

**DOUGLASS TOWNSHIP**

**LEAF & YARD WASTE COMPOST**

**FACILITY APPLICATION**

**UNDER 25 PA CODE SECTION 271.103(h)**

**PERMIT BY RULE**

**706 MONROE STREET  
STROUDSBURG, PENNSYLVANIA 18360  
PREPARED BY  
ALTERNATIVE RESOURCES, INC.**

**TABLE OF CONTENT**

Yard Waste Composting Facility Application..... Section 1

Appendices

Site Layout (Base Map)..... Attachment A

Siting Restrictions..... Attachment B

Topographic Map..... Attachment C

Nuisance Control Plan..... Attachment D

Contingency Plan for Emergency Procedures..... Section 2

**SECTION 1**

**YARD WASTE COMPOSTING FACILITY**

**APPLICATION**

**YARD WASTE COMPOSTING FACILITY  
APPLICATION FORM**

Please familiarize yourself with the Pennsylvania Department of Environmental Protection GUIDELINES FOR YARD WASTE COMPOSTING FACILITIES prior to filling out this form.

1. **Operator (Name and Mailing Address)** **Telephone Number**  
Peter Hiryak (610) 367-6062  
1320 E Phila Ave P.O. Box 297  
Gilbertsville, PA 19525

2. **Facility:** Douglass Twp Compost/Recycling Center **Contact Telephone #**  
**Contact:** Ms. Georgeann L. Rohrbach (610)-367-6062  
**Property Owner's Name:** Douglass Township  
**Street Address of Facility:** 108 Municipal Drive  
Gilbertsville, PA 19525

**State:** Pennsylvania **Zip Code:** 19525  
**City-Borough-Township** of Douglass Township  
**County:** Montgomery

**Sponsoring Municipality:** Douglass Township

Attach a United States Geological Survey 7.5 miles topographic map identifying the yard waste composting facility site boundaries outlined on it. (See Attachment C)

Provide proof the operator has the legal right to enter the land and perform the approved activities.  
See accompanying letter from landowner (Attachment E).

3. **The proposed composting method:** Open Air Windrow

**Total Acres of the composting facility:** One acre

**Maximum quantity of yard waste and composted materials on the site at any one time:** 300 cubic yards

**Yard waste in cubic yards:** 200 cubic yards

**Finished compost in cubic yards:** 100 cubic yards

4. **Prepare and include in this application a general site plan\***

for the facility which illustrates the location of the following items: (Attachment A Site Plan)

Access roads in relation to the nearest public and private roads, wells, and property lines  
tipping area  
gate location  
surface water controls, erosion and sedimentation controls  
processing area including location, orientation, and size of compost piles or windrows  
curing or storage area  
north arrow  
scale of drawing

\* Please note that a hand drawn sketch that includes site dimensions is acceptable. An engineer's drawing is not required.

# **NARRATIVE SUPPLEMENT**

## NARRATIVE SUPPLEMENT

**5. Please address the following items: (attach additional sheets if necessary)**

- **Provide a complete list of source(s) of yard waste to be received.**

Resident will be allowed to drop off leaf and yard Waste at scheduled times

The Township will deliver leaf waste from its fall and spring collections.

Leaf and yard waste generated from Douglass Township projects; i.e. park maintenance projects, storm debris from trees, etc.

- **Describe how the yard waste will be collected and received at the facility?**

A leaf vacuum collection system will be used to collect leaves at the curbside. The leaf collection truck will deliver leaves directly to the Douglass Township Compost Site.

Yard waste generated from municipal projects and spring clean-up days will be delivered to the site, in bulk, via municipal trucks.

Yard waste will be dropped off by residents. Containers used to transport material will be emptied in designated areas. Containers (bags and rigid containers) will be removed by residents.

- **Describe the method of inspecting incoming yard waste and for removing unacceptable material.**

All loads of incoming leaves will be inspected during off-loading to ensure the quality of incoming material off

specification material will be removed by Township personnel, placed in containers and properly disposed of. Plastic bags delivered by residents will be opened and unacceptable material (if any) will be removed by the resident or, placed in an on site waste container for proper disposal. The majority of material delivered to the site will be bulk collected by the Township.

- **Describe the windrow construction methods including equipment to be used.**

Residents delivering material and leaf collection trucks will unload leaves in the approximate location where a windrow is to be formed. A front-end loader with a bucket will form windrows.

- **Describe the windrow size: Initial dimensions will be 8' wide x 4' high x 165' length.**
- **Describe the source of supplemental water, which will be used to maintain optimal 40 to 60% moisture content of compost piles or windrows.**

An on site well and storm water basin will provide supplementary water.

- **Indicate the frequency of windrow turning:**

Turning will occur depending on indications of windrows (primarily temperature) 2 times per week initially and 2 times a month after the first month.

- **Indicate the temperature range to be maintained:**

A temperature range of 90°F to 140°F will be maintained.

- **Indicate the method of windrow turning:**

A front end loader will turn windrows.  
(The Township is planning to purchase a tractor driven windrow turner to mix and aerate the windrows.)

- **Describe the method for determining turning frequency.**

Turning frequency will be based on maintenance of proper environment for maximum thermophilic microbial activity.



The key indicator for establishing turning frequency will be internal windrow temperature. Windrows will be turned to maintain temperatures in the lower thermophilic range (90°F to 140°F). The thermophilic temperature range should be reached within two weeks to a month of windrow formation. Once the inner core of the windrow exceeds 140°F the windrow will be turned. If the temperature of the pile drops below 90°F, the windrow will likewise be turned to add oxygen to the pile and increase microbial activity. Once the temperature drops below 90°F and turning the windrow does not result in an increase in temperature, the compost will be moved to a curing area.

- **Describe the approximate duration of the composting cycle: (in days) 120-180 days**

**Describe the composting process:** See accompanying narrative.

**Describe the curing period for compost:** 30-90 days

**Indicate the time required for storage and distribution:** 0-90 days

**Indicate the total time required for composting operation:** 130-360 days

- **Describe the marketing and distribution plan for the finished compost product.**  
Compost will be made available to residents. The Township will place a notice/advertisement in a local newspaper and alert the media that compost would be available at the site on certain date(s) and time(s). The Township will use compost for soil enhancement and landscaping at municipal properties.
- **Describe the residue disposal plan and identify the disposal or processing site(s) to be used.**

Any waste or residue collected on site will be placed in designated on site containers and subsequently transported to a county approved landfill.

- **Describe the plan for emergency response (fire police, etc.).**

A phone is located at Township recycling/compost office,

located on site, will be used in case of an emergency. Both the police and fire department will also be briefed as to the compost site layout and standard procedures. A plan detailing emergency procedures will be posted on site and personnel will train in emergency procedures.

• **Outline the public information and education program (attach samples of literature if available).**

The Township will discuss the program at public meetings and publish a display advertisement approximately two (2) times per year prior to leaf collections, if warranted. The Township will also advertise the availability of finished compost to residents. A brochure will be developed to encourage participation. Releases will be sent to local media. Information is planned to be posted on the Township's proposed Web Site. **[See accompanying Education/Outreach Plan for details.]**

# **Education/Outreach Plan**

### **Education/Outreach Plan**

An educational brochure will be developed and provided to the residential and business sector promoting leaf and yard waste recycling. Public notices detailing the program, to include its requirements, will be published semi-annually.

Residents and businesses in Douglass Township will be informed/educated regarding the leaf collection and yard waste composting program using a variety of different modes. Public notices in the Boyertown Times newspaper will be the first official description of the scope of the project and the highlights of the program. Program requirements will be detailed and a collection schedule is planned to be included.

The Township plans to have a professionally prepared brochure that will be mailed to each residence and business in the Township. This brochure will inform residents and businesses that they must recycle their leaf/yard waste as per state law and the Township's ordinance. The brochure will provide information steps the Township is taking to develop a yard waste composting program to include curbside collection of leaves each Spring and Fall. The brochure will outline the collection zones in the Township and an approximate schedule for leaf collection in each zone.

In addition to the public notices and the brochure, the Township plans to promote the program and the leaf collection schedule through news releases to the local media. Program details will also be included in the Township's Annual Report to residents.

Additional reinforcement efforts will be made to remind the public of the yard waste recycling program importance and requirements in the Spring and Fall season when yard waste increases. The Township will encourage participation in the program and provide residents convenient curbside collection program.

It is anticipated that participation will increase each year as the residents are informed of the benefits of recycling organic materials. The residents will become even more enthused as they see their yard waste become finished compost that they can receive and use this resource at their homes and businesses at no charge.

Township newsletters will include recycling and leaf and yard waste rules and news, "how we are doing compared to others, amount of material recycled and the benefits of the program."

# PROCESS DESCRIPTION

## Process Description

### Describe the Composting Process.

Douglass Township (Township) will use open air aerated windrow processing for composting leaf and yard waste. Compostables will be formed into parabolic shaped windrows of approximately 4' high X 8' wide X 165' in length. The Township anticipates that during peak collection times two windrows will be required. Initially (upon formation) windrows will be higher than 4' they will be approximately 5' to 5-1/2 feet to allow for settlement of the leaves.

It is anticipated that the compost site will receive approximately 65 tons of material in the fall, and 35 tons in the spring. Additional material will be dropped off by residents year round.

Incoming loads of materials will be off-loaded where the windrows are to be formed. Personnel will inspect material during off-loading and windrow formation. Material which is unacceptable will be removed and properly disposed of. The windrows will be constructed parallel to slope with a front end loader. The windrows will be arranged on the "composting pad" allowing a space of at least 10' but not more than 15' between them. The composting pad will consist of impervious soil. The pad will measure 75' X 225'. A clearance of 11' around the windrows will be maintained for equipment ease of access to the windrows. Once windrows are initially formed and settle a windrow turner(planned to be purchased) or front end loader will be used to turn and aerate the piles. Loads of wet leaves will be turned as soon as practical to prevent anaerobic conditioning from forming.

The windrow turner's rotating flail will not only aerate the pile but it will also chop a percentage of the leaves into smaller pieces thus increasing the surface area available to microbes and accelerating the composting process. A reduction in pile size will also occur as a result of initial turnings.

Windrows will be constructed in sections i.e. as leaves are delivered. The individual sections will be monitored to insure a proper environment for active composting is maintained.

Temperature, being the prime indicator of microbial activity, will be monitored at prescribed intervals along the windrow using long stem digital thermometers. The windrow or section of windrow will be turned if the temperature varies from the thermophilic range (90°-140°).

The total composting time is dependent on a number of variables primarily temperature, moisture, and oxygen content. The normal procedure will be to actively compost 8 weeks and cure for another 4 weeks. This time period will be adjusted as required based on monitoring results. Monitoring will be done twice weekly to insure proper moisture and temperature ranges are maintained.

During the composting process windrows will be built in sections. Records will be maintained on each section. Eventually, through turning and mixing the windrow will be homogenized and should uniformly degrade.

A moisture content of approximately 50% will be maintained during composting. The moisture content will be checked periodically using the "squeeze test". A handful of material from within the windrow will be squeezed; if a few drops of water are generated

the windrow can be assumed to contain the proper range of moisture 40% to 60%. Deviance from this range will require turning of the windrow. More water than a few drops and turning is done to aerate and dry pile to prevent anaerobic conditions. The windrow will be turned as necessary to assist moisture loss and if available dry material will be added.

If the material is too dry, water will be added gradually during the turning process until the desired range is met.

Composting and curing will be judged complete when pile temperatures decrease to near ambient and remains there for 3-4 weeks. Finished compost will be stored in a 50' X 50' pad with cement block containment for distribution to township residents and/or use by Township.

Maintenance of the sediment basin (catch basin for storm water run off) will prevent potential ground and surface water problems. The catch basin will act as a reservoir for sediment and rainwater run off. Water in the basin will be used to supplement the moisture requirements of the windrows. The catch basin will be monitored and if required sprayed for insect and vector control.



**ATTACHMENT A**

**SITE LAYOUT**

**(SITE PLAN)**

**ATTACHMENT B**  
**SITING RESTRICTIONS**

## **SITING RESTRICTIONS FOR YARD WASTE COMPOSTING OPERATIONS**

Douglass Township's compost site is located at 108 Municipal Drive off of Route 73 in Gilbertsville (see attached "Site Map"). The site will not store, compost or cure leaf and yard waste in the following areas: (Attachment B Flood Plain Map)

**a. In a 100-year flood plain.**

The facility is not located within a 100-year flood plain(Attachment B-1).

**b. In or within 300 feet of an exceptional value wetland.**

The "National Wetlands Inventory Map" does not identify any exceptional wetland within 300 feet from the compost site boundaries.

**c. In or within 100 feet of a wetland other than an exceptional value wetland.**

No noted wetlands exist within 100 feet of the site boundaries. Although the Montgomery County Soil Survey Map indicates the presence of hydric soils on the Township's 20 acre parcel (on which the one acre compost site is located.) No wetlands exist on or within 100' of the site proper. (See Attachment B-2 Soil Survey Map)

**d. Within 100 feet of a sinkhole or area draining into a sinkhole.**

No karst geologic features are located on site (based on review of Montgomery County Soil Survey, see accompanying soils map) There is no potential drainage into a sinkhole within 100 feet of the compost site boundaries.

**e. Within 300 feet measured horizontally from an occupied dwelling unless the owner has provided a written waiver consenting to the facility being closer than 300 feet.**

See accompanying property owner's waiver dated April 2, 2003. (Attachment B-3)

**f. Within 50 feet of a property line, unless the operator demonstrates that only curing of compost is occurring**

**within that distance.**

The site is not within 50' of a boundary line.

**g. Within 300 feet of a water source.**

One well exists on the site, it will be used for process water if required.

**h. Within 3.3 feet of a regional groundwater water table.**

The compost facility is located on soils which have a distance greater than 3.3 feet between the surface and the regional groundwater table.

**i. Within 100 feet of a perennial stream.**

No perennial streams are located within 100 feet of the site.

**ATTACHMENT B-1  
FLOOD PLAIN MAP**

**ATTACHMENT B-2**  
**SOIL SURVEY MAP**

**ATTACHMENT B-3**  
**WAIVER**

**ATTACHMENT C**

**TOPOGRAPHIC MAP**



**ATTACHMENT D**

**NUISANCE CONTROL PLAN**

## NUISANCE CONTROL PLAN

All on site operations will be monitored on a regular basis, any situation that is noted which might attract, and harbor or cause breeding of vectors will be addressed as quickly as possible on a case-by-case basis.

Odor is a primary concern for composting operations. Malodors are almost always associated with anaerobic conditions, excessive temperatures, excessive water, etc. Monitoring and quick response to problems recorded will minimize the occurrence of odor causing conditions.

Constant maintenance will help eliminate the potential of standing water. Additionally, the windrows will run parallel to the slope allowing for proper drainage. Any ponding of water found on site will be subjected to corrective actions. These actions may include; adding fill material, re-grading or modifying drainage patterns.

Through the elimination of standing water, the regular turning of windrows and heat generated by the active windrows breeding of vermin and insects is inhibited. Regular monitoring of the compost windrows will also be accomplished.

Noise from operating equipment should not present a problem given

the location of the site and the limited work effort required to manage the small volume of leaves.

Dust generated on access roads or by processing machinery will be suppressed with water spraying of roads (if required).

The Township will operate the compost site in a professional manner. The safety and well being of its employees, the public and the environment are of the utmost concern. The operations will be monitored daily and any safety hazards or public complaints will be dealt with expeditiously.

Any litter generated by site activities or deliveries will be policed by Township personnel.

**ATTACHMENT E**  
**PROOF OF OWNERSHIP**

**SECTION 2**

**DOUGLASS TOWNSHIP**

**CONTINGENCY PLAN FOR**

**EMERGENCY PROCEDURE**

**REVISED EDUCATION**

**OUTREACH PLAN**

## **Planned Residential/Commercial Yard Waste and Recycling Education/Outreach Plan**

Douglass Township plans to develop an Education/Outreach program aimed at increasing - residential/school/commercial participation in the Township's yard waste and recycling programs. The following are some issues that will be addressed by this program.

- Non-compliance with Act 101 by residential and institutional commercial sectors.
- Illegal burning of recyclables leaf and yard waste.
- Increased involvement with schools.

### **RESIDENTIAL**

Residents will be informed/educated as to the advantages of recycling and yard waste composting e.g. conservation of resources, avoided landfill costs, energy conservation, etc.

Douglass Township proposes the following program aimed at increasing residential/commercial participation in its compost and recycling programs.

- Develop and distribute a brochure describing Act 101 requirements and the responsibilities of residents and the commercial sector. The brochure will be designed to inform residents and commercial entities of their responsibilities under both Act 101 and the Township's Recycling Ordinance. Available assistance from the Township and other opportunities to recycle/compost will also be discussed. The brochure will offer easy to understand and practical information related to recycling and yard waste composting. The brochure will cover who, what, where, when, why and how to.

- Develop a web site detailing activities in composting and recycling. The site will extol the many benefits of waste reduction, reuse and recycling/composting. The fact that law requires participation and that there are serious consequences for noncompliance will be detailed.
- Distinctive signage clearly detailing drop off requirements and days and hours of operation will be developed for the compost site. A site monitor will also provide guidance to participants.
- A newsletter is planned to be issued at least twice a year. The newsletter will inform residents/commercial business of the latest recycling program and leaf/yard waste recycling news. The newsletter will contain reports on how the Township is progressing, accomplishments by residents, businesses and schools, etc. It will also convey the reasons that continued participation is required and that it is the law.

### SCHOOLS

Two schools are located in Douglass Township, the Elementary school with students from K-6 and the Junior High school with grades 7 through 9.

The following activities are planned to inform students of the value of composting and recycling and encourage their individual/and family participation. Efforts will include:

- Encouraging administrators and educators to incorporate recycling/composting into their curriculums. The Township will provide website addresses where educational material is available e.g. PADEP, EPA; lesson plans can be obtained at these sites and others along with a wealth of multimedia information designed for various areas of study and ages of students.
- Participation in classroom instructions by providing speakers and presentations relating to the Township's recycling and leaf and yard waste compost program. Encourage our organic resources.



- field trips to the compost site to help students better comprehend the composting process and the value of reuse of Demonstration areas at the compost site - and schools where flowers are planted in soil with and without compost.
- Assist the schools in developing their own recycling and compost program.

### COMMERCIAL SECTOR

There are approximately 140 small businesses and 50 large ones in the Township. Generally, the larger businesses are complying with the Township Ordinance and participating in recycling. The Township will offer the small business community the opportunity to drop off leaf/yard waste and recyclables at the Township's small business drop-off center on the 2<sup>nd</sup> and 4<sup>th</sup> Wednesdays from 1:00 PM to 4:00 PM and on the 2<sup>nd</sup> and 4<sup>th</sup> Saturdays from 9:00 AM to 12:00 Noon.

It is estimated that of the existing small businesses approximately one third recycle regularly, one third recycle occasionally, while the remaining third never recycle. Larger businesses tend to comply with regulations due to corporate policies.

Douglass Township proposes the following outreach program aimed at increasing interest and participation within the business sector. The program is planned to include:

- Development of a brochure describing Act 101 and the responsibilities of businesses for recycling and leaf collection for composting. The brochure will be designed to inform businesses of why and how to participate in the programs. Resources available from the Township and other sources to assist them develop, implement or expand programs will be identified. The environmental and monetary advantages of their participation both to the community and them will be described (eg; performance grant monies, avoided disposal costs and needs, conservation of resources ect.
- Penalties for noncompliance with the Township ordinances (nonparticipation/burning of recyclables) will be detailed

in the brochure and clearly convey the message that enforcement action will be taken.

- Letters will be sent to businesses not participating as a first notice and warning. Assistance will be offered to help develop a program. A telephone call will follow the notice as a last resort enforcement action will be taken.
  
- Penalties for noncompliance with the Township ordinances (nonparticipation/burning of recyclables) will be detailed in the brochure and clearly convey the message that enforcement action will be taken.
  
- Letters will be sent to businesses not participating as a first notice and warning. Assistance will be offered to help develop a program. A telephone call will follow the notice as a last resort enforcement action will be taken.
  
- Two mailings a year to each member of the business community will cover the following topics:
  - Act 101 requirements for recycling leaf waste
  - Pertinent sections of the Douglass Township ordinance
  - An end of year report on how the Township is doing
  
- Develop incentives for participation e.g. decals for display "we recycle," certificates of recognition, a plaque or other special recognition at a public meeting.
  
- Organize workshops/seminars for the commercial sector involving DEP and business representatives that have learned the value of recycling.

## TROUBLE SHOOTING GUIDE

<u>Situation</u>	<u>Probable Cause</u>	<u>Solution</u>
Low temperature in windrow	Moisture content low (cannot squeeze water from material)	Turn windrow add water while turning
	Insufficient air flow	Turn windrow to aerate
	Size of windrow too small	Combine with another windrow or add material
Mosquitoes	Mosquitoes breeding in ponding water	Regrade/fill depressions
High temperatures in windrow	Low oxygen content	Turn windrow to aerate
	Compacted material (1)	Turn windrow to loosen material and to aerate
Odor	Anaerobic condition excess moisture	Turn windrow to aerate
	Too much grass	Add leaves to adjust C:N ratio and turn pile
	Compacted material (1)	Turn windrow to loosen material and

Ponding of water

to aerate

Regrade/fill  
depressions

---

(1) Material received (leaves or grass) which is compacted should be shred or mixed to loosen/separate prior to windrow formation.