



CITY OF DURHAM
Department of Solid Waste Management
101 CITY HALL PLAZA 27701
1833 CAMDEN AVENUE | DURHAM, NC 27704
919.560.4186 | F 919.560.1197

December 20, 2015

William Perry Sugg, Permitting Hydrogeologist
Solid Waste Section/Division of Waste Management
NC Department of Environmental Quality (DEQ)
1646 Mail Service Center
Raleigh, NC 27699-1646

Perry:

The City of Durham's Solid Waste Management Department is requesting a permit amendment application for the renewal of permit **32-04-COMPOST-1991** issued to the City of Durham to operate a Large Type 1 Compost Facility located at 2115 E. Club Blvd. Durham, NC 27704. Each section that is applicable to this application is addressed below.

Please note that the City has been operating the Compost site as a wood waste processing facility. Therefore, this permit amendment application addresses:

- That no Compost activity is currently being conducted on the property, however the City reserves the right to compost at some point in the future,
- That only wood waste processing is conducted on site at this time,
- That a separate wood waste operations plan be submitted with this application,
- That a revised Compost Operations plan be submitted with this application,
- That the pond monitoring level be raised from 302.3 to 303.0,
- DEQ would consider renewing PTO 3204-COMPOST-1991 for a five year period commencing June 10, 2015.

The City followed the application guidelines as noted under the 15A NCAC 13B .1400 et seq and as provided in the Compost Facility Permit Application Guidance form provided by the NC Solid Waste Section. On the following pages, all questions pertaining to the application were answered directly related to this renewal and specifically, wood waste processing. After review, please direct any questions to my attention. Thank you.

Bruce Woody,
City of Durham
Waste Disposal Manager
Solid Waste Management

PERMIT ADMENDMENT APPLICATION
Permit 3204-COMPOST-1991
City of Durham, NC

Section 1 General Information:

1. The City of Durham Solid Waste Management Compost Facility, located at 2115 E. Club Blvd. Durham, NC 27704. The facility type is Large Type 1 Compost.
2. Bruce Woody, Waste Disposal Manager is applicant for the City of Durham. Contact information is as follows: email bruce.woody@durhamnc.gov, cell phone 919-452-5919, office 919-560-4186, fax number 919-560-1197. Offices address 1833 Camden Avenue Durham, NC 27704.
3. The City of Durham is the land owner and the Director of Solid Waste Management, Donald Long will sign as owner in regard to this application via the **City Manager's Office located 101 City Hall Plaza Durham, NC 27701**. Verification of land ownership is not applicable as no changes have occurred in property ownership since the original application preceding this document.
4. Not applicable.
5. The person to receive permit fee invoices is Bruce Woody (same contact information in item #2)

Section 2 Siting Requirements:

In regard to this application, this section is not applicable for permit renewal. All siting requirements were addressed and approved during the initial permitting of the facility.

Section 3 Design Plan:

1. The only feedstock that currently will enter the facility is wood waste materials consisting of limbs, grass, leaves, branches and controlled amounts of tree trunks (smaller sizes). Biodegradable paper yard waste bags incidental to residential/commercial lawn care are included too. These materials will be ground up and placed in windrows **not to exceed 200 feet in length and not exceed 25 in width and not exceed 12 in height**. Product storage dimensions shall be limited to a maximum of **10 feet high by 20 feet wide by 100 feet long**. All feedstock is received from the general public and what is collected by the City of Durham's yard waste fleet vehicles. **No composting activities will take place on the site at time; however the City reserves the right to begin to operate the compost facility in the**

future. Compost feedstock will include yard waste and clean wood waste, including untreated and unpainted wood pallets. Biodegradable paper yard waste bags incidental to residential/commercial lawn care are included too.

2. It is estimated that 1,112 tons on average are being brought to the site per month. For FY 2013-2014, the facility's incoming volume was 15,487.05 ton of yard waste materials. Those materials were ground by the contractor and hauled off of the premises. No composting has taken place.

3-10. No changes from initial approved design.

11-13. These items are not applicable to this facility.

Operation Plans:

The following Operations Plans for composting (Section 4) and for wood waste processing (Section 5) address applicable requirements listed in the guidance.

Section 4 – Operations Plan for Composting
(15 NCAC 13B.1406)

4.1 General Facility Operations

4.1.1 Composting Overview

Composting is the controlled aerobic decomposition of organic materials by microorganisms into a stable, mature soil-like end product (compost). The City of Durham compost facility uses the turned windrow method of composting, wherein organic materials are mixed and formed into triangular-shaped windrows and turned periodically to re-aerate the windrow, release heat and moisture, and to maintain porosity.

4.1.2 Contact and Facility Information

Any questions or correspondence regarding the Durham facility should be directed to:

Donald Long
Director, Department of Solid Waste Management City of Durham
1833 Camden Avenue Durham, NC 27704
Tel: (919) 560-4186
Fax: (919) 560-1228
Email: Donald.Long@durhamnc.gov

The compost facility is open Mondays through Fridays from 7:30AM until 4:00 PM. On Saturdays, the facility is open from 7:30AM to 12 Noon.

4.1.3 Access Control

Access to the Durham compost facility is limited to normal operating hours (see above). Outside of normal operating hours, the entire Waste Disposal Center is closed, with locked gates and video camera security at several points. The entire facility is fenced off to prevent unauthorized access.

4.1.4 Signage

Several signs containing the information required by NC DEQ-DWM have been placed near the public entrance to the City's Waste Disposal Center, indicating hours of operation, permit numbers and acceptable and non-acceptable wastes.

4.1.5 Fire Management

Fires can start in composting facilities through three primary mechanisms: spontaneous combustion in compost piles that have excessively low moisture content, carelessly discarded cigarettes/cigars, and fires caused by internal combustion engine malfunctions. Fire potential will

be reduced at the Durham Compost facility by careful attention to moisture content in the windrows, sizes of storage piles (less than 12 feet high by 25 feet wide and 200 feet long), enforcing a "no-smoking" rule at the facility, and preventive maintenance procedures on equipment. Fire extinguishers at the compost facility will be used in the event of equipment-related fires. In the event of fire, the local fire department will be called. Also, the City has installed two City fire hydrants to aid the Fire Department with quick access to a water source if needed.

4.1.6 Health & Safety

The facility will be operated to ensure the health and safety of City staff, contractor staff and the general public at all times. Open burning is prohibited at the site and any fire observed will be handled using the facility's fire management procedures. Fire extinguishers will be carried on all mobile equipment for use in the event of a fire involving a piece of equipment. All personnel at the compost facility will be trained in the safety procedures of the facility and of the City. The City of Durham has several health and safety policies currently in effect. These include:

S201 - Safety and Health Policy

S202 - Monthly Safety Inspections of City Facilities

S203 - Response to OSHA Complaints and Routine Inspections

S204 - First Aid Kits

S206 - On-the-job Accident Report S301 - General Safety Rules

S-204-1- Employee Drives License Policy

FLT-100 - Operation of City Vehicles and Motorized Equipment

HRM-714-1 -Alcohol and Drug Testing Requirements for COL Holders

All operations at the Durham Compost facility will be conducted in accordance with these policies.

4.1.7 Recordkeeping Program

The Durham compost facility will maintain the following records in its operational records:

- Daily records of incoming yard waste
- Quantities of unacceptable wastes received (in tons) and the ultimate disposition of those wastes
- Estimated composition of the windrow
- Dates of initial windrow formation
- Turning dates
- Approximate dates when the curing process began.
- Temperature monitoring records for regulatory compliance
- Compost quality analytical laboratory test results, and
- Disposition of product that did not meet regulatory standards.

An example of an operational log form is included in Table 3.

City of Durham YWCF
Operational Log

Date _____
Operator _____

Waste Management

Amount of new yard waste in (CY) _____
Amount of unacceptable waste (%) _____
What happened to unacceptable waste? _____

New Composting Windrows

Windrow No.: _____
Which part? _____ First third _____ 2nd third _____ Last third
Date Windrow Built _____
What was windrow made of? _____ % grass _____ % brush _____ % leaves
Amount of urea added (lbs) _____

Existing Windrows

Windrow #:	1	2	3	4	5	6	7
Turned? (Y/N)							
Temperatures:							
Location 1							
Location 2							
Location 3							
Water Added? (Y/N)							
Solvita Test Result							

Windrow #:	8	9	10	11	12	13
Turned? (Y/N)						
Temperatures:						
Location 1						
Location 2						
Location 3						
Water Added? (Y/N)						
Solvita Test Result						

Product Management

Quantity Screened (CY) _____
Amount of compost (CY) _____
Amount of overs (CY) _____

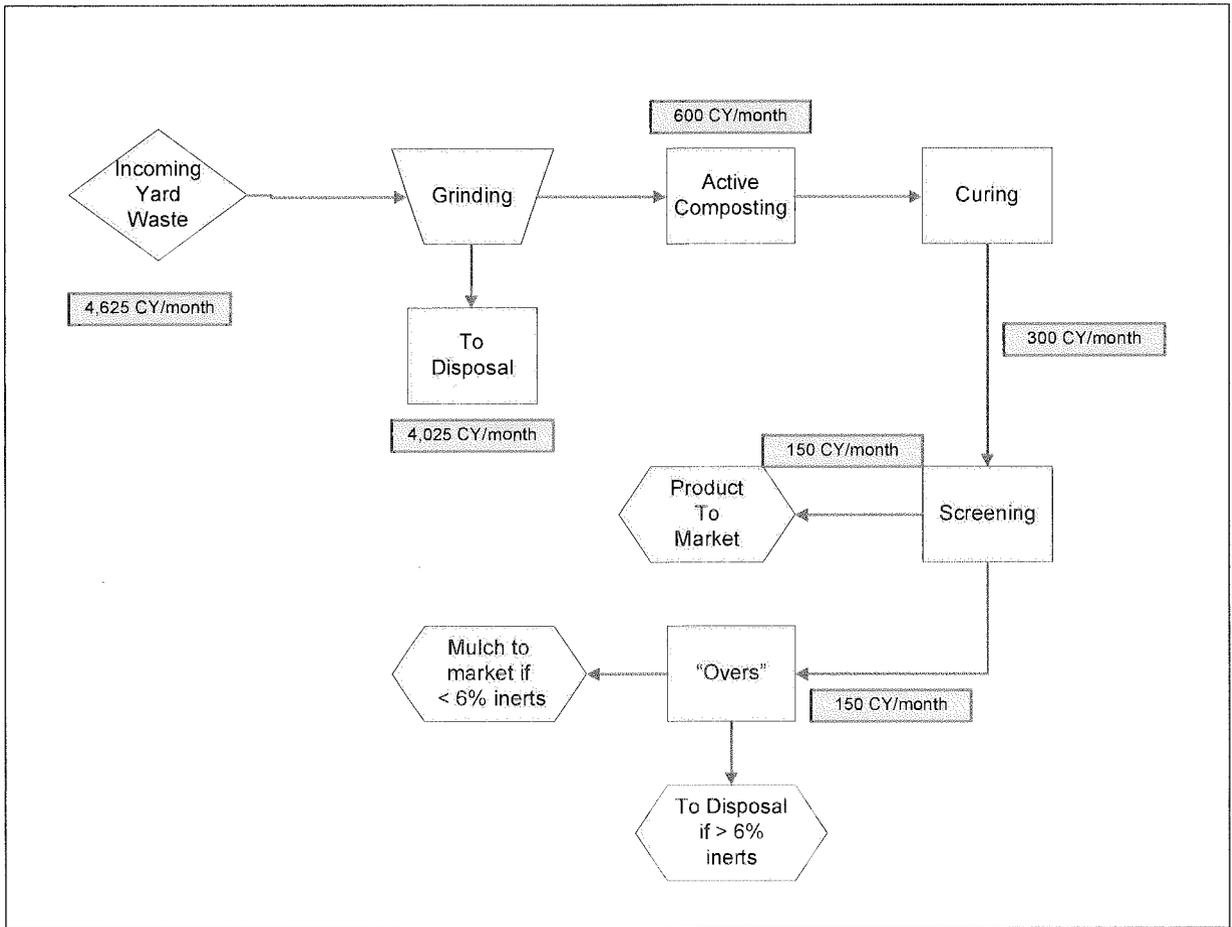
Table 3
Example Operational Log

An annual report for the period from July 1 to June 30 shall be submitted by the City to the DEQ Division of Waste Management by August 1 of each year. The report shall include:

1. The facility name, address and permit number;
2. The total quantity (in tons) and type of waste received at the facility during the year covered by the reports, including tons of waste received from local governments of origin;
3. The total quantity (in tons) and type of waste processed into compost during the year covered by the report;
4. The total quantity (in tons) and type of compost produced at the facility, by product classification, during the year covered by the report;
5. The total quantity (in tons) and type of compost removed for use or disposal from the facility, by product classification, along with a general description of the market during the year covered by the report; and
6. Temperature monitoring records to verify compliance with 15A NCAC 138.1406(10).

Monthly reports, which contain daily logbook entries, as well as a copy of the annual report, will be kept in the official operating record in the City's Solid Waste Management offices.

Process Flow Diagram



4.2.1 Waste Receipt

Incoming waste shall consist only of yard waste, which is leaves, grass clippings, stems, pruning materials, small brush and biodegradable paper yard waste bags generated in residential and commercial lawn and garden care in the City of Durham, and clean wood waste including pallets. The waste is to be received and weighed at the scale house, and checked for unacceptable wastes. Any unacceptable wastes shall be removed by the customer and disposed of in the designated disposal container at the Recycling Center. Uncontaminated yard waste shall then be unloaded by the compost facility customer at the Waste Receipt Area.

At the Compost facility, the site operator will conduct a second inspection of the incoming yard waste. Vehicles containing unacceptable waste will be rejected. Any extraneous unaccepted waste found while unloading or after the customer has left the site shall be placed into a dumpster at the composting facility.

Incoming yard waste will be stockpiled in the Waste Receipt Area on a daily basis. On a daily basis, facility operators will push the waste, using front end loaders, into windrows, each a maximum of approximately 12' high by 25' wide by 200' long, spaced approximately 25' apart to allow room for fire-fighting equipment. Approximately four (4) storage piles will fit in the designated area after allowing for fire lanes.

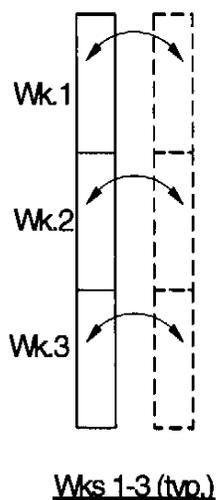
4.2.2 Feedstock Preparation

At least every week an outside contractor will come in to grind up the accumulated waste in the designated Grinding Area. Ground up material will then be formed into piles for temporary storage. Under average conditions, the contractor will have to grind about 213 cubic yards per day. The contractor will have to form two (2) temporary storage piles, each 25' wide x 12' high x 200' long. As these piles will only hold about 1.5 weeks of yard waste grinding quantities, that material which is not diverted to the Windrow Area #1 for composting will be moved off-Site for use as boiler fuel or transferred to out-of-state landfills.

The contractor will grind all the incoming materials together. In the Spring, with the higher percentage of grass clippings in the yard waste, the natural ratio of high-carbon brushy material to high-nitrogen grass clippings should be about 2:1. If the site operators observe higher amounts of grass clippings in a load; they will "pre-mix" those clippings with previously-ground brushy material to help maintain the acceptable C:N ratios. In other seasons, with lesser grass clippings, this step will not likely be needed. The compost recipes used by the City call for the use of small amounts of urea fertilizer to adjust C:N ratios.

4.2.3 Active Composting

Composting will be done with the turned windrow method, where the windrows will be built with front end loaders and where windrows will be turned with a front end loader (FEL). Windrows will be turned a minimum of one (1) time in a 3-day consecutive period once windrow temperatures have reached **131° F** (in accordance with the requirements of 15A NCAC 138.1406(10)). Windrows will be turned weekly after that. Aeration in the windrows will be provided by turning and the passive "chimney" effect of air movement in a windrow with adequate porosity (35-50% free air space). Total windrow residence time is planned to be about six (6) months for both composting and curing.



Due to the size of the designated Windrow Area #1, the facility will only be able to process about 30 CY/day of freshly ground yard waste (the remainder will be shipped off-site for out-of-state landfilling or sold as boiler fuel or feedstock to another composting facility). Windrow Area #1 will be set up for thirteen (13) windrows, each 7' high by 14' wide x 215' long. It will take about 3 weeks to completely build out a windrow so windrow turning will be done using the "open-space" turning method. In this method, a FEL is used to pick up the windrow and physically relocate it to an adjacent "windrow space", mixing the material as the new windrow is reformed.

At some point in the future, the City may elect to purchase a windrow straddle-type turner to turn windrows and to optimize processing capacity on the compost pad.

4.2.4 Curing

At some point in the future, the City may elect to purchase a windrow straddle-type turner to turn windrows and to optimize processing capacity on the compost pad.

Curing will be done "in-place", that is, the material will be left in the windrow after the active composting phase is complete. Windrows that have finished composting will be combined for curing to utilize the volumetric shrinkage that occurs during composting to free up additional pad area for active composting.

4.2.5 Screening

Screening will be done by the Contractor with a vibratory screen. Screening rejects ("overs") will be stored in maximum 10' high piles in the Product Storage Area and will be used for internal purposes by the City of Durham.

4.2.6 Product Storage

Following final curing and screening, finished compost product is stored in the Product Storage Area. This area is sized to hold six (6) months accumulation of product inventory. "Overs" will be stored in an adjacent storage area.

Both the Product Storage Area and the Screened Overs Storage Area will be about 20' wide by 120' long and consist of a maximum ten (10)-foot tall pile of material covering the storage area. There is no need to windrow this finished material. If the "overs" contain more than 6% inerts, the "overs" will be disposed of at the Transfer Station. The percentage of inerts in the "overs" will be determined by the methodology specified in 15A NCAC 13B.1408 (a)(5).

4.2.7 Process Monitoring Moisture

Moisture content of the yard waste compost will be monitored periodically three times a week with a "squeeze test". A handful of the fresh mix is squeezed into a ball in the hand; if water drips out it is too wet. If it crumbles apart after being squeezed, it is too dry. In the event of the material being too wet, the City will increase windrow turning frequency to enhance moisture evaporation. If the mix is too dry, the City will add moisture by either a water truck or by using potable water. The on-site storm water pond is not to be used for watering windrows.

Temperature

Temperatures are monitored in the composting windrows using a Reotemp™ 36" compost thermometer. Temperatures are monitored Mondays through Fridays (except for holidays) for at least the first seven to ten days after windrowing to ensure that temperatures meet regulatory requirements. Temperature data is recorded on the Operational Log (see Table 3). Any windrow not meeting the 15A NCAC 138.1406 (10) requirement of 55° C. (131 F) or greater for three consecutive days will be torn down and the contents remixed with freshly ground yard waste, thus restarting the composting process.

4.2.8 Staffing

The City will provide an attendant to oversee the facility and seek to retain a private contractor to handle most of the work in processing yard wastes and composting material.

4.3 Environmental Management

4.3.1 Surface Water Control

Surface water control is needed to ensure that rainfall-induced runoff that may be contaminated with waste materials at a composting facility does not cause water quality problems in nearby streams. Surface water control will be achieved with an extended detention or bio-retention pond. This pond will be inspected by Facility staff daily.

Inspection requirements will address the following at a minimum:

- Inspect plantings
- Settling, woody growth, animal burrowing, and signs of piping in the embankment
- Signs of seepage on the downstream face of the embankment
- Condition of wet detention basin floor, perimeter of the wet detention basin, and grass cover on the embankment
- Excessive erosion or sedimentation in or around the basin
- Riprap displacement or failure
- Principal and emergency spillway meet design plans for operation
- Outlet controls, inlet controls, debris racks, and mechanical and electrical equipment
- Inlet and outlet channel conditions
- Stability of slopes
- Safety features of the facility
- Access for maintenance equipment
- Signs of trespass or unauthorized traffic
- Sediment build-up

4.3.2 Odors

Odors (and air quality) will be managed in accordance with 15A NCAC 20, Air Pollution Control Requirements, to minimize fugitive emissions and odors. Odors and dust are the two main air quality issues associated with composting. Odors will be minimized by careful attention to incorporating grass clippings into windrows within 24 hours of receipt, ensuring good porosity in compost windrows, and keeping moisture levels at appropriate levels. In the case of unusual odor conditions, a 6" blanket of finished compost will be placed over the windrows for absorption of odors. This will be accomplished by using a hydrostatic mulch blower and hose to apply an even layer of compost over the piles.

The key to controlling odors in composting is effective process control and composting management. The City of Durham will be certified as Technically Competent in Composting by the North Carolina Composting Council and will use this training to ensure minimal odors are present at the facility. To minimize the potential for an offensive odor episode, the staff will make sure that windrows stay aerobic, that no putrescible solid waste is present in the windrows, and that windrows are turned on a regular schedule consistent with the Operating Plan.

Should an off-site nuisance, odor event occur, the City will provide an emergency phone number for local residents to call. A 6" blanket of finished compost will be distributed over the windrows for absorption of odors. This will be accomplished by using a hydrostatic mulch blower and hose to apply an even layout of compost over the piles. The staff will then review operational logs and/or daily reports to determine what caused the odor event to occur.

4.3.3 Vectors

Vectors (i.e. flies, mosquitoes, rodents, etc.) are a potential problem with mismanaged yard waste composting operations. Proper windrow management by regular turning will prevent rodents from nesting in windrows and by turning windrows, fly larvae and eggs are exposed to the higher interior temperatures of the windrows. Windrows should be turned weekly to break fly reproductive cycles. Mosquitoes and similar insects that breed in pools of standing water can be controlled by proper pad slope and drainage (at least 2%).

4.3.4 Dust

Dust will be controlled by avoiding screening activities in dry, windy conditions. A water truck is available for dust suppression in severely dry weather.

4.3.5 Severe Weather Conditions

Operations at the compost facility will be covered by the City of Durham Adverse Weather Plan, which calls for cessation of waste collection activities during severe weather events. The solid waste transfer station, however, tries to remain in operation during most weather events. The compost facility is open whenever the Transfer Station is open. The Durham Solid Waste Adverse Weather Plan is provided in Appendix D.

4.4 Equipment Maintenance

All City equipment used in Solid Waste Operations is routinely maintained for proper performance with a very thorough Preventive Maintenance Program.

4.5 Site Maintenance

Maintaining the Durham YWCF site in a good operational condition, is an important part of successful composting operations. Areas where site maintenance is important are: repairing eroded and rutted areas, maintaining site access roads, and in making sure the storm water pond operates properly.

Facility staff will conduct a "walk-around" inspection of the whole facility every morning. Problems will be noted in the operational log and repair work will be scheduled as soon as practicable. Eroded or rutted areas in the compost pad will be repaired with compacted fill dirt. Rutted area in the gravel access roads will be repaired with fresh gravel. For observed problems with the storm water pond, a qualified contractor will be called in.

Section 5 – Operations Plan for Wood Waste Processing (NEW)

5.1 General Facility Operations

5.1.1 Wood Waste Processing Overview

Wood waste is collected from residential customers in the City of Durham, from private haulers and from the County of Durham. Generally, the wood waste consists of limbs, grass, leaves, branches, and controlled amounts of tree trunks (smaller sizes). The City contracts with a vendor who grinds this material up and places them in windrows according to specifications outlined in permit to operate 3204-COMPOST-1991.

5.1.2 Contact Information and Hours of Operation

Contact information has been listed in section 1 and is the same throughout this application. The Wood Waste processing area is open for operation from 7:30am to 4:30pm Monday through Friday and Saturday from 7:30am to 12:00pm. The facility is closed on Sunday and all City observed holidays.

5.1.3 Access Control

Access to the Compost /Yard Waste facility is limited to normal operating hours (see above). Outside of the normal operating hours, the entire facility is closed, with locked gates and a video camera security system as specific points. The entire facility is fenced off to prevent unauthorized access.

5.1.4 Signage

Several signs containing the information required by NC DEQ SWS have been placed near the public entrance to the Waste Disposal Center main entrance indicating hours of operation, permit number, and acceptable and non-acceptable wastes.

5.1.5 Fire Management

Fire potential will be reduced at the City wood waste processing area by carefully attending to the moisture content and temperature of the windrows, sizes of storage piles, enforcing a “no-smoking” rule, and preventive maintenance. In addition, two active fire hydrants and two charged fire extinguishers remain ready for possible fire emergencies. Fire extinguishers will be

located on all equipment used in the area. In the event of fire, the local fire department will be called.

5.1.6 Safety and Health

The facility will be operated under established safety and health policies, rules, and regulations by all applicable jurisdictions. First aid kits are on site in the scale house and will be available for minor injuries or incidents.

5.1.7 Recordkeeping

Recording keeping will be conducted and kept by spreadsheets on the computer systems in the scale house. Typical records that will be kept are:

- Incoming wood waste tonnage
- Unacceptable waste received in tons and the disposition of the waste
- Temperature and moisture observations of the windrows Outbound designation of wood waste processing
- Any issues with the pond liner, fencing, security, or other noticeable events.

An annual report for the period from July 1 to June 30 shall be submitted by the City to the DEQ Division of Waste Management by August 1 of each year. The report shall include all information as requested on the form which will be available prior the reporting time. A listing here of the information to be given to DEQ is being reserved as the forms are changed from year to year. Monthly reports, which contain daily logbook entries, as well as a copy of the annual report, will be kept in the official operating record in the City's Solid Waste Management offices.

5.2 Wood Waste Processing Operation

5.2.1 Wood Waste Receipt and Preparation

The only feedstock that will enter the facility and be dumped for wood waste processing is materials consisting of limbs, grass, leaves, branches and small controlled amounts of tree trunks. Larger hydraulic vehicles will be allowed to drive to the site and dump the materials in the receiving areas noted as area #2 for bushy brush and area #3 for leaves, grass, and similar material. Area #1, will receive the hand unloading customer's wood waste material. The material from area #1 will then be transported by City staff to the appropriate area for proper processing.

At least twice a week, the contractor will come in and grind the accumulated waste in the designated receiving area and grinding area. Ground up material will then be formed into windrows. The contractor will have to windrows, each 25' wide X 12' high X 200 feet long.

The windrows are to be 25' apart to allow for firefighting equipment an access. Approximately four (4) windrows will fit in the designated area after allowing for fire lanes.

5.2.2 Process Monitoring

Moisture:

The moisture content of the ground wood waste material will be conducted with a “squeeze test.” A handful of the freshly ground material is squeezed into a ball in the hand; if water drips out of it, then it is too wet. If it crumbles apart after being squeezed, it is too dry. In the event of the material being too wet, the City and or contractor will increase windrow turning frequency to enhance moisture evaporation. If he mix is too dry the City and or contractor will add moisture by either water truck or by using potable water. The on-site pond is NOT to be used for watering windrows. This moister test will be done once a day at the same time either the 8am or the 3pm temperature reading is being conducted (see temperature below).

Temperature:

Temperatures are monitored in the windrows using a reliable 36” compost thermometer. Temperature will be monitored three days a weeks; twice a day at 8am and 3pm (or as close to the times as possible) using the thermometer. Temperatures are recorded on the spreadsheets kept in the scale house. (See attachment section) Windrows temperature must be in accordance with 15A NCAC 13B.1406 (10) requirement of 55 degrees Celsius (131+). Typically, these windrows do not stay in the facility for more that 3-5 days before the contractor removes them off site.

5.2.3 Staffing

The City will provide a full time equipment operator to oversee the wood waste processing site. This staff member in the absence of the contractor will “push” up wood waste in preparation for grinding. In cases where customers dump erroneous material in the area, the staff member will ensure that this waste is removed and placed in the non-wood waste material container. The weight of this non-wood waste material will be reported each month to the Waste Disposal Manager.

5.3 Environmental Management

5.3.1 Surface Water Control

Surface water control is needed to ensure that rainfall-induced runoff that may be contaminated with wood waste material from processing does not cause water quality problems in nearby streams.

Surface water control will achieved with a bio retention pond. The pond will be inspected by the City staff once a day, three times a week. The City staff will monitor the pond level to ensure that its maximum level should remain at or lower than **303.0 monitoring range**. The pond liner shall be maintained at the freeboard of the pond.

5.3.2 Pond Discharge

The City operates under a NPDES local discharge permit (NCG110092), issued and regulated by NC DEMLR, which allows the pond to drain into the City sewer system. It is a requirement of NC DEMLR to have the pond tested every three months. The details of the testing are contained within the discharge permit. The discharge system is a syphon/pump driven flow system with a flow meter attached as one of the requirements for the City Water Management department. Inspection requirements will address the following minimum:

- Pond level at 303.0 or lower
- Liner damage below the freeboard
- No smoking signage
- Fire Safety equipment/Fire hydrants
- Security fence around the property
- Ponds grab samples four (4) times a year. (chemical testing)

5.3.3 Odors

Wood waste processing does not produce the odors that have been experienced with actual Composting. Odors will be monitored, however windrows will not be sitting in the site for more than a five day period before being removed.

5.3.4 Severe Weather Conditions

Operation at the wood waste processing facility will be covered by the City of Durham Emergency Weather Plan, which calls for cessation of waste collection activities during severe weather events. However, the Solid Waste Transfer Station tries to remain in operation during most weather events.

5.4 Maintenance

5.4.1 Site Maintenance

Maintaining the City of Durham Yard Waste Compost/Wood Waste Processing site in a good operational condition is an important part of successful composition operations. Areas where site maintenance is important are: repairing eroded and rutted areas, maintaining site access roads, and in making sure the pond operates properly.

City staff will conduct a “walk-around” inspection of the whole facility every morning. Any issues noted will be recorded on the temperature/ moister log used by the City employee. Should the site access road and wood waste pads need repairs, the Contractor will complete the repairs as per in force contract. Major issues with the pond will be dealt with by qualified personnel.

5.4.2 Equipment and Equipment Maintenance

The City shall have a bull track dozier on site for pushing up newly dumped wood waste material. The equipment will be able to navigate through dry and wet conditions. It will be maintained by a City operator and if major repairs are needed, it will be repaired by the City's Fleet Management department. All City equipment is on a preventive maintenance schedule.

No other equipment belonging to the City will be utilized in the wood waste processing area. However, the contractor will have various necessary heavy equipment in the area to conduct the processing. For example, the contractor may have, on site at any given time to process wood waste; a grinder machine, a track loader, a rubber tire loader, an excavator, and a semi-tractor trailer for removing material. This equipment is used to grind and haul wood waste material.

It is a safety requirement that all heavy equipment vehicles used to process wood waste have an on board fire extinguisher or built in fire suppression system.

5.4.3 Land Scape

The City staff will be responsible for cutting grass, weed control, testing of the pond, and all related reporting.

ATTACHEMENTS

Temperature and Moisture Log-A

Pond Flow Log-B

Attachment A

Mulch Temperatures & Moisture Readings								
WINDROW 1	DAY 1		DAY 2		DAY 3		EXTRA	
8am		TEMP #1		TEMP #1		TEMP #1		TEMP #1
3pm		TEMP #2		TEMP #2		TEMP #2		TEMP #2
		MOISTURE		MOISTURE		MOISTURE		MOISTURE
WINDROW 2								
8am		TEMP #1		TEMP #1		TEMP #1		TEMP #1
3pm		TEMP #2		TEMP #2		TEMP #2		TEMP #2
		MOISTURE		MOISTURE		MOISTURE		MOISTURE
WINDROW 3								
8am		TEMP #1		TEMP #1		TEMP #1		TEMP #1
3pm		TEMP #2		TEMP #2		TEMP #2		TEMP #2
		MOISTURE		MOISTURE		MOISTURE		MOISTURE
WINDROW 4								
8am		TEMP #1		TEMP #1		TEMP #1		TEMP #1
3pm		TEMP #2		TEMP #2		TEMP #2		TEMP #2
		MOISTURE		MOISTURE		MOISTURE		MOISTURE
	Wood Waste				City Of Durham:			
	Checked by:				CALIBRATED ON :			
	Checked by:				CALIBRATED ON :			
	Checked by:							
Instructions: Use one of these forms per week to capture temps and moisture. Use squeeze method for moisture. Answer either B = balanced, W =too wet or D = too dry								



Site	Site Volume Table, Adjusted		Fill cy	Net cy	Method
	Stratum Surf1	Surf2			
durham_waste_site_LDD	durhamwaste	existing proposed	6394.27	17851.40	12257.21 (F) Grid

GENERAL NOTES—GRADING

CUT AND FILL SLOPES SHALL HAVE SIDE SLOPES NO STEEPER THAN 4:1 EXCEPT AS PROVIDED BELOW:

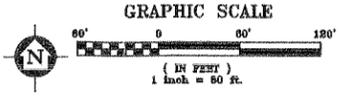
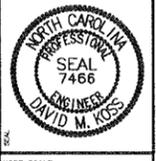
SLOPES BETWEEN 3:1 AND 4:1 MAY BE ALLOWED IF STABILIZED WITH VEGETATION THAT REQUIRES MINIMAL MAINTENANCE SUCH AS WEEPING LOVE GRASS, RED FESCUE OR OTHER VARIETY WITH SIMILAR CHARACTERISTICS. SUCH SLOPES SHALL NOT BE STABILIZED WITH TURF GRASS.

SLOPES THAT ARE STEEPER THAN 3:1 MAY BE ALLOWED IF STABILIZED WITH PERMANENT SLOPE RETENTION DEVICES OR A SUITABLE COMBINATION OF PLANTINGS AND RETENTION DEVICES. SLOPES BETWEEN 2:1 AND 2.5:1 SHALL REQUIRE STRUCTURAL REINFORCING SUCH AS GEOGRID AND ONE AND ONE-HALF (1.5) YEAR LIFE BIODEGRADABLE EROSION CONTROL MATTING. SLOPES BETWEEN 2.5:1 AND 3:1 SHALL REQUIRE ONE AND ONE HALF (1.5) YEAR BIODEGRADABLE EROSION CONTROL MATTING.

REV	DATE	DESCRIPTION
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		
K		
L		
M		
N		
O		
P		
Q		
R		
S		
T		
U		
V		
W		
X		
Y		
Z		

KCI Associates of North Carolina, PA
 Engineers • Planners • Scientists • Construction Managers
 4601 Six Forks Road, Landmark Center II, Suite 220
 Raleigh, NC 27609-5210
 Phone (919) 783-9214
 Fax (919) 783-9266
<http://www.kci.com>

DURHAM YARD WASTE CONSTRUCTION PLANS
 CITY OF DURHAM
 DURHAM COUNTY
 GRADING AND DRAINAGE PLAN



CITY OF DURHAM PUBLIC WORKS DEPARTMENT APPROVED	
ENGINEERING	DATE
STORM WATER	DATE
TRANSPORTATION	DATE
	DATE
	DATE

FINAL DESIGN-NOT FOR CONSTRUCTION

HORIZ SCALE:	
DRAWN BY:	ACL
CHECKED BY:	FR
DATE:	08-25-08
PROJECT NO:	12065870A
SHEET NO:	C-3
SHEET	OF

Name of facility: CITY OF DURHAM COMPOST FACILITY TYPE LARGE TYPE 1

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision and that the information provided in this application is true, accurate, and complete to the best of my knowledge.

I understand that North Carolina General Statute 130A-22 provides for administrative penalties of up to fifteen thousand dollars (\$15,000) per day per each violation of the Solid Waste Management Rules. I further understand that the Solid Waste Management Rules may be revised or amended in the future and that the facility siting and operations of this Solid Waste Management facility will be required to comply with all such revisions or amendments.


Signature

Donald Long
Printed Name

February 9, 2015
Date

Director, Solid Waste Management

City of Durham Solid Waste Management
Business or Organization Name