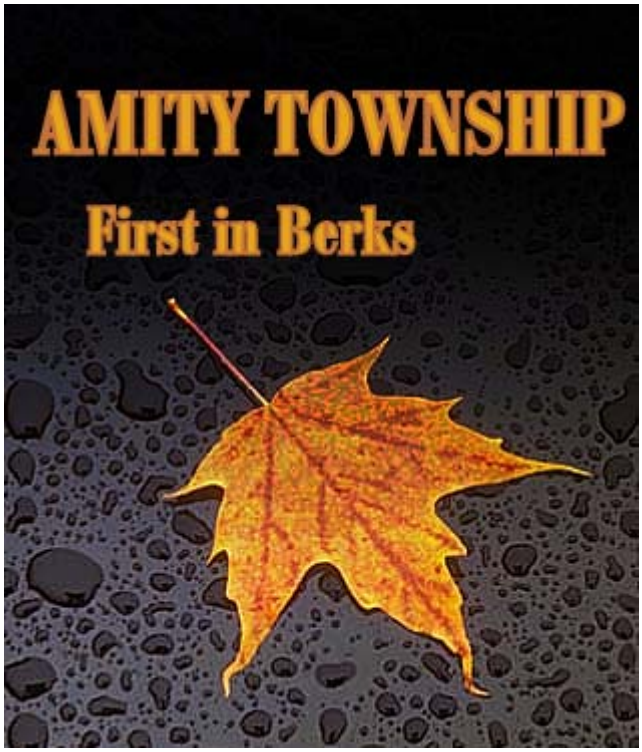

LEAF WASTE LAND APPLICATION

Environmental Resources Associates

706 MONROE STREET
STROUDSBURG, PENNSYLVANIA 18360

CONSULTANTS IN ENVIRONMENTAL RESOURCE MANAGEMENT

ERA

Printed on Recycled Paper

SWANA/PADEP Technical Assistance Program #324

TABLE OF CONTENT

1.0 Executive Summary

Amity Township (Township) is an Act 101 mandated municipality located in Berks County. The Township is in the process of upgrading and improving its leaf and yard waste Program. Historically leaf and yard waste has been collected curbside, in thirty (30) gallon paper biodegradable bags, by public works personnel using municipal dump trucks.

Leaf and yard waste collected by the Township is delivered to a private facility for processing/composting. During the fall a portion of the leaves collected are also delivered to farms in the region for land application.

A pilot curbside collection program was initiated in fall 2008 for limited bulk collection of leaves, using the Township's existing equipment. The Township plans to purchase vacuum equipment, with the assistance of Act 101 Section 902 funding, to expand bulk collection of leaves and eventually eliminate the use of biodegradable bags.

To further augment the Township's leaf and yard waste program technical assistance was requested through the Recycling Technical Assistance Program. The Township wished to develop a compost facility under PADEP "Guidelines for Yard Waste Composting Facilities". The Township's primary objective in developing a compost facility was to provide a convenient, economical and reliable outlet for the processing of leaves collected during the fall. Environmental Resources Associates (ERA) was selected to provide the requisite consulting services to assist the Township.

ERA performed site inspections and desktop evaluations of data on four selected candidate compost sites, proposed by the Township. Based on the evaluations none of the sites were considered feasible for development of a compost facility.

Lacking additional plausible candidate sites the ERA assisted the Township in assessing alternatives. Based on the assessment the Township decided to explore the potential for securing the services of a local farm to land apply its leaves. The Township subsequently contacted a local farmer who agreed to accept the leaves from its fall collections for land application. However, the farmer did not possess a land application permit for the farm and required assistance in preparing an application.

ERA met with the selected farm owner/operator to discuss the PADEP Guidelines for Land Application of Yard Waste and the "permit-by-rule" requirements under Title 25 of the Pa. Code Section 271.103(h). ERA also reviewed the data and information required to conduct an evaluation and prepare a permit application. ERA conducted a site visitation/inspection and evaluation of the candidate application site, developed a site plan, completed all forms and narratives required under PADEP Guidelines and appropriate regulations. The permit application was submitted to PADEP in March of 2009 and is currently under review.

2.0 Background

The Township has a total area of 18.4 square miles, a population of 8,867 persons and 2,132 households (2000 census). The Township is moderately populated at 484.5 persons per square mile.

Curbside collection for municipal waste is on a private subscription basis, residents contract with the private hauler of their choice.

The Township provides for residential curbside collection of designated recyclables (via contracted services with J.P. Mascaro, a private hauler).

The Township's designated residential recyclables include the following:

- ☑ **Glass Containers** - clear, brown and green.
- ☑ **Cans -** aluminum, steel and bi-metallic.
- ☑ **Plastic -** #1 thru #7
- ☑ **Newspapers**
- ☑ **Mixed Paper -** phone books, paperback books, magazines, junk mail, and home, school and office paper.
- ☑ **Corrugated Cardboard**

A dual stream system is used for collection of recyclables. Each household is provided a fourteen (14) gallon rectangular bin for commingled recyclables (glass, metal and plastics containers). Newspaper, mixed paper and corrugated (no larger than 24" X24") are required to be placed in paper bags or bundled with string and placed on top of or alongside the recycling container.

The Township provides for residential curbside collection of leaf and yard waste. Residential leaf and yard waste collection is provided by municipal crews once during the spring and, at a minimum, twice during the fall. The Township's leaf waste collection program is augmented by two drop-off collection sites for leaf and yard waste.

One of the drop-off sites is located in the south central section of the Township the other is located in the northwest corner. The sites are equipped with forty (40) cubic yard roll off containers for collection of leaf and yard waste and are available to residents from 7:30 am to 3:00 pm Monday through Friday. The Township has a contract with Zwicky Processing and Recycling Inc. to operate/service the drop-offs and provide processing and composting services for materials collected.

Yard waste has historically been collected curbside by public works personnel using municipal dump and pickup trucks. Residents are required to purchase thirty (30) gallon paper biodegradable leaf and yard waste collection bags. No limit is set on the number of bags per household per collection.

Leaf and yard waste collected by the Township is delivered to Zwicky Processing and Recycling Inc. located approximately 14-miles northeast of the Township in Fleetwood Borough, Berks County PA. The Township also delivers leaves, collected during the fall, to various farms in the region for land application and incorporation.

3.0 Overview and Current Situation

The Township desires to update and improve its leaf waste collection program to increase efficiency and reduce cost. It was determined by the Township that bulk collection of leaves using leaf vacuum equipment would help to achieve their goal. The use of vacuum equipment reduces manpower requirements, increases collection efficiency via increased load capacity and reduces the number of trips required to offload leaves. Bulk collection of leaves also eliminates resident's costs and the additional efforts associated with use of biodegradable bags. The Township has applied for an Act 101 Section 902 Grant to assist in purchasing vacuum equipment needed to upgrade their leaf collection program.

A pilot curbside collection program was initiated in fall 2008 for limited bulk collection of leaves, using the Township's existing equipment. The Township plans to purchase vacuum equipment, with the assistance of Act 101 Section 902 funding, to expand bulk collection of leaves and eventually eliminate the use of biodegradable bags.

To further augment the Township leaf and yard waste program technical assistance was requested through the Recycling Technical Assistance Program to support it in developing a leaf and yard waste compost facility. The Township's primary objective in developing a leaf and yard waste compost facility is to provide a convenient, economical and reliable outlet for the processing/composting of leaves collected in the fall. Environmental Resources Associates (ERA) was selected to provide consulting services to assist the Township in establishing a leaf and yard waste compost facility, specifically to site design and permit a compost facility consistent with the PADEP "Guidelines for Yard Waste Composting Facilities".

4.0 Compost Site Evaluations

ERA met with Township representatives to review its current leaf and yard waste collection program and the regulatory requirements for the development of a compost facility.

Additional meetings were held with various Township representatives to review site and development requirements for a compost facility and required processing equipment and operational procedures. The Township was requested by ERA to identify potential candidate sites (in the range of two to five acres) for development of a compost facility.

Several potential candidate sites were identified for consideration and evaluation. The selected candidate sites were evaluated based on environmental, social and economic considerations and the limitations and requirements specified in the PADEP "Guidelines for Yard Waste Composting Facilities" and pertinent regulations.

ERA performed site inspections and desktop evaluations of data on four selected candidate sites proposed by the Township. Based on the evaluations none of the sites were considered viable for development of a compost facility.

5.0 Consideration of Alternatives

Given that the candidate compost sites did not meet criterion, ERA requested a meeting with the Township to discuss/identify additional potential sites (if any) and/or to discuss alternative composting/processing options for leaf and yard waste.

ERA participated in a July 24, 2008 meeting with the Township, Berks County Solid Waste Authority and PADEP (Southcentral Region) representatives to explore the above noted. Following lengthy discussion of various Township properties, it was determined that the Township did not own any property that met regulatory criteria and/or was logistically practical for the development of a compost facility.

To meet the Township's primary objective (to provide a convenient, economical and reliable outlet for the processing of leaves collected in the fall) options for use of an existing municipal and/or private compost facilities and agricultural land application on local farms were considered. Due to costs associated with transport of leaves and/or logistics, the use of existing municipal and/or private compost facilities was not favored. Given the agricultural character of the area and the Township's familiarity with local farmers, a consensus was reached that the Township explore the potential for securing the services of a local farm to accept its leaves for land application.

The Township subsequently contacted a local farmer who agreed to accept the leaves from its fall collections for land application. However, the farmer did not possess a permit for the farm for land application of leaves and would require assistance in preparing an application.

As previously noted the Township had used local farms for land application of a portion of the leaves collected during fall. However, the Township's collection of leaves in biodegradable bags presented a processing challenge for land application, in that the leaves must be removed from the bags prior to land application. This situation will be resolved if the Township's planed transition to bulk collection of leaves occurs.

6.0 Land Application

Land application and incorporation of leaves on active farmland, also referred to as sheet composting, is a viable alternative to conventional windrow composting. Both conventional compost facilities and land application sites for leaf waste (five acres or less) are afforded the benefit of a "permit-by-rule" under Title 25 PA Code, Section 271.103(h) and the PADEP Guidelines for Yard Waste Compost Facilities. The regulations and Guidelines provide for abbreviated regulatory requirements and a simplified permitting process to encourage the use of these low technology options for the beneficial reuse/recycling of leaf waste. As with leaf waste composting facilities land application sites must submit an application to PADEP and adhere to specific guidelines/requirements in order to comply with the permit-by-rule requirements of 25 Pa. Code Section 271.103(h), as listed below.

LAND APPLICATION OF YARD WASTE

A municipality or county that collects yard waste and delivers it to any person to land apply as part of a normal farming operation, shall comply with the following guidelines in order to comply with the permit-by-rule requirements of 25 Pa. Code Section 271.103(h).

General Requirements

1. *A municipality or county must notify the Department with the following information:*

    a. *Sponsoring municipality or county.*

    b. *Responsible official/contact person, including name, address, and telephone number.*

    c. *Location, including identification of the site on a U.S.G.S. 7.5' topographic map.*

    d. *Operational plan:*

        i. *A general site plan must be included which contains the following information for land application sites:*

            A. *Access road*

            B. *Tipping area*

            C. *Surface water controls (tipping area only)*

            D. *Farm soil conservation plan and nutrient management plan.*

        ii. *The operational narrative must include a description of each of the following:*

            A. *Operational hours for receiving yard waste*

            B. *Land application and incorporation frequency*

            C. *Plan for removal of yard waste from bags*

            D. *Spreading and incorporation methods and frequency*

            E. *Source of leaves and grass clippings.*

        iii. *Volume of yard waste processed during the previous year or expected to be processed during the first year of operation.*

Operational Requirements

1. *All surface water shall be diverted away from the tipping or storage area. Proper drainage must be maintained to prevent ponding.*

2. *Yard waste should be delivered to the farm in bulk. Where bags or other containers are used for collection, the bags or containers must be emptied of all yard waste delivered to the farm by the end of each day.*

3. *The Department may prohibit the use of grass clippings at the farm if the grass clippings cause or contribute to nuisances, or if the site has the potential to adversely affect the citizens or environment of the Commonwealth. Grass clippings shall not be brought to or received at a farm unless:*

    a. *The grass clippings are delivered to the farm in bulk. Where bags or other containers are used for collection, the bags and containers must be emptied of the grass clippings delivered to the farm by the end of each day.*

    b. *The grass clippings are to be spread in layers not to exceed six (6) inches in depth within one (1) week of delivery to the site.*

    c. *Grass clippings mixed with manure and stored in an acceptable manure storage facility may be stored for up to 120 days, provided the storage of the material does not create a nuisance or environmental impact.*

4. *The operator shall not allow compostable materials or residues to be blown or otherwise deposited offsite.*

5. *No yard waste may be disposed of in waters of the Commonwealth.*

Residue Disposal

1. *The operator shall not allow non-compostable residues or solid waste other than yard waste to accumulate at the farm, and shall provide for proper disposal or processing.*

2. *Yard waste and other municipal waste that is received at the farm, that is not suitable for land application, shall be removed weekly and disposed or processed at a permitted municipal waste facility.*

Nuisance Control

1. *The operator shall not cause or allow the attraction, harborage, or breeding of vectors.*

2. *The operator shall not cause or allow conditions that are harmful to the environment or public health, or that cause safety hazards, odors, noise, and other public nuisances.*

Air Resources Protection

1. *The operator shall implement fugitive dust control measures when necessary.*

2. *No person, municipality, or county shall cause or allow open burning at the facility.*

Water Quality Protection

1. *The operator shall manage surface water and control erosion and sedimentation in accordance with the requirements of 25 Pa. Code Chapter 102, Erosion Control.*

2. *The operator shall not cause or allow a point or non-point source pollution discharge from or on the facility to any surface waters of the Commonwealth.*

6.1 Equipment and Application/Incorporation Methods

Application and incorporation of leaves into farm soils is a relatively simple process requiring normal farm equipment. For spreading/application of leaves a rear unloading manure spreader is generally used. A tractor loader is used to load the leaves and pull the manure spreader. Alternatively the leaves can be applied using a tractor loader to uniformly distribute the leaves over an area. This technique is less time consuming and is most successful when truck loads of leaves are off-loaded at set intervals. This technique generally requires dry weather conditions and well drained soils and is not effective on saturated leaves, as clumping can occur and inhibit even distribution of the leaves.

Following application/distribution of the leaves they are incorporated into the soil using an offset disc, mold board or chisel plow.

Equipment and methods of application and incorporation vary based on specific site conditions, and generally require some experimentation with available equipment to determine the most efficient and effective methods for use on a given farm.

Project Benefits and Contract

The Township and Levengood's Farm will enter into a partnership of mutual benefit to both parties.

The Township is providing Levengood's Farm technical assistance required to gain a permit for the land application of leaves. Levengood's Farm will provide the site, its expertise and equipment required to process the leaves collected by the Township.

The Township benefits by avoiding the costs associated with development, purchase of equipment and operation of a compost facility and reduced haul costs. The Levengood's Farm is located less than three miles from the center of the Township.

The farm benefits by improvements in the soil's nutrient pool, moisture holding capacity and tilth.

A contract/agreement will be formalized between the Township and Levengood's Farm to define roles and responsibilities of each party.

Listed below are suggested items for inclusion in a contract.

- ☑ Tipping fee/compensation.
- ☑ Method of measuring material (cubic yards based on truck load capacity).
- ☑ Quantities of leaves to be accepted.
- ☑ Responsible entity for disposing of unacceptable material delivered to farm.
- ☑ Responsible entity for emptying and disposing of plastic /paper bags (if any).
- ☑ Time periods and location for accepting leaves.
- ☑ Record keeping.
- ☑ Contract review periods.
- ☑ Provisions for dispute resolution or contract modifications.

8.0 Permit Application

The Township arranged a meeting with a local farm owner who expressed interest in obtaining a permit and accepting the Township's leaves for the purpose of land application on the farm. ERA met with Mr. Donald Levengood owner/operator of Levengood's Farm to discuss the PADEP Guidelines and the permit-by-rule requirements under Title 25 of the Pa. Code Section 271.103(h).

ERA requested and reviewed data and information provided by Mr. Levengood and noted that Levengood's Farm lacked a soil conservation plan and a nutrient management plan, as required by the Guidelines. ERA contacted the Berks County Conservation District and arranged for a meeting between Mr. Levengood and appropriate District personnel to help facilitate the preparation of the required plans.

ERA conducted a site visitations/inspections of the proposed 4.8-acre site located on Levengood's Farm in Amity Township, developed a site plan, completed all forms and narratives required under PADEP Guidelines and regulations.

ERA reviewed the facility permit application with the owner of Levengood's Farm prior to submission to PADEP. The permit application was submitted to PADEP in March of 2009. A copy of the application is included in Attachment A.

ATTACHMENT A

LAND APPLICATION OF YARD WASTE APPLICATION

Environmental Resources Associates

706 MONROE STREET
STROUDSBURG, PENNSYLVANIA 18360

CONSULTANTS IN ENVIRONMENTAL RESOURCE MANAGEMENT

ERA

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SECTION 1

APPLICATION

2500-FM-BWM0265 REV. 12/08

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

LAND APPLICATION OF YARD WASTE FORM

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

1. Sponsoring Municipality or County (Name and Mailing Address) Telephone Number
   Amity Township **(610)-689-6000**
   2004 Weavertown Road
   Douglasville, PA 19518

2. Name of Farm **Levengood's Farm** Contact Telephone Number
   Contact Person at Farm **Donald Levengood** **(610)-689-4034**
   Property Owner's Name **Donald Levengood**
   Address of Facility **7636 Boyertown Pike**
   Douglasville
   (Include Access Road Name and Legislative Number)
   State **Pennsylvania** Zip **Code 19518**
   City-Borough-Township **Amity Township**
   County Berks **County**

   Attach a U.S.G.S. 7.5 map identifying the yard waste site boundaries outlined on it.

   ☑ **(See Attachment A)**

3. Total acres of farm land application area **4.8-acres**

4. Volume of yard waste to be received annually in cubic yards. **160 -cubic yards**

5. Prepare and include in this application a general site plan* for the facility which illustrates the location of the following items:

   Access roads in relation to the nearest public road
   Tipping area
   Surface water controls (tipping area only)
   Fields proposed for land application.

   ☑ **(See Attachment B)**

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

6. Please address the following items:

- A complete list source(s) of yard waste to be received.

☑ **Amity Township will collect leaf waste and deliver them directly to the farm site.**

Describe the method for inspecting incoming yard waste.

☑ **Municipal personnel have been trained to <u>not</u> collect any leaf waste that includes unacceptable materials or contaminants. Residents are educated by the Township to remove any unacceptable materials or contaminants from their yard waste prior to placing them at the curb.**

☑ **All loads of incoming leaf waste delivered by the Township will be inspected by farm personnel during off-loading and during land application, to ensure quality control.**

- Describe the plan for rejecting or disposing of unacceptable materials and residuals.

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

☑ **All loads of leaves delivered to the will be inspected by farm personnel during off-loading and during application, to ensure quality control.**

Similarly if any bags are delivered to the site their contents will immediately be emptied and inspected. Any unacceptable material identified during inspections will be culled by farm personnel. Materials not suitable for land application shall be removed weekly and disposed or processed at a permitted municipal waste facility.

☑ **Any litter generated by site activities or deliveries will be policed by farm personnel.**

- Provide the name and location of the disposal or processing site for unacceptable materials and residuals.

☑ **Designated disposal facility is the Conestoga Landfill, located at 420 Quarry Road Morgantown, PA 19543.**

- Attach the farm soil conservation plan and nutrient management plan.

☑ **A copy of the nutrient management plan is included in Attachment C. As discussed with the Department a copy of a soil conservation plan will be forwarded for review upon completion by the Berks County Conservation District.**

- Describe the volume of yard waste processed during the previous year or expected to be processed during the first year of operation.

☑ **The estimated volume of leaf waste processed during 2008 was approximately 60-cubic yards. Planned expansion in collection service and improvements in collection practices and equipment will undoubtedly increase the volume of leaves collected for processing, volumes are estimated to increase to the range of 100 to 150-cubic yards.**

- Please provide an operational narrative which includes a description of each of the following:

- Operational hours for receiving yard waste
- Land application and incorporation frequency
- Plan for removal of yard waste from bags
- Spreading and incorporation methods and frequency
- Source of leaves and grass clippings.

☑ **Operational Narrative**

Amity Township and Levengood's Farm have entered into a mutually beneficial public/private partnership for the environmentally sound and cost effective collection and beneficial use of leaf waste.

The land application site will occupy an area of approximately 4.8 acres. Materials accepted will be leaves.

Amity Township will collect leaves during the fall and deliver them in bulk directly to the farm on designated days during specified hours. Leaf delivery will occur Monday through Friday between the hours of 8:00 am and 6:00 pm.

Municipal personnel have been trained to <u>not</u> collect any leaf waste that includes unacceptable materials or contaminants. Residents are educated by the Township to remove any unacceptable materials or contaminants from their leaf waste prior to placing them at the curb.

All loads of leaves delivered to the farm will be inspected by farm personnel during off-loading and during application, to ensure quality control.

Similarly if any bags are delivered to the site their contents will immediately be emptied and inspected. Any unacceptable material identified during inspections will be culled by farm personnel. Materials not suitable for land application shall be removed weekly and disposed or processed at a permitted municipal waste facility, at the Township's expense.

Leaf waste delivered to the farm will expeditiously be incorporated into the soil using mechanized equipment to accelerate and enhance decomposition.

Application and incorporation of leaves into farm soils is a relatively simple process requiring normal farm equipment. To eliminate clumps (resulting from compaction) and/or to reduce particle size (for ease of application and to enhance decomposition) a five foot rotary mower may be used to process leaves prior to application.

For spreading leaves a manure spreader (rear unloading, beater type) or a tractor loader will be used to spread leaves on the field to insure uniform thin application.

A tractor loader with a one cubic yard bucket will load the leaves and pull the manure spreader. The leaves will be land applied within six days of their delivery.

Following application of the leaves an offset disc will be used to initially incorporate the leaves into the soil. Several passes of the offset disc will be made to insure proper incorporation of the leaves during initial incorporation. Final incorporation will be accomplished using a moldboard plow and will occur prior to following tilling season.

Personnel working at the site will use a cellular phone to contact emergency services in the event of emergency. Both the police and fire departments will be briefed as to the site's layout and standard operating procedures and receive a copy of the facility's Contingency Plan for Emergency Procedures.

Equipment proposed for use at the farm facility includes;

- ✓ **One tractor/loader (with a one cubic yard bucket)**
- ✓ **One offset disc (twelve foot)**
- ✓ **One 250-gallon water trailer**
- ✓ **One mold board plow**
- ✓ **One rotary mower (five foot deck)**

Levengood's Farm has requested and received conservation planning assistance from the Berks County Conservation District (District). Levengood's Farm follows best conservation practices in operation of its farm. Levengood's Farm will continue to work cooperatively with the District in the planning and development of a soil conservation plan, a copy of the plan will be submitted to the Department upon completion. A meeting with the County Conservation District will also be held to seek advice and guidance on developing required surface water controls (if any) that meet the requirements of 25 PA Code Chapter 102, Erosion Control. An E&S Plan will be developed (if required) and a copy of the County Conservation District approved plan will be submitted to the Department.

☑ **The Township has developed a leaf and yard waste public education/outreach campaign. The campaign includes program details in announcements at public meetings, display advertisements in local newspapers, newsletters and on its website.**

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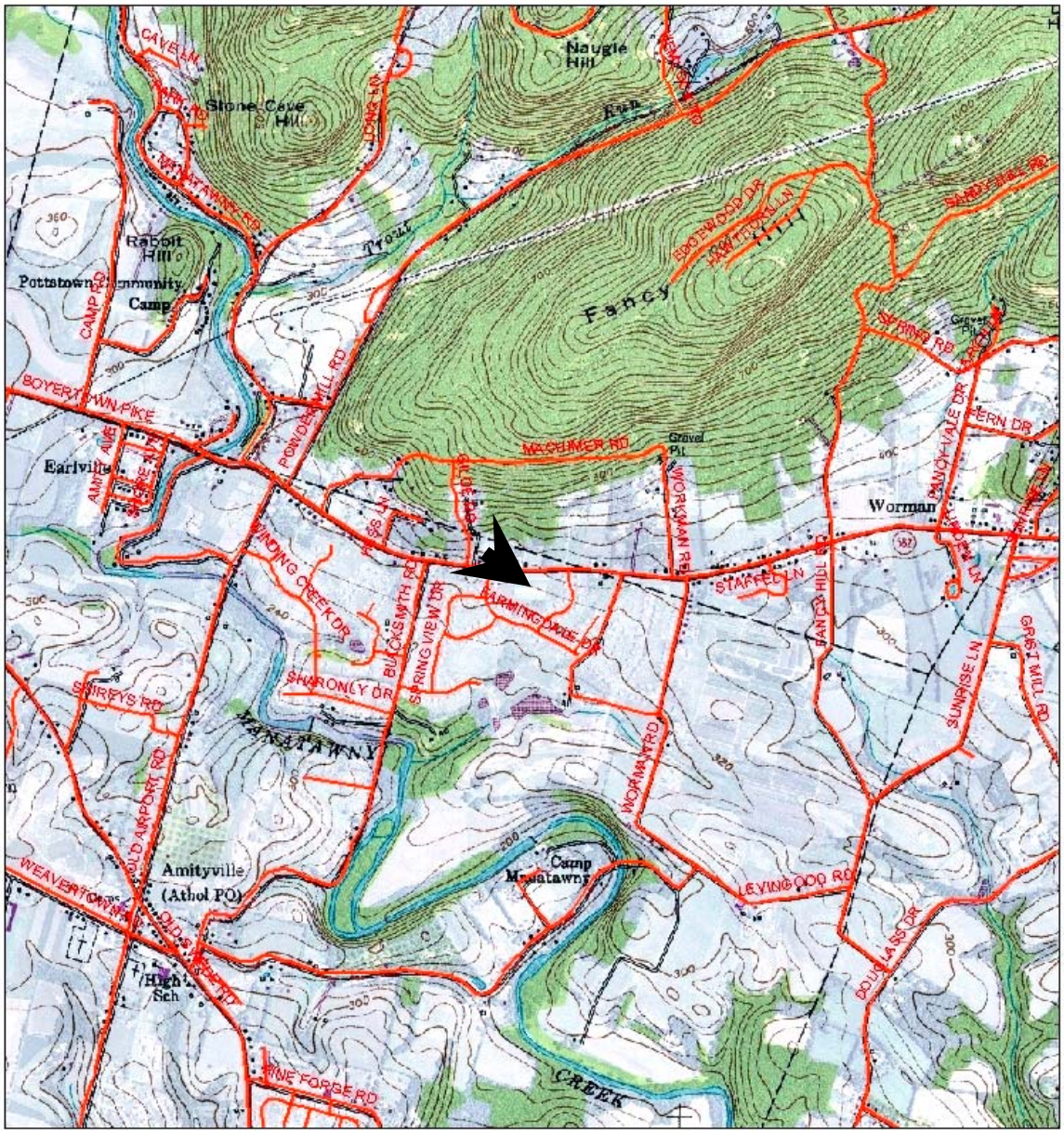
ATTACHMENT A

TOPOGRAPHIC MAP

Levengood Farm
Topographic Map



Boyertown Quad

2,400 1,200 0 2,400 Feet

1:24,000

N

Application Site Location

ATTACHMENT B

SITE PLAN

ATTACHMENT C

NUTRIENT MANAGEMENT PLAN

***Note*: As discussed with the Department a copy of a soil conservation plan will be forwarded for review upon completion by the Berks County Conservation District.**

Nutrient Balance Sheets

Prepared For

Levengood Farm

7652 Boyertown Pike
Douglassville, PA 19518
610.689.5182

Prepared By

Name:___Joel C. Graydus_____
Certification No.___#1305_____

Specialist Signature _____

Date of Development _____

Nutrient Balance Worksheet Appendices

The following appendices need to accompany the Nutrient Balance Worksheets if applicable:

- Maps of fields where manure is to be applied including applicable manure application setbacks
- Completed P-Index spreadsheet (or other similar information summary) listing the source and transport factors and final Index result for each crop management unit (if applicable)

Nutrient Balance Worksheet

Crop Management Unit Identification	Acres	Crop	Yield
Levengood Farm All Fields (Area must be clearly identified on a map)	**4.8**	**Sweet Corn**	**18,000 ears/acre**

	OPTION 1 – P Removal	OPTION 2 – N Requirement	OPTION 3 – P Index	Notes:
Manure Plan Basis	[X] • P removal rates • >150' application setback from streams, lakes or ponds (Use the P_2O_5 column to determine acceptable rate and complete the N column to determine additional N needed)	[ ] • N requirement rates • >150' application setback from streams, lakes or ponds • Soil test < 200 ppm Soil test P (ppm) _____ (Use the N column to determine acceptable rate)	[ ] • P Index evaluation (must be attached) (Use the appropriate column(s) based on the P Index to determine acceptable rate)	

Manure Type	Manure Analysis			Application Timing	Application Method
	Total N	P_2O_5	K_2O		
Municipal Leaves	20	2	7.6	Fall Application	Surface Applied

	N	P_2O_5	Application Record & Notes
A) Recommendation (lb/A) Nitrogen - Tables 1 & 2 or Soil Test (AG Table 1.2-6;1.2-7) Phosphorus (option 2 & 3) - Table 3 or Soil Test (which ever is greater) (AG Table 1.2-9)	51	20.8	Sweet Corn will remove an average of: 51 lbs of Nitrogen/acre 20.8 lbs of Phosphorus/acre 40.8 lbs of Potassium/acre
B) Fertilizer Applied (lb/A) (Regardless of Manure e.g. Starter)	0	0	
Other Organic Sources Applied (lb/A) (e.g. Biosolids, Other Manure)	0	0	
C) Residual Manure N (lb/A) (Rarely 0 lb N/A; Frequent 20 lb N/A; Continuous 35 lb N/A)	2		Residual Nitrogen for the leaves was calculated: Organic N decomposed from past applications 1 Yr Ago: 0.05 2 Yrs Ago: 0.02 3 Yrs Ago: 0.01 4 Yrs Ago: 0.01 5 Yrs Ago: 0.01 Total of all these years is 0.10 0.10 * 20 = 2 lbs of residual nitrogen
D) Previous Legume N (lb/A) Table 4 or Soil Test Report (AG Table 1.2-8)	0		
E) Net Nutrient Requirement (lb/A) (A – B – C - D)	49	20.8	
F) Manure Nutrient Content (lb/ton or lb/1000gal)	20	2	
G) Nitrogen Availability Factor	.10		
H) Available Nitrogen (lb/ton or lb/1000gal) (F x G)	2		
I) Balanced Manure Rate (ton/A or gallons/A) For N: (E ÷ H) For P: (E ÷ F)	24.5	10.4	It is strongly recommended that soil tests be taken on this farm in order to more accurately gauge soil fertility. It is strongly recommended that a nutrient analysis of the leaf material is taken every year in order more accurately detail crop recommendations and application rates.
J) Actual Planned Manure Rate (ton/A or gallons/A) Must be less than or equal to the appropriate Balanced Rate based on the plan basis being used	10	10	
K) Nutrients Applied at Planned Rate (lb/A) For N: (J x H) For P: (J x F)	20	20	
L) Nutrient Balance at Planned Rate (lb/A) (E - K) (Indicate short or excess)	29	0.8	

Appendix 1

Operation Maps

Maps (or aerial photographs) required to accompany Nutrient Balance Sheets must identify: crop management unit (field) identification, acreage and boundaries, manure application setback areas and buffers and associated landscape features, and location of in-field manure stacking areas (including each site in stacking rotation).

Levengood Farm
Amity Township

1:2,000
0 55 110 220 330 440
Feet

Appendix 2

Phosphorus Index

Include the current Pennsylvania Phosphorus Index Spreadsheet or paper worksheet for each field that required Part B of the P Index when using Manure Plan Basis Option 3.

Levengood Farm
Amity Township
Soils Map

Legend

Farm and Field Boundaries

Soils

1:2,000

0 55 110 220 330 440 Feet

ATTACHMENT D

RESIDUE AND NUISANCE CONTROL PLAN

RESIDUE AND NUISANCE CONTROL PLAN

Amity Township personnel have been trained to not collect leaf waste that includes unacceptable materials or contaminants. Residents are educated by the Township to remove any unacceptable materials or contaminants from their leaves prior to placing them at the curb.

All loads of leaves delivered to the farm will be inspected by farm personnel during off-loading and during application, to ensure quality control.

Similarly if any bags are delivered to the farm their contents will immediately be emptied and inspected. Any unacceptable material identified during inspections will be culled by farm personnel. Materials not suitable for land application shall be removed weekly and disposed or processed at a permitted municipal waste facility, at the Township's expense.

Any litter or residue generated by site activities or deliveries will be policed by farm personnel for subsequent proper disposal.

Unacceptable/residue material will be removed for proper disposal at the designated landfill.

Dry leaf waste delivered to the farm, that could potentially be blown offsite, will be sprayed with water, via use of onsite water trailer.

All operations will be monitored on a regular basis and records/logs of incoming leaf waste will be maintained. Any situation noted that might attract and harbor or cause breeding of vectors or vermin will be addressed as quickly as possible on a case-by-case basis.

The site's soil types are well drained and generally allow for proper drainage and thus will avoid ponding. However should any ponding of water be observed on site it will be subjected to immediate corrective actions. These actions may include: re-grading the area or modifying drainage pattern.

Through the elimination of standing water and the timely incorporation of leaf waste breeding of vermin and insects will be inhibited.

Noise from operating equipment should not present a problem considering it will be the same as normal farm operations and given the limited work effort required to manage the relatively small volume of organic material. Existing trees, hedgerows and vegetation will also act as a noise and visual barrier.

A water trailer will be used to suppress dust generated from access roads during dry conditions (if required).

Levengood's Farm will operate the site in a professional manner following best management practices. 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.

ATTACHMENT E

FEEDSTOCK LOG

LEVENGOOD FARM- FEEDSTOCK and PRODUCT LOG

Month - _____ Year -_____

	Vehicle ___ Type_____ Cu. Yd.____	Vehicle ___ Type_____ Cu. Yd.____	Vehicle ___ Type_____ Cu. Yd.____	Vehicle ___ Type_____ Cu. Yd.____	Vehicle ___ Type_____ Cu. Yd.____	Vehicle ___ Type_____ Cu. Yd.____	TOTAL
Date							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Total							

Vehicle - (M) Municipal, (R) Resident,
Type - (P) Pickup, (D) Dump, (T) Trailer, (O) Other

SECTION 2

CONTINGENCY PLAN
FOR
EMERGENCY PROCEDURES

LEVENGOOD'S FARM

PREPAREDNESS PREVENTION

AND

CONTINGENCY PLAN

A. DESCRIPTION OF FACILITY/OPERATION

A. 1 General Description of Activity

Amity Township (Township) and Levengood's Farm have entered into a mutually beneficial public/private partnership for the environmentally sound and cost effective collection and beneficial use of leaf waste. Levengood's Farm will operate a leaf waste land application site for leaves collected by the Township.

The leaf waste land application site will be a 4.8–acre farm field located in Amity Township, Berks County, Pennsylvania (see Attachment A). The project will not require additional zoning approval.

Materials accepted will be leaf waste as per PADEP "Guidelines for Land Application of Yard Waste ". The farm site will be limited to accepting and processing a maximum of 160-cubic yards of leaf waste.

Amity Township will collect leaves during the fall and deliver them directly to Levengood's Farm on designated days during specified hours. Leaf delivery will occur Monday through Friday between the hours of 8:00 am and 6:00 pm.

Municipal personnel have been trained to not collect any leaf waste that includes unacceptable materials or contaminants. Residents will be educated by the Township to remove any unacceptable materials or contaminants from their leaves prior to placing them at the curb.

Leaves delivered to the farm will expeditiously be incorporated into the soil using mechanized equipment to accelerate and enhance decomposition.

All collection vehicles delivering loads of leaves will be visually inspected by farm personnel prior to and during offloading to ensure quality control. Any material not meeting specifications will be culled and properly disposed of at the designated landfill.

If any bags are delivered to the site their contents will immediately be emptied and inspected. Plastic bags will be returned to the Township, as will any unacceptable material or said materials will be properly disposed of, at the Township's expense.

Application and incorporation of leaves into farm soils is a relatively simple process requiring normal farm equipment. For spreading leaves a manure spreader (rear unloading, beater type) and tractor loader will be used to insure uniform application. A tractor loader will load the leaves and will pull the manure spreader.

To eliminate clumps (resulting from compaction) and/or to reduce particle size (for ease of application and to enhance decomposition) a rotary mower may be used to process leaves prior to application.

Following application of the leaves an offset disc will be used to incorporate the leaves into the soil. Several passes of the disc will be made to insure proper incorporation of

the leaves, during initial incorporation. Final incorporation will be accomplished by the use of a mold board plow prior to the next growing season.

A2. Description of Existing Emergency Response Plan

The site is new and therefore has no existing emergency plan.

A3. Material and Waste Inventory

Due to the simplicity of the land application process, and the thorough inspection of incoming materials, receipt of ancillary and/or unacceptable waste materials will be minimal. There is no plan to store or maintain fuel or chemicals at the site. Only the fuel, motor oil and fluids contained in handling and processing machinery will be on the site.

A4. Pollution Incident History

None.

A5. Implementation Schedule

Operations personnel will be trained to follow procedures set forth in this PPC Plan and best management practices.

B. DESCRIPTION OF HOW PLAN IS IMPLEMENTED BY ORGANIZATION

B1. Organizational Structure for Implementation of the PPC Plan

In the event that an emergency occurs at the site, it will be the responsibility of any on-site staff to immediately notify the site operator, who will be a designated second level or Secondary Emergency Coordinator (SEC). It is the responsibility of the SEC to immediately notify the first level or Primary Emergency Coordinator (PEC) of the emergency and to implement all measures of the PPC Plan. During the absence of the PEC, it is the responsibility of the (SEC) to both coordinate emergency activities and to assure submission of the written Incident Report to the DEP as required under this Plan.

The PPC Committee will consist of, Mr. Donald Levengood who will serve, as the PEC and, Mr. John Levengood as SEC. It will be the duty and responsibility of the PPC Committee to meet annually (at a minimum) to: review and identify materials and wastes handled, identify potential hazards (if any), establish and review material and waste handling/storage procedures, accident reporting procedures; and visual inspection programs. The PPC Committee will also review any past incidents and the counter-measures utilized to assess effectiveness. In addition, the PPC Committee will be responsible for coordinating and establishing training and educational programs for personnel; and, periodic review, evaluation and improvement of the PPC Plan. The Committee will review any new regulations, equipment, or process changes and incorporate any needed changes into the PPC Plan. If the PPC Plan is updated, copies will be provided to the DEP and made available to emergency response agencies/contacts.

B2. List of Emergency Coordinators

Primary: **Donald Levengood**

Home Address: **29 Mochamer Road**
Douglasville, PA 19518
Home Telephone: **(610)-689-5155**

Business Address: **7636 Boyertown Pike**
Douglasville, PA 19518
Business Telephone: **(610)-689-4034**

Secondary: **John Levengood**

Home Address: **29 Machamer Road**
Douglasville, PA 19518
Home Telephone: **(610)-689-8238**

Business Address: **7636 Boyertown Pike**
Douglasville, PA 19518
Business Telephone: **(610)-689-4034**

B3. Duties and Responsibilities of the Primary Emergency Coordinator

Among other duties and responsibilities of the PEC is routine inspection of the site to ensure that neat and orderly operation is maintained and to assure that leaf waste storage areas, operations areas, and roadways remain accessible and free of extraneous items which might otherwise clutter and hinder operational safety and efficiency. During an actual or imminent emergency, the PEC will ensure adequate space is provided for unobstructed movement of emergency personnel and equipment to all portions of the site. The PEC also will ensure that all agencies listed in Section E will be offered a copy of the PPC Plan.

Although the materials processed at the facility are not considered of a nature that would pose severe environmental consequences, even if mismanaged, it is recognized that it is the responsibility of the PEC to minimize any deleterious effect to personnel and the environment caused by an incident at the site.

True emergency scenarios can realistically be limited to those involving fire. During an emergency, operations at the site would be discontinued. All delivery/shipment of materials would be halted. Access would remain open to allow for movement of emergency response personnel and equipment. A 250-gallon water tank trailer will be used as a first response in the event of a fire at the site, pending arrival of the fire company.

In an imminent or actual emergency, the PEC must immediately:

1. Notify all on-site personnel,

2. Identify the character, exact source, amount and a real extent of the fire,

3. Concurrently assess the actual and potential hazards to the public health and safety, public welfare and the environment that have resulted or may result from the fire. This assessment will consider both direct and indirect effects of the fire.

The PEC must assess possible hazards to human health or the environment that may result from a fire. The assessment will consider both direct and indirect effects.

If the PEC determines that the facility has a situation, which would threaten human health or the environment, he will immediately notify the applicable local authorities, indicating if evacuation of local areas is advisable. Additionally, he/ she will immediately notify the Department by telephone at (877)-333-1904 and the National Response Center at 800-424-8802 and report the following:

1. Name of the person reporting the incident;
2. Name and address of the operation;
3. Telephone number where the person reporting the incident can be reached;
4. Date, time and location of the incident;
5. A brief description of the incident, nature of the materials or wastes involved, extent of any injuries and possible hazards to human health or the environment;
6. The estimated quantity of the materials or wastes involved;
7. The extent of contamination of land, water, or air, if known;
8. Existence of dangers to public health and safety, public welfare, and the environment;
9. Nature of injuries, if any; and
10. Parts of the PPC Plan being implemented to alleviate the emergency.

During an emergency, the Primary and/or Secondary Emergency Coordinator will take all reasonable measures necessary to ensure that fire does not occur, re-occur or spread. These measures shall include, where applicable, stopping all operations and isolating the problem area.

If the facility ceases operation in response to a fire, the SEC (operator) will ensure that adequate monitoring is conducted wherever appropriate.

After an emergency, the SEC shall:

a. Clean up the affected areas,

b, Treat, store, or dispose of recovered materials, in a manner approved by the Department (testing of the affected area may be prevent processing or storage of materials in the area affected by the emergency until the area has been cleaned up and the Department has inspected and approved the cleanup.

Within 15 days after the incident, the PEC will submit a written report on the incident to the Department. The report will include the following:

1. Name, address, and telephone number of the individual filing the report;

2. Name, address, and telephone number of the facility;

3. Date, time, and location of the incident;

4. A brief description of the circumstances causing the incident;

5. A description and estimate of the quantity, by weight or volume, of materials or wastes involved;

6. An assessment of any contamination of land, water or air that has occurred due to the incident;

7. Estimated quantity and disposition of recovered materials or wastes and

8. Actions that will be taken to prevent a similar future occurrence.

B4. Chain of Command

Primary: **Donald Levengood**

Home Address: **29 Mochamer Road**
Douglasville, PA 19518
Home Telephone: **(610)-689-5155**

Business Address: **7636 Boyertown Pike**
Douglasville, PA 19518
Business Telephone: **(610)-689-4034**

Secondary: **John Levengood**

Home Address: **29 Machamer Road**
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Business Telephone: **(610)-689-4034**

C. SPILL, LEAK PREVENTION AND RESPONSE

C1. Pre-Release Planning

The site has been designed to minimize the potential for risk to the environment, the public and operational personnel. All operational personnel will be properly trained in their duties and responsibilities prior to functioning without direct supervision.

The land application site has a very limited number of materials, which have potential to cause significant harm to personnel or the environment if spilled. Only fuel (diesel) motor oil and other fluids used in operating machinery will be on site.

Leaves accepted at the site will contain limited amounts of moisture and should not present a problem. In the event of a spill or leak of fuel or machinery fluids, clean-up efforts will be initiated immediately. Clean-up will consist of using a tractor loader to collect the majority of solids, shovels and buckets will be used to collect the remnants and any minimal amounts of moisture will be collected with absorbent material.

C2. Material Compatibility

The land application process does not involve the use of materials that are corrosive or reactive.

C3. Inspection and Monitoring Program

During inspection of incoming and applied leaves any unacceptable material noted will be manually removed and disposed of properly. The time, date, results of, and name of person conducting these inspections will be recorded in written documentation.

Emergency equipment consists of five-pound A/B/C fire extinguishers located at the farms potting shed, and one five-pound A/B/C extinguisher located at the florist shop. Routine inspection/maintenance of all fire extinguishers is conducted annually.

C4. Preventative Maintenance

Preventative maintenance is conducted on all operating equipment, both as presented through the manufacturers' recommendations and as revealed to be necessary through a routine inspection program. Repairs will be instituted as soon as operationally practical when a component failure or impending failure is detected.

C5. Housekeeping Program

A conscious effort will continually be made to assure walkways, pathways, operational areas, maneuvering areas and roadways remain accessible and free of any items which might otherwise clutter and hinder operational safety and efficiency. Site personnel will routinely gather and properly dispose of any litter found on the site. The site will be monitored for proper drainage; if any ponding is evident, corrective measures will be taken. Any spillage, diesel fuel, motor oil, etc., will be immediately absorbed, the absorbent material will be placed in buckets and disposed of properly. All mechanical

equipment used at the site will regularly be washed down. Any spillage of material will be dealt with in accordance with measures as prescribed within this Plan.

C6. Security

Security will be effectively provided through observation of traffic from the farm's adjacent florist shop and residence. Signs at the entrance and surrounding the site will provide trespass notice to all unauthorized personnel. Anyone visiting the site must do so during operating hours.

C7. External Factors

- A power outage will have little, if any effect, on operations, as mechanical equipment will be operating from diesel fuel.

- The site is located above the 100-year flood plain; therefore, flooding of the operation is not anticipated.

C8. Employee Training Program

Employees will be trained by the emergency coordinators to understand their particular responsibilities with respect to preventive maintenance and safety. All employees will be made aware of the location of emergency equipment (telephones, fire extinguishers, etc.) and appropriate emergency procedures. On-going training will include periodic safety/emergency response meetings. Such meetings will be held on an annual basis, at a minimum. All new operations personnel will receive initial training by the established operations staff. The Emergency Coordinators will regularly review the operational, safety and maintenance procedures to ensure requirements will be met.

D. COUNTERMEASURE

D1. Countermeasures to be undertaken by the operations

D2. Countermeasures to be undertaken by Contractors

(Note: Section D1 and D2 were determined not required due to the nature of the operation.)

D3. Internal and External Communications or Alarm Systems

Due to the open-air nature of the operation, an internal communications system is not practical or necessary. External communication will be by cellular telephone.

D4. Evacuation Plan for Installation Personnel

Due to the nature of the operation, site evacuation is extremely unlikely. However, should such a situation arise, it will be the responsibility of the on-site emergency coordinator to advise all unnecessary personnel to leave the site. An elaborate alarm

system is considered unwarranted. Evacuation of the area will proceed via the site access roadway.

D5. Emergency Equipment

In an attempt to maintain a ready posture for any emergency, which might occur at the site, the following emergency equipment will be maintained on site or at the farm's potting shed. The equipment will be readily available and maintained to be operational at all times:

Description (Location),	**Intended Use,**	**Capabilities**
Portable Fire Extinguishers **(1), (2)**	Small Fires,	5 # lb. Type A/B/C
First Aid Kit **(2)**	Cuts/Burns,	
Eye Wash **(2)**	Eye Irritants	
Location Index: **(1)** Potting Shed, (**2) Florist** Office.		

E. EMERGENCY SPILL CONTROL NETWORK

E1. Arrangements with Local Emergency Response Agencies and

A representative will contact the State Police, fire department and hospital. The contacted entity will: be advised of the facility, given a description of the operations, to include identification of materials managed, and identification of possible types of injury to be encountered.

Additionally, the contacted agencies will be offered a follow-up meeting and/or site visit to better familiarize them with the site and its operations and offered a copy of the PPC Plan.

Due to the nature of the operations, special provisions beyond those noted herein will be not considered necessary.

E2. List of Agencies to be Notified

Dept. of Environmental Resources	877-333-1904
National Response Center	800-424-7362
County EMS Center	911
Police Department	911
Fire Department	911
Hospital	911