the new owner to abide by the terms of any permit conditions resulting in a violation until a new permit is issued by DEQ.

Reference: [OAR 340-093-0070](#)

9.7 Public participation

Significant changes in the permit may be subject to the issuance of a public notice as set forth in DEQ rules for public notification.

Reference: [OAR 340-093-0100](#)

10.0 Administration

10.1 Definitions

Unless otherwise specified, all terms are as defined in [OAR 340-093-0030](#).

10.2 Submittals

Unless otherwise specified on the forms provided by DEQ, all submittals required under this permit must be sent to:

Materials Management Program Manager
Oregon Department of Environmental Quality
165 E. Seventh Ave., Suite 100
Eugene, OR 97401-3049
541-687-7465

10.3 Permit term

The effective date of this permit is the date this document is signed by DEQ. The expiration date of the permit is indicated at the top right of this document. The authorization to accept solid waste at the facility will end when this permit expires, is terminated, or revoked; after that time the permittee cannot accept solid waste at the facility.

Reference: [OAR 340-093-0070](#) and [OAR 340-093-0115](#)

10.4 Permit renewal

The permittee must submit an application for permit renewal if the permittee intends to continue operation beyond the expiration date of this permit. A complete solid waste disposal site permit renewal application must be submitted to DEQ **at least 180 days** before the existing permit expires. All permit conditions will

remain in effect until such time as a new permit is issued by DEQ. Failure by a permittee to abide by the terms of any permit conditions will be a violation.

Reference: [OAR 340-093-0070](#) and [OAR 340-093-0115](#)

10.5 Permittee initiated termination of permit

After facility closure, the permittee must request, in writing, to DEQ that the permit be terminated. Permittee must demonstrate to DEQ that the facility no longer requires a permit under [OAR 340-093-0050](#) before DEQ will terminate the permit.

Reference: [OAR 340-093-0050](#) and [OAR 340-093-0115](#)

10.6 Property rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights.

10.7 DEQ liability

DEQ, its officers, agents, or employees do not sustain any liability on account of the issuance of this permit or on account of the construction, maintenance, or operation of facilities pursuant to this permit.

10.8 Documents superseded

This document is the primary solid waste permit for the facility, superseding all other solid waste disposal site permits issued for this facility by DEQ.

Reference: [OAR 340-093-0115](#)

10.9 Binding nature

Conditions of this permit are binding upon the permittee. The permittee is liable for all acts and omissions of the permittee's contractors and agents.

Reference: [OAR 340-093-0050](#)

10.10 Access to disposal site

The permittee must allow representatives of DEQ access to the facility at all reasonable times, for the purpose of:

- Performing inspections;
- Surveys;
- Collecting samples;
- Obtaining data;
- Reviewing records;
- Carrying out other necessary functions related to this permit.

Reference: [OAR 340-093-0050](#)

10.11 Other compliance

Issuance of this permit does not relieve the permittee from the responsibility to comply with any other applicable federal, state or local laws or regulations.

10.12 Penalties

Violation of any condition of this permit or any incorporated plan may subject the permittee to civil penalties for each day of each violation.

Reference: and [ORS 459.995 and ORS 468.090-140](#).

END PERMIT CONDITIONS

DRAFT



Permit Evaluation and Overview Yamhill County Mushrooms Composting Facility

Oregon Department of Environmental Quality
Western Region - Eugene Office
165 E. 7th Ave., Suite 100
Eugene, OR 97401
Contact: Craig Filip
541-686-7868
Filip.craig@deq.state.or.us

Proposed Permit

The Department of Environmental Quality proposes to renew a solid waste disposal site permit for the Yamhill County Mushrooms Composting Facility to operate at 7246 NW Lilac Hill Rd., Yamhill, Oregon.

Permit Writer

Craig Filip
Western Region – Eugene Office
541-686-7868
filip.craig@deq.state.or.us

Permit Category

Solid Waste Disposal Site - Composting Facility Registration: This permit authorizes the facility to accept and process for composting certain feedstocks for recovery, as defined in Oregon Revised Statute 459.005, with limitations as defined in the permit.

Source Location

Yamhill County Mushrooms
7246 NW Lilac Hill Rd., Yamhill, Oregon, Township 2S, Range 4W, Section 21, Tax Lot 00600.
Yamhill County
Latitude: North 45.2223 Longitude: West 123.1120

Coverage and Eligibility

The subject facility is currently operating under DEQ Solid Waste Disposal Site, Composting Facility Registration Permit #1431, renewed June 15, 2011 and expiring on June 30, 2019. The permittee has applied for a permit renewal and the permit, if necessary, can be administratively extended until action is taken on the new application. The renewed permit becomes effective on the date it is signed by DEQ.

The permit is issued in accordance with the provisions of Oregon Revised Statute Chapter 459; Oregon Administrative Rules 340, Divisions 90, 93, 95, 96 and 97; and subject to the Land Use Compatibility Statement signed by Yamhill County Planning Division. as referenced in the permit.

DEQ staff evaluated the Yamhill County Mushroom Composting Facility for potential environmental and human health risks including risks to surface water and groundwater and possible odor impacts – see below. Based on this evaluation DEQ determined the facility and composting operation pose a low risk to the environment and public health. Low risk compost facilities are required to operate under a Compost Registration Permit.

What is DEQ Proposing?

DEQ is proposing to renew a Composting Facility Registration Permit for the Yamhill County Mushroom Composting Facility. The permit would allow the permittee to continue to operate and maintain a composting facility in conformance with the requirements, limitations and conditions set forth in the permit. The permit regulates the handling and processing of approved feedstocks received for recovery at the facility.

What is the Yamhill County Mushroom Compost Facility?

The subject facility is a mushroom farm, growing white button, Crimini and Portobello mushrooms. The facility lies on the floor of a small valley approximately three miles north of the City of Yamhill, Oregon. The facility is surrounded by pastureland, bordered by two roads and accessible by a single road. The nearest homes are roughly 1/3 miles away.

The facility composts feedstocks to create the growing medium, or substrate, for the mushrooms. Feedstocks are mixed together and the piles are built and composted, and finished compost is put into wooden growing trays and pasteurized. The compost in the trays is then mixed with other necessary growing components and inoculated with the mushroom “spawn.” The trays are then placed in special rooms with climate and light control until the mushrooms are grown at which time they are harvested and sold. Mushrooms are harvested after the first “flush,” which occurs approximately 8 weeks following inoculation, wetted and allowed to regrow. According to facility staff, each tray typically yields three flushes of mushrooms, after which the trays are dumped out and refilled with fresh substrate.

This facility accepts Type 1 and Type 2 feedstocks, consisting of wheat straw bales, dry chicken manure, alfalfa screenings, canola meal and gypsum. Horse bedding is no longer used in the composting process. Waste pieces of mushrooms that are not harvested for sale are collected and put back into the compost operation as a feedstock.

Composting surfaces are dirt, pavement or concrete depending on the activity. The main preparation and composting area is concrete and graded to direct water to a low trough where it ultimately drains into a 30,000 gal. holding tank after solids are filtered out. This water is continually collected and reused, creating a circular water-use pattern. When more water than can be contained collects in the holding tank, it is pumped to the holding pond in the hay field to the west of the operating area. During the winter months, wash water from the mushroom growing buildings is also directed to the holding pond in the northern portion of the subject facility property. The wastewater in the pond is stored in the winter and irrigated onto the planted fields in the summer for beneficial use. This discharge is regulated under 1400-B WPCF general permit file no. 106848. There is a pond in the southern portion of the subject facility property that receives runoff flowing towards Rowland Creek. and is also used to irrigate the compost and farm fields, when necessary. This pond does not receive impacted stormwater, process water or leachate from composting operations, however, according to facility staff.

Compost feedstocks are blended and prepared for two days, then piled into bunkers and tarped on a concrete pad with perforated piping in the floor that is attached to a manifold and blower which provide positive air pressure through the compost piles to prevent anaerobic conditions and accelerate the first phase of the composting process. These piles are then turned, water and additives added as necessary and placed into a covered building also on positive air, for the second phase of the composting process. This building is equipped with a biofilter made of woodchips to remove some of the odors, which was specifically designed for this facility. Finished compost is then used as growing medium for the mushrooms

Spent mushroom substrate is steamed in an enclosed building for 24 hours. at a sustained temperature of 155 degrees before the composting trays are dumped out and refilled with fresh substrate. This process effectively pasteurizes the mushroom compost, which is subsequently sold to various landscape supply companies.

Proposed Permit Conditions

Conditions are contained in the permit and a Yamhill County Land Use Compatibility Statement, signed on Jan. 24, 2000. The proposed permit would cover up to a 10 year period from the date of issuance.

The Permittee must meet performance standards as stated in Oregon Administrative Rules 340-096-0070 and submit an annual report to DEQ. The registrant must maintain all records required by this permit for a minimum of 10 years. In the case of a change in ownership of the composting facility, the new owner is responsible for ensuring that the records are transferred from the previous owner and maintained for the required 10 years.

The Solid Waste Composting Facility Registration Permit also has sections that allow representatives of DEQ access to the facility at all reasonable times for the purpose of performing inspections, surveys, collecting samples, obtaining data and carrying out other necessary functions related to this registration

Regulatory Context

Oregon Revised Statute 459 requires a DEQ permit for any solid waste disposal site. OAR Chapter 340 Divisions 93-97 provides further clarification of requirements for permitted facilities.

Permit History

This proposed action is for permit renewal of an existing compost facility. This facility was inspected by DEQ on Jan. 16, 2019, and found to be in compliance with the conditions and limitations of the its registration permit. According to DEQ records, this facility is well operated and maintained.

Compliance History

This facility has had no compliance issues or complaints since the last permit was renewed in 2011.

Recommendation Regarding the Permit Renewal

I recommend putting the draft permit out for public notice and comment.



State of Oregon
Department of
Environmental
Quality

Composting Facility Risk Screening Checklist

Composting Facility: <u>Yamhill County Mushroomos - DEQ SWDS Permit #1431</u>			
Reviewer: <u>Craig C. Filip, Solid Waste Permit Specialist</u>		Date: <u>April 11, 2019</u>	
County: <u>Yamhill</u>			
Facility Evaluation:		Low Risk <input checked="" type="checkbox"/>	Poses Potential Risk <input type="checkbox"/>

INTRODUCTION

This form provides a checklist of information DEQ staff may use to conduct a facility risk screening for composting sites, as required by new composting rules incorporated into law in September 2009. The risk screening will evaluate the potential environmental and human health risks of existing and proposed composting facilities, using basic site information, including facility location, design, size and operation. Potential risks include: risks to surface water, risks to groundwater and possible odor impacts to facility neighbors.

The purpose of the screening is to identify the degree of risk posed by each facility, looking primarily at site-specific characteristics of each facility. Based on the outcome of the risk screening, DEQ staff will determine the type of composting facility permit most appropriate for the facility. DEQ staff should consult the *Composting Facility Risk Screening Guidance IMD* to determine information on how to use the information identified in this Memo in making risk evaluation decisions.

The composting rules incorporate a systematic screening process for evaluating the potential impacts on human health and the environment of a proposed or existing composting facility. DEQ staff will evaluate risks potentially posed by a composting facility in the following major categories:

- Surface water;
- Groundwater;
- Odor emissions.

COLLABORATIVE PROCESS

The screening is intended to be a collaborative process involving DEQ staff with different expertise. Some of those staff could be: 1) solid waste permit writers, 2) water quality stormwater management specialists, 3) hydrogeologists and/or 4) air quality staff.

Solid waste permit writers will be the lead staff coordinating and consulting with other staff to obtain opinions in their areas of expertise. Stormwater specialists can assist with surface water screening. Hydrogeologists can provide opinion on the potential of the site to negatively affect groundwater. Solid waste permit writers with compost facility experience or air quality staff can provide opinion on the potential of a site to create nuisance odors. The solid waste permit writer will assemble all opinions, make a risk determination and provide a response to the compost facility applicant.

SOURCES OF DATA/ INFORMATION

Appendix A of the *Composting Facility Risk Screening Guidance IMD* provides a list of potential “on-line” supporting data or information. Much of the information needed to make a risk assessment can be found here.

DEQ staff should consider obtaining some of the “physical” data themselves as this will likely save time and provide reliable and accurate information. That information includes groundwater data, soils, well logs, climate and wind data. DEQ staff should be able to access the information resources fairly quickly and find the specific information needed. DEQ staff should ask subject-knowledgeable colleagues for assistance.

DATA/ INFORMATION NEEDS

Surface Water Screening

Goal: The goal of the surface water screening review is to determine if a composting facility is likely to adversely affect waters of the state by discharges or releases water that enters surface water bodies such as lakes, rivers, and streams.

Basis: The composting rules require that every composting facility must be operated in a manner that does not cause an adverse impact to surface water. The rules prohibit discharge of either leachate or stormwater to surface water, unless the discharge is in compliance with the standards in a water quality permit issued by DEQ.

Process: DEQ staff will evaluate whether a facility is currently discharging, or is reasonably likely to discharge, either leachate or stormwater to surface water, either directly, or by means of ditches, natural swales, or other means.

Supporting data may include the following (and any other information a hydrogeologist or water quality specialist may suggest):

Site topography, slope, directional flow patterns; The physical address of the subject facility is 7246 Lilac Hill Road which is east of NW Bishop Scott Rd. It is zoned EF-80 by Yamhill County and this business has been operating since 1982 as an approved farming activity on this land. The subject facility is a mushroom-growing operation, which composts feedstocks to create growing medium, or substrate, for the mushrooms. The facility lies on the floor of a small valley approximately three miles north of the city of Yamhill, OR. The site is roughly bisected by Rowland Creek, which flows in a southerly direction, immediately to the west of the composting and mushroom growing operations (see Figure 1 in Attachment 1).

The location of, and distance to, surface water in the drainage area of the composting facility; As stated above, Rowland Ck. flows north to south through the subject facility property, eventually draining into the North Yamhill River some four miles to the south. Roughly ten drainageways flow onto the property towards or into Rowland Ck. (see Figure 2 in Attachment 1) The subject facility property contains a stormwater retention basin, located to the west of the composting and farm operations on-site, as well as a pond located in the southern portion of the property. The stormwater retention basin occasionally receives impacted stormwater and leachate from composting activities, when the capacity of the 30,000 gal. holding tank on-site is exceeded.

All drainage channels, ditches, and any other water conveyances leading from the composting facility to surface water; All natural drainageways on-site flow around the mushroom growing and composting operational areas (see Figure 2 in Attachment 1). According to a site inspection report from Jan. 16, 2019 by C. C. Filip, the compost operating surfaces are dirt, pavement or concrete depending on the activity. The main prep. and composting area is concrete and graded to direct water to a low trough where it ultimately drains into a 30,000 gal. holding tank after solids are filtered out (see Figures 4-8 in Attachment 1). This water is continually collected and reused, creating a circular water-use pattern. Run-off appears to be well controlled and he did not observe conditions that would impact water quality off-site.

When more water than can be contained collects in the holding tank, it is pumped to the holding pond in the hay field to the west of the operating area (see Figures 4-8 in Attachment 1). During the winter months, wash water from the mushroom growing buildings is also directed to the holding pond in the northern portion of the subject facility property. The wastewater in the pond is stored in the winter and irrigated onto the planted fields in the summer for beneficial use. This discharge is regulated under 1400-B WPCF general permit file no. 106848. There is a pond in the southern portion of the subject facility property that receives runoff flowing towards Rowland Ck. and is also used to irrigate the compost and farm fields, when necessary (see Figure 2 in Attachment 1). This pond does not receive impacted stormwater, process water or leachate from composting operations, however, according to facility staff.

Precipitation, evaporation, soil types, infiltration and soil permeability ratings; The main portion of the composting area is dominated by soil type 2015A, with a very small portion underlain by soil type 2214A (see Figure 3 and subsequent pages in Attachment 1). According to the National Resources Conservation Service Web Soil Survey soil type 2015A, Cove silty clay loam, is a feature of local floodplains. Mean annual

precipitation is 40-60 inches. Soil type 2214A, Chehalem silty clay loam, is a feature of alluvial plains. Mean annual precipitation is 40-60 inches

- Operational history regarding runoff from the site; There have been no issues historically.
- Current or planned stormwater management facilities/structures/features/ specifications; No changes are planned. The facility does not require an NPDES 1200-Z stormwater discharge permit because none of the stormwater from the composting areas drain to surface waters.
- Site design or operations that keep stormwater separate from composting operations; Stormwater is not kept separate from leachate in the active compost areas. Stormwater, leachate and process water is collected and reused in the operation. Excess water is pumped to a holding pond, which is sometimes utilized to irrigate in crops during the summer. This activity is overseen by ODA and no DEQ permits or oversight is necessary.
- Infiltration and/or detention basin capacities; The holding pond covers approximately 1.5 acres and is roughly 8.5 ft. deep. It holds four million gallons, according to facility staff.
- Feedstock types, conditions and volumes; Feedstocks consist of wheat straw bales, dry chicken manure, alfalfa screenings, canola meal and gypsum. Horse bedding is no longer used in the composting process. Waste pieces of mushrooms that are not harvested for sale are collected and put back into the compost operation as a feedstock.
Other than bales of wheat straw (which are tarped), feedstocks such as chicken manure, canola meal and alfalfa screenings are stockpiled in covered stalls with individual bins for each feedstock. Leftover mushroom residue is stored in an uncovered bunker. During a recent inspection, feedstocks were found to have minimal odor and sufficient efforts were made to keep them dry.
- Site-specific leachate composition data (if available); Not available. However, leachate and stormwater production is minimized by management practices. Compost piles are placed on positive air and tarped or stored in a roofed structure during the first two phases of the composting process. The third and final phase is conducted on a roofed concrete pad (see Figures 9-12 in Attachment 1).
- The compliance history of the facility. This facility has had no compliance issues since its last permit renewal in 2011. However, a complaint of odor was brought to this inspector's attention by a neighbor, but to date, no formal complaint has been filed.

Evaluation: This facility is determined to be low-risk for surface water impacts.

Low Risk:

Poses Potential Risk:

Reason for Evaluation: Based on the stormwater management practices implemented at this site, good feedstock and compost management practices, and an ongoing favorable compliance history, the Yamhill County Mushroom facility is not likely to impact surface waters of the state.

Groundwater Screening

Goal: The goal of the groundwater screening review is to determine if the facility is likely to cause an unacceptable adverse impact to groundwater.

Basis: The composting rules require that every composting facility must be operated in a manner that does not cause an unacceptable adverse impact to groundwater. The composting rules define “unacceptable adverse impact” as causing pollution in groundwater that impairs current or future beneficial uses of groundwater as described in OAR Chapter 340, Division 40.

Process: Using readily available online data, along with information provided by the applicant, DEQ staff will determine whether the facility’s operations are reasonably likely to pose an unacceptable adverse impact to groundwater at a relevant point of compliance. Because DEQ’s groundwater quality protection rules in Division 40 allow DEQ to decide where to measure whether groundwater is impacted, a relevant point of compliance could be either near or far away from areas where operations could potentially impact groundwater. If a facility plans to use or is now using infiltration, bioswales, filter strips, etc., to manage leachate and/or stormwater, DEQ staff will review those features, as well as any other actual or potential pathways to groundwater.

Division 40 also includes a policy directing DEQ to focus their efforts on operations that have the greatest potential for affecting groundwater beneficial uses. In keeping with this policy, DEQ staff will place more weight on contamination that could affect nearby groundwater or surface water beneficial uses, and less weight on groundwater contamination that is unlikely to affect groundwater or surface water beneficial uses.

Supporting data may include the following (and any other information a stormwater quality specialist or hydrogeologist may suggest):

Soil types and permeabilities; The main portion of composting area is dominated by soil type 2015A, with a very small portion underlain by soil type 2214A (see Figure 3 in Attachment 1). According to the National Resources Conservation Service Web Soil Survey soil type 2015A, Cove silty clay loam, is a feature of local floodplains. Mean annual precipitation is 40-60 inches. Soil type 2214A, Chehalem silty clay loam, is a feature of alluvial plains. Mean annual precipitation is 40-60 inches (see Attachment 1 for details). Review of logs for the three groundwater wells on-site reveal initial water depths of 26', 50' and 63', respectively (see pp. 10-12 in Attachment 1).

Likely net (i.e., post evapotranspiration) volume and infiltration rate of leachate-affected water; _____

Nature of contaminants based on feedstock types, composting methods and operation, and likely concentrations of contaminants; Primarily Type 1 and Type 2 feedstocks mixed and placed on aerated concrete pads with high temperature composting and frequent turning. Contaminants of concern would likely be nitrogen in various forms. Pathogen testing for Fecal Coliform or Salmonella is not required for farm composting operations. However, spent mushroom substrate is steamed in an enclosed building for 24 hrs. at a sustained temperature of 155 degrees before the composting trays are dumped out and refilled with fresh substrate. This process effectively pasteurizes the mushroom compost, which is subsequently sold to various landscape supply companies.

Proximity to surface water (to evaluate the potential for contaminants to enter surface waters via groundwater); As stated above, Rowland Ck. flows north to south through the subject facility property, eventually draining into the North Yamhill River some four miles to the south. Roughly ten drainageways flow onto the property towards or into Rowland Ck. (see Figure 2 in Attachment 1). This creek is located immediately to the west of the composting and mushroom growing operations (see Figure 1 In Attachment 1).

Depth of the aquifer used locally as a drinking water source and whether confined or unconfined; According to a hydrological review conducted by former DEQ staff member Bill Mason in 2011:

- There are no wellhead protection areas within several miles of the site;

- Nearby wells tap water-bearing zones that are overlain by clay and claystone, protecting those sources from surficial contaminants;

- The well logs of those nearby wells confirm that those water-bearing zones are under confined conditions, with static water levels rising above the screened interval;

- All stormwater and leachate is kept on site and reused in the composting operation, and the system is engineered to prevent any runoff from the site; and

- The soils underlying the site are "somewhat poorly drained" to "poorly drained", which helps protect groundwater.

- Review of logs for the three groundwater wells on-site reveal initial water depths of 26', 50' and 63', respectively (see pp. 10-12 in Attachment 1).

Aquifer yield; There are three groundwater wells on the subject facility property. According to well logs, estimated flow rates at the time of well installation range from 5 gallons per minute to 20 gpm (see pp. 10 - 12 in Attachment 1).

Proximity of site to water supply wells; As stated above, there are three groundwater wells on the subject facility property, all installed in 1999.

Availability of municipally supplied drinking water; _____

Current or proposed methods of managing stormwater and leachate; The operational areas consist of dirt, pavement or concrete depending on the activity. Active compost piles are on concrete, as well as the area where equipment moves materials and where some feedstock is stockpiled. The concrete and paved areas are

graded in a manner that directs process, stormwater and any leachate towards a shallow trench in the concrete (see Figure 5 in Attachment 1). The water that collects here is transferred through a pipe to a sump/pumping chamber, where solids are removed and the water is pumped into a 30,000 gal. holding tank for use in moistening the compost and in preparing the wheat straw bales for composting. When more water than can be contained collects in the holding tank, it is pumped to a holding pond which is in the grass field to the west of the operating area, in the northern portion of the subject facility property. During the winter months, wash water from the mushroom growing buildings is also directed to the holding pond. The wastewater in the pond is stored in the winter and irrigated onto the planted fields in the summer for beneficial use. Sometimes, the pond gets nearly full in the winter when precipitation is heavy and some of the water has been irrigated onto the field during the winter months. The pond is managed to reduce the necessity to irrigate in the winter. This discharge is regulated under 1400-B WPCF general permit file no. 106848.

Method of composting operations; Primarily aerated static pile, but with frequent turnings to help accelerate the composting process, the main goal of which is to produce a growing medium for mushrooms, which are the farm's main crop. A new compost pile is created weekly and goes through three phases which take a total of 19 - 22 days from creation of the pile to use as mushroom-growing medium. There are usually 3 piles actively composting in various stages at any one time. There were two batches actively composting at the time DEQ's last inspection on Jan. 16, 2019, and a third in the making.

At the time of this inspection, wheat straw bales were being laid out in preparation for starting a new compost pile (see Figure 5 in Attachment 1). These had been previously soaked in water in a dip tank. Stormwater runoff, captured process water and any leachate generated is captured and reused for this purpose. The bales are then laid out and sprinkled with chicken manure. A windrow-turning machine is then driven over each row, which breaks up and mixes the bales and additives. A separate machine is then used to fill the first-phase compost bunkers with this compost, which consist of open bunkers equipped with a positive air ventilation system in the floor and covered with tarps (see Figure 9 in Attachment 1).

Following the first phase of composting, the compost pile is brought out onto the concrete mixing area and mixed and watered as necessary before moving into the aerated second phase composting building, which is equipped with a negative air ventilation system and biofilter (see Figures 10 and 11 in Attachment 1).

In the final phase, the material is placed in a finishing shed adjacent to the grow buildings where it is turned 2 more times and then is ready to be used for mushroom substrate (see Figures 5 and 12 in Attachment 1).

Compliance history. No known groundwater impacts have occurred as a result of the composting operations at the subject facility.

As part of its screening, DEQ may require a facility to conduct groundwater sampling and/or monitoring and submit analytical results to DEQ.

Evaluation: No known groundwater impacts have occurred as a result of the composting operations at the subject facility. Review of available information indicates that this site represents a low risk to groundwater.

Low Risk:

Poses Potential Risk:

Reason for Evaluation: As summarized above in the surface water screening section, leachate and stormwater production is minimized by good management practices and is captured by a circular water reuse system. To date, no impacts to groundwater from the composting operations on-site have been reported.

Odor Screening

Goal: Evaluate whether the facility is likely to cause odor problems that will create impacts outside the boundaries of the facility.

Basis: DEQ recognizes that the microbial metabolic activity in compost piles causes odors and that composting facilities cannot completely eliminate all odors. The composting rules require that every composting facility implement reasonable and practicable measures to minimize odors through site design and facility operation.

Process: Using readily available online information in conjunction with that provided by the applicant, DEQ staff will determine whether the facility's operations are reasonably likely to cause odor impacts outside the boundaries of the facility.

Supporting data may include the following (and any other information an experienced compost facility permit writer or air quality specialist may suggest):

- Feedstock types; Feedstocks consist of wheat straw bales, dry chicken manure, alfalfa screenings, canola meal and gypsum. Horse bedding is no longer used in the composting process. Waste pieces of mushrooms that are not harvested for sale are collected and put back into the compost operation as a feedstock.
- Composting method; Primarily aerated static pile, but with frequent turnings to help accelerate the composting process, the main goal of which is to produce a growing medium for mushrooms, which are the farm's main crop.
- Site remoteness or proximity to residences; There are some residences in the vicinity of the subject facility, but they are all 1/3 mile or more away. The area is somewhat hilly and has a rolling topography. The site is surrounded by pasture land, and is bordered by two roads. The nearest surface water is Rowland Ck., which is tributary of the N. Yamhill River and runs adjacent to the pasture area west of the composting site and parallel to NW Bishop Scott Rd.
- Frequency and nature of complaints over operational history; This facility has had no compliance issues since it's last permit renewal in 2008. However, a complaint of odor was brought to this inspector's attention by a neighbor, but to date, no formal complaint has been filed.
- Causes of odors and/or complaints; Composting activity appears to be actively managed to minimize odors. Feedstocks are blended and prepared for two days, then piled into bunkers and tarped on a concrete pad with perforated piping in the floor that is attached to a manifold and blower which provide positive air pressure through the compost piles to prevent anaerobic conditions and accelerate the first phase of the composting process (see Figure 9 in Attachment 1). These piles are then turned, water and additives added as necessary and placed into a covered building on negative air for the second phase of the composting process (see Figure 10 in Attachment 1). This building is equipped with a biofilter made of woodchips to remove odors (see Figure 11 in Attachment 1).
- Responses to complaints; DEQ has no record of complaints since the facility permit was renewed in 2011. However, a complaint of odor was brought to this inspector's attention by a neighbor, but to date, no formal complaint has been filed.
- Local geomorphology and climate data (wind and weather). The nearest long-term climate data available from the National Weather Service are climate summaries for Salem, located some 35 miles southeast of the subject facility. Review of this data from the years 2013 - 2017 shows that rainfall for 2016 and 2017 was significantly above average. Mean temperatures for all years was also above average, especially for the years 2014 - 2017.

Evaluation: Due to its relative low feedstock volume, use of low-risk feedstock, lack of documented impacts or complaints and good compliance history, this facility is determined to be low-risk for odor impacts.

Low Risk:

Poses Potential Risk:

Reason for Evaluation: There is no history of formal odor complaints at the site. Inspections conducted by DEQ staff report minimal objectionable odors. The area of active composting is situated some distance away from any residential or commercial buildings, and odor management practices in place appear to minimize such problems.