

0106Permit2000 - Box No. _____

Alamance County

01-06
2000

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EcoLogic Associates, P.C.
218-4 Swing Rd. • Greensboro, NC 27409
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www.ecologic-nc.com

August 24, 2000

RECEIVED
N.C. Dept. of EHNR
AUG 28 2000
Winston-Salem
Regional Office

Mr. Timothy A. Jewett
NC Dept. of Environment and Natural Resources
Solid Waste Section
585 Waughtown Street
Winston-Salem, North Carolina 27107

**RE: Endangered & Threatened Species Habitat and Wetlands
Carolina Resource Recovery, Mebane, North Carolina**

Dear Tim:

On behalf of Steven S. Scott of Mebane, NC, EcoLogic contracted a biologist to survey the Carolina Resource Recovery site for rare species habitat. A letter from Ken Bridle, PhD of Heritage Lands Associates is enclosed which summarizes the findings.

Dr. Bridle concludes that no rare species occur on the site. Furthermore, he is of the opinion that the "probable jurisdictional wetlands" previously identified on the site are not wetlands, with the exception of one Upland Depression Swamp Forest in the southwest corner.

This should resolve and complete the site's environmental characterization. We will continue to evaluate the presence of groundwater in the proposed landfill area in order to establish the landfill base grade.

If there are any questions regarding this letter or the enclosure, please contact the undersigned at (336) 855-8108.

Respectfully,

EcoLogic Associates, P.C.

A handwritten signature in black ink, appearing to read "Mark A. Taylor", with a horizontal line extending to the right.

Mark A. Taylor, PE, CPESC
Project Manager

C: Steven S. Scott (with enclosure)

Enclosure



Heritage Lands Associates
Landscape Resource Consultants

Mark Taylor
EcoLogic Associates, P.C.
218-4 Swing Rd
Greensboro, NC 27409

August 18, 2000

Dear Mark

I have completed a biological inventory of the Carolina Resource Recovery site in Mebane, NC. I visited the site Friday August 18, from 11am until about 2:30pm.

This 60-acre parcel in Alamance County had been the site of a clay/soil mining operation. The majority of the site shows signs of earth moving, grading and dumping. The current use includes some soil removal that has left areas of bare mineral soil or covered with a sparse herb mixture. There are only a few wooded areas with occasional mature trees indicating these sites were not disturbed during the mining period. These sites occur at the western edge of the property and along the southern boarder, contiguous with forests on adjoining properties.

The main focus of my visit was to check for the presence of listed plant and animal species known or suspected to occur in Alamance or nearby Orange Counties as listed in the NC Natural Heritage Program database. Several rare plant and animal species are listed as current or historic for this region.

This listing includes several mussel species, none of which could be supported by the small and intermittent creeks on the site. The water quality did not look very good in the one flowing creek, possibly as a result of the past disturbance of the site. There is evidence of high sediment and clay loads during periods of high flow, which would be adverse to most mussel populations.

Two vertebrate animals were also listed the Loggerhead Shrike and Four-toed Salamander. The Shrike is a conspicuous bird that does not frequent forested habitats in general and was not seen during my visit. It has not been noted in this area of the Piedmont for many years. The Four-toed Salamander requires shallow water ponds or seeps that support moss covered logs or grass clumps that remain wet all season. A habitat of this type was not identified on the site. The only wetland noted was in the southwest corner of the property, outside the project boundary. It is a small example of a Upland Depression Swamp Forest. This site was dry at the time of my visit. While this site might support the spring breeding of amphibians it is not a year round home to

species like the Four-toed Salamander. The surrounding forest is a dry mixture of oak and hickory, no amphibians were noted in this area with the exception of frogs in the small creek that runs north into the adjoining property, and in some pools and ditches which held water scattered around the property.

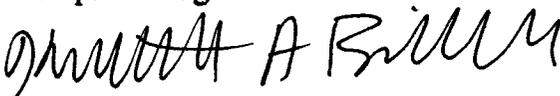
The potential rare plant species for the area includes Buttercup Phacelia, Narrow-leaved Aster, American Barberry, Piedmont Horsebalm from the Alamance County list and Prairie Blue Wild Indigo, Smooth Coneflower, Small Whorled Pogonia, Sweet Pinesap and Michaux's Sumac from the Orange County list. The survey included the potential of habitat for all these species as well as searches for the plants themselves.

None of these plant species could be found in the wooded, riparian or wetland habitats located within the site and the project boundary. None of the wooded areas were open enough, rich or mature enough for those species that require these conditions. There are no wetlands of a type that would support the listed wetland species. There are no open areas that had conditions suitable for those that require those habitat types. Major mining activity seems to have stopped just 10-15 years ago and much of the site is now covered thickly with early successional species like Virginia pines, red maples and tulip trees. Other open parts of the site like the old road had been seeded with lespedeza, which forms a thick covering in most places where non-mineral soils occur in open areas.

In addition to looking for these rare species I visited all the sites on the map you provided that were marked "probable jurisdictional wetlands". The most likely wetland is the one previously mentioned in the southwest corner of the property. The others marked along the intermittent creek are not as obvious and I did not find evidence that would lead me to call these wetlands. There are several places where water might collect along the course of the intermittent stream floodplain, but I am not sure these should be labeled wetlands. I did not notice a distinct change in vegetation to facultative and obligate wetland species as I did in the wetland in the upland area noted above.

It is my observation that none of the listed species in the NC NHP database occurs on this site and especially within the project boundary. Also, the project boundaries as mapped, including the stream buffers should be sufficient to protect the watershed and the wetland features of the site.

Regards,
Kenneth A. Bridle, Ph.D.
Principal Biologist



Heritage Lands Associates
1160 Ralph Tuttle Road, Walnut Cove, NC 27052
Phone & Fax 36-591-5882 e-mail bridle@netunlimited.net

336-210-8132

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APPLICATION FOR PERMIT TO CONSTRUCT AND OPERATE

CAROLINA RESOURCE RECOVERY (An organic and inert waste management facility)

Mebane, NC



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APPROVED
 DIVISION OF SOLID WASTE MANAGEMENT
 DATE 8/7/2000 BY TL
 Compost Permit 01-06

Appendix

FACILITY PURPOSE AND OVERVIEW

Name of Facility: Carolina Resource Recovery
Address: 3291 (Est.) Jones Drive
Mebane, NC 27302
Responsible Person: Steven S. Scott, Owner and General Manager
Phone Number: (919) 563-3469

The Carolina Resource Recovery facility ("the facility") will include land clearing and inert debris (LCID) treatment and processing and disposal (landfill) operations along with a large Type I composting facility. The overall purpose and operational goal of the facility is to complement the integrated landscape products production and distribution operations of Scott Sand & Stone, Inc., a landscape materials supplier owned by the proposed facility's owner and located on adjacent property.

The desired product of the composting facility is high quality compost for on-site blending with inorganic soil and for bulk sale to landscapers and contractors for direct application to soils in need of organic amendment. Mulch will also be produced as dictated by market demand. Demand for these products is normally strong from about March 15 through November 15.

These goals will be accomplished by the removal, processing, decomposition, refining and use/sale of the organic portion of the land-clearing and inert debris waste stream, commonly referred to as "wood and yard wastes". It is the intent of the facility to accept land-clearing and inert debris, yard waste, uncontaminated pallets and other acceptable wood from residential and commercial generators for recycling. Uncontaminated soil will also be accepted from grading contractors for on-site blending, sale and distribution. Inert debris and residual waste from treatment and processing will be landfilled on site in a former clay pit.

The facility will encourage recycling and discourage landfilling and/or improper disposal of organic materials. An additional environmental benefit of the facility is reclamation of a former clay pit on the site that was used as a source of raw material for brick manufacture.

COMPLIANCE WITH SITING REQUIREMENTS (15A NCAC 13B .0564 AND .1404)

Floodplains No flood zones (100-year or otherwise) are documented on or near the site. The nearest documented flood zone is along Tributary A to Haw Creek about one-half mile north of the site (see FEMA map in Appendix).

Endangered Species No federally protected endangered or threatened species are documented on or within 1 mile of the site. Refer to the attached letter from the NC Division of Parks and Recreation, Natural Heritage Program dated August 12, 1999 included in the Appendix.

Archaeological/Historical Sites No properties of architectural, historic, or archaeological significance are documented by the state within close proximity that would be affected by the project. Refer to the attached letter from the NC Division of Archives and History dated August 18, 1999 included in the Appendix.

Parks, Recreation, Scenic Areas No parks or similar facilities are documented within 1 mile of the site. Refer to the attached letter from the NC Division of Parks and Recreation, Natural Heritage Program dated August 12, 1999 included in the Appendix.

Wetlands Based on a site reconnaissance by an environmental scientist, no significant areas of jurisdictional wetlands exist on the site; however, a few small areas of probable jurisdictional wetlands were noted and are highlighted on the attached drawings. Refer to the attached letter from Spangler Environmental, Inc. dated October 4, 1999 included in the

Appendix. The proposed site development has been designed to avoid these probable wetland areas (see Design Plan); however, further delineation of the wetland perimeters will be made and U.S. Army Corps of Engineers concurrence will be obtained prior to disturbing land in proximity to those areas.

Adequate Soil

Proposed grading at the site will result in a net soil surplus of about 12,500 cubic yards, more than enough to meet landfill operational cover needs (see Design Report below and Figure 4 in Appendix). Some additional on-site excavation or importation of landfill final cover soil may be needed if the landfill is developed to its maximum areal extent.

Groundwater and Rock A subsurface exploration was performed to address the various criteria for vertical separation between waste treatment, processing and disposal and seasonal high groundwater and rock. The initial exploration was performed in October, 1999 following several weeks of near-record rainfall. In no case was the groundwater table observed within 12 inches of the ground surface in areas other than the landfill. Additional test pits were excavated in the southwest quadrant of the landfill area in May, 2000 and checked over a period of weeks for groundwater occurrence and fluctuation. Some apparent occurrences of groundwater within 4 feet of the ground surface were observed in the landfill area; however, the results were erratic and the site topography is too uneven to design a base grade from the resultant measurements. Additional investigation is needed in the landfill area. Outcroppings and/or areas of exposed weathered rock are evident in some previously excavated areas of the site, but a subsurface exploration revealed that these materials can be excavated with conventional equipment and thus are not rock. No further excavation is planned in those areas. Refer to the attached tables titled "Test Boring/Pit Log" and "Groundwater Observations" included in the Appendix.

Buffers

Adequate area exists on site to provide the required buffers from disposal and processing activities, and the proposed site development plan provides for those buffers (see Design Plan). Required buffers vary from 50 feet to 200 feet depending on the proposed use and the affected feature, but generally fall in the range of 50 to 100 feet for streams and property lines.

Zoning

This is not an issue since Alamance County has no zoning ordinance. Refer to the attached letter from Tom King, Assistant Planning Director, Alamance County Planning Department dated November 1, 1999 included in the Appendix.

Watersheds

The site is not in a watershed according to maps on file at the Alamance County Planning Department. The County also confirmed this. Refer to the attached letter from Tom King, Assistant Planning Director, Alamance County Planning Department dated November 1, 1999 included in the Appendix.

Stormwater

Stormwater permitting is pending through NCDENR's Division of Water Quality. NPDES General Permit No. NCG120063 has been assigned and the application is currently under review by the Winston-Salem Regional Office. A copy of the Notice of Intent (application) is included in the Appendix. Notification of permit issuance will be forwarded to the Solid Waste Section upon receipt. Stormwater leaving the site in existing intermittent streams discharges into a tributary to Haw Creek (WS-V NSW classification).

Erosion and Sediment Control An erosion and sediment control plan for the facility has been approved by the Land Quality Section of the NC Division of Land Resources. A copy has been provided to the Solid Waste Section.

Winston-Salem regional office. A copy of the approval letter is included in the Appendix.

DESIGN REPORT

LCID Treatment and Processing Facility

The LCID treatment and processing (T&P) facility will be located in the southern portion of the site and will occupy about 2.8 acres (see Design Plan and Figure 1). The existing grade will be utilized as the base grade, for the most part, though excavation in the southern section is planned to provide soil borrow and provide a regular surface for site operations. The design base grade calls for a 2 percent minimum base slope and a 3(H):1(V) or 33 percent perimeter cut slope. Stormwater will be directed to perimeter channels that are designed to direct it to a temporary sediment trap. The design layout allows for 20-foot fire lanes around and between the stockpiles (see Figure 1).

Though inflow of waste materials to the facility cannot be accurately predicted due to the commercial nature of the operation and the cyclical nature of land development, knowledge of ongoing practices and waste generators in the local market suggests that a design inflow for organic wastes of 600 cubic yards per week (the equivalent of 50 tandem axle dump trucks) is reasonable. Land clearing normally experiences seasonal peaks from about March 15 through June 30 and again from about September 1 through November 15. Somewhat less activity occurs during July and August, and very little activity occurs during the winter (November 15 through March 15).

An area about 100 feet square is provided in the west end of the T&P area for organic waste grinding, screening and blending operations. The remainder of the area will be used to segregate incoming wastes prior to processing and to stockpile organic wastes prior to grinding. Stockpiles averaging 14 feet high by 30 feet wide at the base are envisioned. The T&P area provides enough room to store approximately 5,600 cubic yards of stockpiled materials at capacity. At the design inflow of 600 cubic yards per week, over 9 weeks of

storage of unprocessed organic waste is available in the T&P area. Overflow storage of incoming wastes, as needed, will occur in the LCID landfill area. Refer to Figure 1.

LCID Landfill

The LCID landfill will be located in the central portion of the site and will occupy about 7.7 acres if fully developed (see Design Plan). The existing grade will be utilized as the base grade, for the most part, with some initial grading needed to remove remnants of former clay mining (mounds, ridges, depressions, etc.) and provide a regular surface for site operations. The design base grade calls for a 2 percent minimum base slope. No excavation below the prevailing base grade is planned, but some local topographic highs will be lowered and filling will occur as needed to raise the base grade above the regulatory limit relative to groundwater. A proposed base grading plan must be deferred until the groundwater investigation is completed and better site topographic information is obtained.

The landfill will be constructed in increments, with no more than one (1) acre of active fill area open at one time. Exterior fill slopes are designed to be constructed at a 4(H):1(V) or 25 percent slope. The final grades shown on the Design Plan provide a total airspace volume (waste disposal plus cover soil volume) of about 290,000 cubic yards. Assuming that operational cover soil will consume 2 percent of the post-settlement volume, the amount of operational cover needed is about 5,800 cubic yards. Final cover volume would be about 13,700 cubic yards if the landfill area were fully developed.

Assuming that 20 percent of the waste entering the facility will end up in the landfill, the initial disposal rate is estimated at 120 cubic yards per week (the equivalent of 10 tandem axle dump trucks). Assuming a 25 percent volume reduction due to compaction and a 10 percent annual increase in disposal rate, the estimated life of the landfill as currently configured is about 21 years. A proposed phasing plan must be deferred until the groundwater investigation is completed and better site topographic information is obtained because the base grading plan and landfill footprint may require some adjustment. The proposed post-closure uses envisioned at this time are open, dormant meadowland or passive recreation.

Stormwater will be directed to perimeter channels or permanent diversions that are designed to direct it to temporary sediment traps. Periodically, inactive areas that have received soil cover will be seeded with native grasses and/or legumes to stabilize soils against erosion.

Composting Facility

The Type 1 composting facility will be located in the western portion of the site and will occupy about 4.8 acres (see Design Plan (Dwg. 4) and Figure 2). A process flow diagram of the facility is provided as Figure 3.

Access to the composting facility will be provided via an all-weather road through the interior of Carolina Resource Recovery which has a secure, gated entrance at Jones Drive. The existing grade will be utilized as the base grade, for the most part, though some excavation in the central section is planned to provide soil borrow and provide a regular surface for site operations. The design base grade calls for a 5 percent minimum base slope. Stormwater will be directed to permanent diversions that are designed to direct it to a temporary sediment trap. The design layout allows for 20-foot fire lanes around and between groupings of windrows (see Figure 2).

Buffers have been provided as follows: 50 feet from the property line (.1404(a)(2)), 1000 feet from the nearest residence (200 feet required by .1404(a)(3)), 1000 feet from the nearest well (100 feet required by .1404(a)(4)), 70 feet from the nearest stream (50 feet required by .1404(a)(5)), and 30 feet from the nearest diversion berm (25 feet required by .1404(a)(8)).

Input material sorting and preparation will occur in the greater facility's Treatment and Processing Area (see Design Plan (Dwg. 4) and Figure 1). Treatment and processing operations will consist of sorting and segregating incoming wastes by type, stockpiling organic waste until enough is on hand for cost-effective grinding by contract (estimated at 3,200 to 4,800 cubic yards), separating soil from stumps by use of a steel grid, grizzly, or similar device, grinding and screening organic wastes and soil, and blending partially or fully

composted organic waste with soil. The area will be constructed and maintained to allow good access and use in various weather conditions to facilitate the uninterrupted use of the facility.

The entire area shown in Figure 2 will be used for open windrow composting of processed organic wastes. The natural soils will form the pad for composting operations. Based on the site subsurface exploration performed in October, 1999, the site soils are typical Piedmont residual soils comprised of fine sandy clayey silt or silty clay. The USDA soil classification for these soil types would typically be loam or silt loam. The SCS Soil Survey of Alamance County indicates that the predominant soil types in the area are Georgeville silt loam, Herndon silt loam and Orange silt loam.

The windrows shall be constructed with varied feedstocks (variable C:N ratios) in combinations designed to assure a high quality, marketable compost product. Temperature and percent moisture will be monitored and turning will be employed as needed to maintain aerobic conditions and suitable elevated temperatures to expedite composting (thermophilic decomposition), reduce odors, and reduce pathogens. This stage should take about 2 to 4 weeks. Stabilization will be performed in the original windrows if required. The stabilization stage should take up to an additional 4 weeks. Aeration and turning will be accomplished with a front-end loader.

The temperature in the windrows will be monitored and recorded at least 3 times per week, 48 hours apart to confirm the achievement and duration of elevated temperature (at least 55 degrees C (131 degrees F) for 72 hours). Temperature will be measured manually by inserting a long-stem thermometer 18 to 36 inches into the piles at various locations no more than 50 feet apart. Percent moisture and pH in the windrows will be monitored at least bi-weekly to assess the need for moisture and/or lime addition. Moisture and pH monitoring will utilize oven-drying (moisture content on percent total weight basis) and slurry testing (pH) of samples taken from the windrows no more than 200 feet apart. These tests will provide data to compare with the target limits (45 to 60 percent moisture and $6 < \text{pH} < 8$).

The facility shall be operated utilizing procedures that will minimize odor, dust, noise and vectors. Grass clippings will likely present the biggest potential odor problem at the facility. Grass clippings and other green wastes begin decomposing quickly and may go "anaerobic", creating foul odor. Odors may also be released during mixing or turning of the windrows. Several steps will be taken to control odor problems, namely:

1. Grass will be processed and turned into windrows within 48 hours of arrival at the staging area;
2. Windrows will be aerated frequently;
3. Wind should be minimal or blowing away from neighbors when compost turning occurs (whenever feasible);
4. Large natural buffers will be maintained, including berms as needed, to help minimize odor effects on neighbors; and
5. When windrows are deemed to be in the anaerobic state, lime may be applied to return pH to near neutral.

Dust will be controlled by the application of water spray, both on the compost in the windrows and on the facility roads during hot, dry weather. The application of make-up water to the compost during turning, to modify (increase) the percent moisture, should alleviate most problems with dust in the active composting area. In the refining process, a water mist may be needed on the screen and/or conveyor to control dust from the finer fraction during agitation. Waste screening and windrow turning may be postponed during periods of high wind to reduce dusting.

Noise is not expected to be a problem given the nature of the proposed operation and the relative isolation of the site. Only a few pieces of conventional heavy equipment are proposed to operate at the facility, with the exception of a tub grinder that will operate in the adjacent treatment and processing area 2 or 3 days every 6 to 10 weeks. The facility is situated on the south side of the 59-acre site, opposite the low-density residential development to the north. The land to the south of the site (125 acres) is owned and occupied by Scott Sand & Stone, Inc., a landscape materials supplier owned by the proposed

facility's owner, thus, noise will not be a concern there. Land to the east and west is mostly wooded and/or cultivated, i.e., undeveloped.

Regarding vectors, the facility staff shall maintain proper drainage and minimize standing water to reduce the potential for mosquito breeding. The wastes being processed and handled are not likely to attract vectors since they are not putrescible.

The waste types accepted and processed at the facility are not especially moisture sensitive and will not generate leachate, so inclement weather presents no particular challenges beyond road maintenance to maintain access and moisture and temperature control in the compost windrows (see Sections II.C.3 and 4). Windrow construction and turning may be postponed during periods of wet and/or very cold weather to avoid disruptions to the composting process. Similarly, waste screening and windrow construction and turning may be postponed during periods of high wind to reduce dusting and maintain site orderliness.

The operating plan for the on-site T&P facility supplying the composting operation calls for grinding and screening stockpiled wastes when approximately 8 weeks of input, or 4,800 cubic yards, has accumulated. The grinding should reduce volume by a factor of 6 or 7, so the design input to the composting facility is 800 cubic yards every 8 weeks. Assuming a 50 percent volume reduction after 8 weeks of high rate decomposition and stabilization, and combining windrows at that time to restore their original size, the cumulative storage required with steady output of 50 cubic yards per week is 1,200 cubic yards. Using the same assumptions, if sales of finished compost were to stop for 4 months during the winter (11/15 through 3/15), the required storage capacity would be 2,200 cubic yards.

The design calls for windrows averaging 8 to 10 feet wide by 5 to 7 feet high at the center and triangular or trapezoidal in cross-section. They will be spaced at 25 feet on center to provide a 15-foot corridor between windrows for placement and turning operations. The composting area provides enough room to store approximately 7,000 cubic yards of materials at capacity. Thus, considerable excess storage capacity is provided by the design to accommodate seasonal and economy-based reductions in product demand and/or input that

exceeds the projected amount. In the event of changed market conditions resulting in declining demand for the product, on-site storage can be maximized, limits on operating hours and/or intake quantity can be imposed, and/or incoming organic waste can be landfilled in the facility's on-site LCID landfill for permanent disposal or future recovery and composting.

Site personnel will consist of the following:

Composting Supervisor: Supervises site operations and site personnel under the direction of the General Manager.

Gate Attendant: Controls access, records transactions and directs vehicles.

Equipment Operators: Operate equipment associated with composting operations.

Technicians: Perform labor and monitoring tasks at the site.

Design plans (Drawings 1 through 5) accompany this report and illustrate the overall facility layout of Carolina Resource Recovery. Approved erosion and sediment control plan drawings (Drawings 6 and 7) also accompany this report.

OPERATING PLAN

CAROLINA RESOURCE RECOVERY LCID TREATMENT & PROCESSING FACILITY

Mebane, NC

Steven S. Scott, Owner	919-563-3469	Office
Emergency Contact (24 Hours)	TBA	
Swepsonville Fire Dept.	336-578-1500	Fire Station
FIRE/RESCUE EMERGENCIES	911	Fire/EMS

Operating Hours: Mon. – Fri.: 7:00 am – 6:00 pm Sat.: 7:00 am – 12:00 pm

1. The facility will accept only the following solid wastes:

Land clearing waste, asphalt, brick, concrete, concrete block, uncontaminated soil, gravel and rock, untreated and unpainted wood, uncontaminated pallets, and yard trash.

2. A design inflow for organic wastes of 600 cubic yards per week (the equivalent of 50 tandem axle dump trucks) is projected. No estimate of inert debris input is available, but that is a secondary purpose of the facility and no processing of inert debris is planned beyond separating it from usable wood waste. Reusable materials such as brick or stone may be transported to neighboring Scott Sand & Stone, Inc. if a market for such materials exists.
3. Treatment and processing operations will consist of sorting and segregating incoming wastes by type, stockpiling organic waste until enough is on hand for cost-effective grinding by contract (estimated at 3,200 to 4,800 cubic yards), separating soil from stumps by use of a steel grid, grizzly, or similar device, grinding and screening organic wastes and soil, and blending partially or fully composted organic waste with soil.
4. The processed organic waste will be transported to the adjacent, on-site composting facility for recycling into high quality compost for blending with soil and sale to landscaping contractors and others. Grinding should reduce the organic waste volume by a factor of 6 or 7, so the design input to the composting facility is 800 cubic yards every 8 weeks.

CRR LCID Treatment & Processing Operating Plan

5. An area about 100 feet square in the west end of the T&P area is designated for organic waste screening and blending operations. The remainder of the area will be used to segregate incoming wastes prior to processing and to stockpile organic wastes prior to grinding. Stockpiles averaging 14 feet high by 30 feet wide at the base are needed for efficient grinding operations. The T&P area provides enough room to store approximately 5,600 cubic yards of stockpiled materials at capacity. At the design inflow of 600 cubic yards per week, over 9 weeks of storage of unprocessed organic waste is available. Overflow storage of incoming wastes, as needed, will occur in the on-site LCID landfill area.
6. All non-recyclable material and unusable inert debris will be landfilled in the on-site LCID landfill.
7. The following equipment is planned for use at the facility. Additional equipment and vehicles are available at Scott Sand & Stone (contiguous site) for use at the facility as needed.

1980 Fiat Allis 345-B Loader

Ford 555-B Loader

1988 Dresser 520B Wheel Loader

1997 John Deere 5300 Tractor with 540 Loader

1999 Extec Screener with vibrating grid and stacking conveyor

8. The facility will be adequately secured by a gate to prevent access except when an attendant is on duty, and to prevent unauthorized access at all times. An attendant will be on duty at all times while the facility is open for public use to prevent acceptance of unauthorized wastes.
9. Access roads will be of all-weather construction and properly maintained.
10. Surface water will be diverted from the working area. Adequate erosion control measures, structures, or devices will be utilized to prevent silt from leaving the site and to prevent excessive on site erosion. All runoff from disturbed areas will be directed to sediment traps.
11. A sign will be posted at the facility entrance showing the contact name and telephone number in case of an emergency, the operating hours, acceptable wastes and the permit number.
12. Monthly safety meetings will be held for all on-site employees. Instruction will be given on accident prevention, procedures for emergencies and on managing small fires.

13. Fire, ambulance and police telephone numbers will be posted in a place that is readily accessible. The facility personnel shall be trained in basic on-site fire response procedures and shall have access to heavy equipment, water and extinguishers to aid in the early suppression of fire. Fire suppression may include isolating and spreading burning material, application of water or chemical suppressant, and/or covering with soil.

OPERATING PLAN

CAROLINA RESOURCE RECOVERY LCID LANDFILL

Mebane, NC

Steven S. Scott, Owner	919-563-3469	Office
Emergency Contact (24 Hours)	TBA	
Swepsonville Fire Dept.	336-578-1500	Fire Station
FIRE/RESCUE EMERGENCIES	911	Fire/EMS

Operating Hours: Mon. – Fri.: 7:00 am – 6:00 pm Sat.: 7:00 am – 12:00 pm

1. The landfill will accept only the following solid wastes:

Land clearing waste, asphalt, brick, concrete, concrete block, uncontaminated soil, gravel and rock, untreated and unpainted wood, uncontaminated pallets and yard trash.

2. Disposed solid waste will be restricted to the smallest area feasible and compacted as densely as practical.
3. Adequate soil cover (6 inches minimum) will be applied monthly, or when the active area reaches one (1) acre in size, whichever occurs first. Soil will be obtained from on-site borrow sources.
4. Within 120 calendar days after completion of any phase of disposal operations, the disposal area will be covered with a minimum of one foot of suitable soil cover sloped to allow surface water runoff in a controlled manner.
5. Sufficient ground cover will be provided to restrain erosion within 30 working days or 120 calendar days upon completion of any phase of landfill development.
6. The facility will be adequately secured by a gate to prevent access except when an attendant is on duty, and to prevent unauthorized access at all times. An attendant will be on duty at all times while the landfill is open for public use to prevent acceptance of unauthorized wastes.

CRR LCID Landfill Operating Plan

7. Access roads will be of all-weather construction and properly maintained.
8. Surface water will be diverted from the working face and will not be impounded over waste. Adequate erosion control measures, structures, or devices will be utilized to prevent silt from leaving the site and to prevent excessive on site erosion. All runoff from disturbed areas will be directed to sediment traps located around the perimeter of the landfill.
9. Solid waste will not be disposed of in water.
10. Open burning of solid waste is prohibited.
11. The concentration of explosive gases generated by the facility will be controlled so as to not exceed:
 - (a) twenty five percent (25%) of the lower explosive limit (LEL) for the gases in facility structures; and
 - (b) the lower explosive limit for the gases at the property boundary.
12. Leachate will be properly managed on site through the use of current best management practices, though no leachate of consequence is expected.
13. A sign will be posted at the facility entrance showing the contact name and telephone number in case of an emergency, the operating hours, acceptable wastes and the permit number.
14. When operations cease at this facility, the entire area will be graded and covered with a minimum of one foot of suitable soil, mulched, and seeded.
15. Monthly safety meetings will be held for all on-site employees. Instruction will be given on accident prevention, procedures for emergencies and on managing small fires.
16. Fire, ambulance and police telephone numbers will be posted in a place that is readily accessible. The facility personnel shall be trained in basic on-site fire response procedures and shall have access to heavy equipment, water and extinguishers to aid in the early suppression of fire. Fire suppression may include isolating and spreading burning material, application of water or chemical suppressant, and/or covering with soil.

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To: B.J. Stanfield

Permit Information Sheet

The following information on the proposed solid waste facility needs to be provided for our database. The facility name is the name that will be placed on the permit. That name may be the same as the owner or operator or it may be different. "Owner" name refers to the name of the person, company or government entity that owns the facility or the property where the facility is located. "Operator" refers to the individual, company or government entity that operates the facility. The "Contact" name is the individual who is responsible for the day to day operation of the facility. It is possible that all of the names could be the same, or they may all be different. There is no need to repeat addresses and phone numbers if they are the same.

Facility Name: Carolina Resource Recovery

Owner Name: Stevens Scott

Address: 3285 Jones Dr.
Street, City, State and Zip Code
Mebane NC 27302

Phone: (919) 563-3469

Operator Name: SAME

Address: _____
Street, City, State and Zip Code

Phone: _____

Contact Name: SAME

Address: _____
Street, City, State and Zip Code

Phone: (office) _____ (mobile) _____
(pager) _____

Post-It Fax Note	7671	Date	8-1-00	# of Pages	1
To	MARRA Taylor	From	B.J. STANFIELD		
Company	ECOLOGIC ASSOC'S.	Co.	DWM		
Phone	336-855-8108	Phone	919-733-0692		
FAX	336-855-7688	Fax	919-733-4810		



EcoLogic Associates, P.C.
218-4 Swing Rd. • Greensboro, NC 27409
(336) 855-8108 • Fax (336) 855-7688
www.ecologic-nc.com

LETTER OF TRANSMITTAL

↑
* NOTE NEW ADDRESS + NOS.

TO: Ted Lyon
DATE: July 17, 2000
SUBJECT: Carolina Resource Recovery, Mebane, NC

Dear Ted –

Please find enclosed one copy of the Application for Permit to Construct and Operate for Carolina Resource Recovery in Mebane, NC. This should give you the required number of copies. The stormwater permit will be copied to you as soon as it is received.

Please feel free to call if you have any questions or require additional information.

A set of seven (7) drawings is being mailed under separate cover.

Thank you in advance for your prompt issuance of the permit.

PLEASE CALL IF THE ENCLOSURES ARE NOT AS DESCRIBED ABOVE.

Sincerely,

Mark A. Taylor, PE
EcoLogic Associates, P.C.



θ **SOLID WASTE SECTION PERMIT APPLICANT COMPLIANCE REVIEW** θ

Instructions: Complete upper portion and submit this form to the Field Operations Branch Compliance Officer.

Review Requested by: Ted Lynn Date Requested: 7/13/2000
Type of Permit: Compost - Type I Check One: New Permit Renewal
Applicant Contact and Business Name: Carolina Resource Recovery - Steven Scott
Parent Company/Known Subsidiaries/Other known names business has operated under:
Scott Sand & Stone
Known Counties of Operation: Alamance
Does the applicant have a past or current solid waste permit? Yes No
If yes, write facility type: _____, and permit #: _____

To be completed by Compliance Officer and returned to Permitting or Composting & Land Application Branch staff.

1. The applicant's compliance history for the past three years was reviewed on 7-13-2000.
2. The applicant has an outstanding compliance order with administrative penalty.
Yes If yes, describe unresolved issue(s): _____
No
3. The applicant has been issued two or more compliance orders in the past three years.
Yes If yes, describe nature of the violation(s): _____
No
4. Permit denial based on the applicant's compliance history is recommended.
Yes Remarks: _____
No

7-13-2000 K Callahan
Date Compliance Officer



4

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

JAMES B. HUNT JR.
GOVERNOR

August 7, 2000

BILL HOLMAN
SECRETARY

Mr. Steven S. Scott
Carolina Resource Recovery
3285 Jones Drive
Mebane, North Carolina 27302

WILLIAM L. MEYER
DIRECTOR

RE: Carolina Resource Recovery – Compost Permit # 01-06
Jones Road (SR 2131) – Alamance County

Dear Mr. Scott:

Enclosed is the Carolina Resource Recovery's permit to operate a Large Type I Solid Waste Compost Facility. Please carefully review the permit conditions.

Mr. Hugh Jernigan, Waste Management Specialist with the Solid Waste Section, should be contacted prior to the start of construction. Mr. Jernigan can be reached at 336-571-4700. Mr. Jernigan and I will need to meet with you at the facility prior to operation to review the construction and the operation manual prior to beginning to receive waste.

If you have any questions in this matter please feel free to contact me at 919-733-0692, extension 253.

Sincerely,

Ted Lyon, Supervisor
Composting & Land Application Branch

cc: Hugh Jernigan, Winston-Salem Regional Office
Central Files, Solid Waste Section
Mark Taylor, PE, Ecologic Associates, PC
h:cia/compost/permits/01-alam/swc-01-06-2000cl



1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED/10% POST-CONSUMER PAPER

2

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
1646 MAIL SERVICE CENTER, RALEIGH N.C. 27699-1646

Carolina Resource Recovery

is hereby issued a permit modification for the operation of a

LARGE, TYPE 1 SOLID WASTE COMPOST FACILITY

at

**Jones Road(SR 2131) in Alamance County, NC
Permit Number 01-06**

in accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit.


Dexter R. Matthews 8-400
Chief, Solid Waste Section Date

Dexter R. Matthews
Chief, Solid Waste Section

Date

Permit Conditions

1. Operation and maintenance of this facility shall be in accordance with the Solid Waste Compost Rules (15A NCAC 13B, Section .1400), the permit application and the Operation and Maintenance Manual submitted with the permit application. Failure to comply may result in compliance actions or permit revocation.
2. This facility shall be operated in such a manner that erosion and runoff from the site shall be controlled. Any leachate generated at the facility shall be managed in accordance with the facility operations plan and shall not adversely affect ground or adjacent surface waters.
3. Only materials specifically listed in the permit application may be managed at this facility without adequate testing and prior approval of the Division of Waste Management.
4. **Waste shall not be received at this facility until construction has been completed and a pre-operation inspection has been conducted by representatives of the Solid Waste Section.**
5. Facility operation records shall be maintained in accordance with .1408(b).
6. An annual report of facility activities for the fiscal year July 1 to June 30 shall be submitted to the Division by August 1 of each year, in accordance with .1408(c) of the Solid Waste Compost Rules.
7. The compost operation and the compost pad shall be operated and maintained with sufficient dust control measures to minimize airborne emissions and to prevent dust from becoming a nuisance or safety hazard.
8. This permit allows for the operation of the composting and treatment and processing portions of the facility. The proposed LCID landfill shall not be operated until a properly completed application has been submitted to the Permitting Branch and this permit has been modified.
9. This permit shall expire on August 1, 2005. Changes in ownership, increase in facility capacity, or receiving additional feedstocks shall require a permit modification.

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
WINSTON-SALEM REGIONAL OFFICE

May 17, 2000



JAMES B. HUNT JR.
GOVERNOR

Mark Taylor
EcoLogic Associates, P.A.
2007 Yanceyville Street, Suite 223
Greensboro, North Carolina 27405-5004

Re: Proposed Carolina Resource Recovery facility in Alamance County

Dear Mr. Taylor,

The Division of Waste Management, Solid Waste Section, has reviewed the application you submitted for Carolina Resource Recovery to operate a compost facility, an LCID treatment and processing facility, and an LCID landfill. In order for us to complete our review, the following additional information has previously been requested by Ted Lyon, Supervisor of Composting and Land Application Branch:

1. The application needs to specifically address the setbacks in .1404(3), (4), (5), (7), and (8).
2. An approval letter from the appropriate government agency for the erosion and runoff control plan.
3. A letter from the North Carolina Division of Water Quality indication that the facility does not need a discharge permit needs to be included in the application.
4. The application must address .1404(c).
5. The site plan needs to include all permanent erosion and runoff control structures, the location of the grinder, and the location of the curing area.
6. Sections .1405(a)(7), (8), and (9) need to be thoroughly addressed in the application.

The operating plans for the facility appear to represent what is required in .0405(a)(10) for an operations and maintenance manual. This portion of the application must also include:

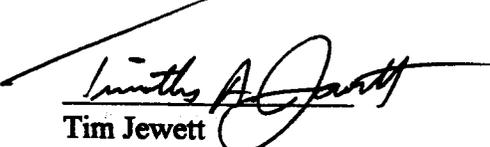
7. Information on the depth and spacing of temperature monitoring.
8. The method of determining moisture and the acceptable moisture levels for the windrows.

Mr. Taylor
May 17, 2000
Page 2

9. The O&M Manual should also include all the record keeping requirements listed in .1408(b) of the rules and an outline of the annual report.
10. Reporting of quantities is required to be in tons. If materials are going to be accepted on a volume basis, the method of converting from volume to tons needs to be included.
11. All concerns of the Fire Marshall shall be addressed.

Please address these comments at your earliest convenience and if you have any questions, contact me at (336)771-4608 ext. 204 or Ted Lyon at (919) 733-0692 ext. 253.

Sincerely,



Tim Jewett
Western Area Engineer
Solid Waste Section

cc: Jim Coffey
Ted Lyon
Steven S. Scott

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
WINSTON-SALEM REGIONAL OFFICE

May 8, 2000



JAMES B. HUNT JR.
GOVERNOR

Mark Taylor
EcoLogic Associates, P.A.
2007 Yanceyville Street, Suite 223
Greensboro, North Carolina 27405-5004

Re: Proposed Carolina Resource Recovery facility in Alamance County

Mr. Taylor,

The Solid Waste Section has finished the review of the Carolina Resource Recovery facility proposed in Alamance County. The following are comments on the LCID Landfill portion of the permit application:

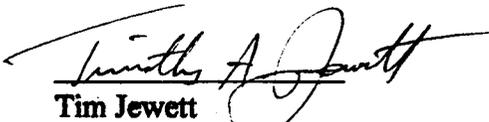
- 1) **Reference .0564(2) & (3) and Letter from the Natural Heritage Program dated 12 August 1999:** The Natural Heritage Program indicates that no inventory or survey exists for the proposed area. Please verify that no endangered or threatened species or habitat will be impacted by this proposed facility.
- 2) **Reference .0564(8)(a-c):** Please provide information about the facility with regard to requirements associated with the Clean Water Act, NPDES permits, and non-point source pollution of waters of the state.
- 3) **Reference .0564(8)(e) & .0565(1)(c):** No information on depth to groundwater is provided for the southwestern quadrant of the proposed LCID landfill. Also, please show groundwater table elevation on cross-sections for easier reference and comparison since the Design Plan (Dwg #4) details make it difficult to determine existing ground contours. Have any additional measurements been made to determine if a significant seasonal fluctuation exists (spring vs. fall vs. winter, etc.)?
- 4) **Reference .0565(3)(k) and Design Report:** Where will soil be obtained for operational and final cover? The Design Report indicates the estimated quantity needed, but no location or calculations of available on-site borrow are provided.
- 5) **Reference .0565(3)(g&l):** The wetland feature shown northeast of the landfill appears to be adjacent to the proposed footprint boundary. Will fine grading or construction of sedimentary and erosion control features adjacent to the footprint adversely impact this feature? Have all wetland features been clearly identified to prevent disturbance during future operations?

Mr. Taylor
May 8, 2000
Page 2

- 6) **Reference .0565(4)(c&d) and Design Plan:** Permits for LCID landfills can only be issued for periods of five years or less (.0563(4)). Please provide proposed five year phases for the landfill area, location of initial waste placement, direction of progression, estimated total life of the facility, and proposed used of the landfill after closure.
- 7) **Reference .0566(13) and Operations Plan (p.2):** How will concentrations be controlled?
- 8) **Reference .0566 and Fire Marshall letter:** The Fire Marshall indicates in the letter dated 18 February 2000 that a site visit and "pre-plan" will be required before starting operations. Additional modifications to the operations plan may be required based upon the requirements of the fire marshall.

Please address these comments at your earliest convenience and if you have any questions, contact me at (336)771-4608 ext. 204. Also, if you have not already received the comments for the composting and treatment and processing portions of the application prepared by Ted Lyon, please let me know and I will forward them to your office.

Sincerely,



Tim Jewett
Western Area Engineer
Solid Waste Section

cc: Jim Coffey
Steven S. Scott

Alamance County Property Information



Parcel ID	9812863650	Year Built	
Old Tax #	9-38-44A	Building SqFt	
Owner 1	SCOTT STEVEN S	Plat Book,Page	
Owner 2		Deed Book,Pg	1115 845
Billing Address	603 FIFTH ST	Sales Date	Mon, 06 Oct 1997 00:00:00 GMT
City,State Zip	MEBANE NC 27302	Sales Price	1500
Street Address	SR 2131	Elementary	Audrey W. Garrett Element
Acres	58.69	Middle	Hawfields Middle School
Market Land Value	116950	High	Eastern High School
Market Building Value	0	Farm District	
Market Total Value	116950		

[Print](#)

[Close Window](#)

THIS IS NOT A LEGAL DOCUMENT.

DISCLAIMER: ALAMANCE COUNTY shall assume no liability for any errors, omissions, or inaccuracies in the information provided regardless of how caused; or any decision made or action taken or not taken by user in reliance upon any information or data furnished hereunder. The user knowingly waives any and all claims for damages against any and all of the entities comprising the *Alamance County GIS System* that may arise from the mapping data.

CAROLINA RESOURCE RECOVERY
MEBANE, NORTH CAROLINA

***APPLICATION FOR PERMIT
TO CONSTRUCT AND OPERATE***

June 2000 (Revision 1)

Applicant: Steven S. Scott



EcoLogic Associates, P.C.
2007 Yanceyville St., Suite 223
Greensboro, NC 27405
(336) 271-3093
ecologic@compuserve.com



EcoLOGIC ASSOCIATES, P.C.
2007 Yanceyville Street, Ste. 223
Greensboro, NC 27405-5004
336-271-3093 • Fax 336-271-3094
ecologic@compuserve.com
www.ecologic-nc.com

June 15, 2000

RECEIVED
N.C. Dept. of EHNR
JUN 16 2000
Winston-Salem
Regional Office

Mr. Timothy A. Jewett
NC Dept. of Environment and Natural Resources
Solid Waste Section
585 Waughtown Street
Winston-Salem, North Carolina 27107

**RE: Revised Application for Permit to Construct and Operate
Carolina Resource Recovery, Mebane, North Carolina**

Dear Tim:

On behalf of Steven S. Scott of Mebane, NC, EcoLogic Associates, P.C. offers this revised application for a permit to construct and operate Carolina Resource Recovery, an organic and inert waste management facility. We received your letters outlining review comments dated May 8 and May 17, 2000 and have revised the application accordingly.

Inserts to the original ring binder(s) are enclosed along with instructions for making the necessary substitutions and additions. ³Four (4) copies have been provided to Ted Lyon for the purpose of issuing permits from the Raleigh central office. We understand that the landfill permit may need to be delayed until the groundwater issue is resolved.

We will use this letter to address three of your May 8 comments directly. Regarding Comment # 1, you will note that there are no federally listed endangered or threatened species documented for all of Alamance County. Therefore, it is our opinion that a site survey is not needed, the Natural Heritage Program's caveat notwithstanding. Such surveys are costly and of questionable value, and given the recent former use of this site as a clay mine, it is highly unlikely that sufficient recovery has occurred to establish suitable habitat for fragile plant and animal species. Furthermore, our proposed development plan avoids sensitive stream corridors and wetland areas and provides adequate stormwater discharge controls (NPDES general permit pending).

Regarding Comment # 7, decomposition byproduct (gas) concentrations, if any, will be controlled by passive venting through the porous wastes and native soil cover. No subsurface disposal is proposed, and the area soils are sufficiently permeable to facilitate gas movement out of the waste mass versus through the subsurface to remote points.

Revised Application for Permit – Carolina Resource Recovery

Regarding Comment # 8, the operating plans will be modified and resubmitted as needed following the Fire Marshall's site visit and pre-planning meeting.

Your expeditious review of the revised application would be greatly appreciated. If there are any questions regarding this letter or the enclosures, please contact the undersigned at (336) 271-3093.

Respectfully,



Mark A. Taylor, PE, CPESC
Project Manager

C: Steven S. Scott (with enclosures)
Ted Lyon, Supervisor of Composting and Land Application Branch (with enclosures plus 3 complete applications)

Enclosures

INSTRUCTIONS FOR UPDATING NOTEBOOK

REVISION 1 TO APPLICATION FOR PERMIT TO CONSTRUCT AND OPERATE

CAROLINA RESOURCE RECOVERY
MEBANE, NC

JUNE, 2000

NOTE: Orange separator sheets are provided to separate sections for insertion into the ring binders holding the original application documents (March, 2000). DISCARD the separator sheets and retain the original or provided tan dividers.

1. Replace the cover insert on front of ring binder.
2. Replace "Application for Permit to Construct and Operate" (Table of Contents and 11 pages). Replaces original Table of Contents and 7 pages following March 3 letter of transmittal to Tim Jewett.
3. Replace "Composting Facility Operating Plan" (3rd operating plan following "Operating Plans" tab). DO NOT REMOVE the first two operating plans.
4. Replace all contents following "Drawings" tab (insert new Figures 1-4 and revised drawings list).
5. Replace Appendix Table of Contents immediately following "Appendix" tab.
6. Replace Test Boring/Pit log, etc. with revised versions and new sketch (3 pages).
7. Insert stormwater permit Notice of Intent and Erosion and Sediment Control Plan approval letter (with provided tan dividers) at end of Appendix (very back of ring binder).

Please call (336) 271-3093 if enclosures are not as described or if instructions are unclear.

APPLICATION FOR PERMIT TO CONSTRUCT AND OPERATE

CAROLINA RESOURCE RECOVERY (An organic and inert waste management facility)

Mebane, NC

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Composting Facility	
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Figure 2	Composting Area Layout
Figure 3	Organic Waste Flow Diagram
Figure 4	Soil Use Diagram
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Appendix

FACILITY PURPOSE AND OVERVIEW

Name of Facility: Carolina Resource Recovery
Address: 3291 (Est.) Jones Drive
Mebane, NC 27302
Responsible Person: Steven S. Scott, Owner and General Manager
Phone Number: (919) 563-3469

The Carolina Resource Recovery facility ("the facility") will include land clearing and inert debris (LCID) treatment and processing and disposal (landfill) operations along with a large Type I composting facility. The overall purpose and operational goal of the facility is to complement the integrated landscape products production and distribution operations of Scott Sand & Stone, Inc., a landscape materials supplier owned by the proposed facility's owner and located on adjacent property.

The desired product of the composting facility is high quality compost for on-site blending with inorganic soil and for bulk sale to landscapers and contractors for direct application to soils in need of organic amendment. Mulch will also be produced as dictated by market demand. Demand for these products is normally strong from about March 15 through November 15.

These goals will be accomplished by the removal, processing, decomposition, refining and use/sale of the organic portion of the land-clearing and inert debris waste stream, commonly referred to as "wood and yard wastes". It is the intent of the facility to accept land-clearing and inert debris, yard waste, uncontaminated pallets and other acceptable wood from residential and commercial generators for recycling. Uncontaminated soil will also be accepted from grading contractors for on-site blending, sale and distribution. Inert debris and residual waste from treatment and processing will be landfilled on site in a former clay pit.

The facility will encourage recycling and discourage landfilling and/or improper disposal of organic materials. An additional environmental benefit of the facility is reclamation of a former clay pit on the site that was used as a source of raw material for brick manufacture.

COMPLIANCE WITH SITING REQUIREMENTS (15A NCAC 13B .0564 AND .1404)

Floodplains No flood zones (100-year or otherwise) are documented on or near the site. The nearest documented flood zone is along Tributary A to Haw Creek about one-half mile north of the site (see FEMA map in Appendix).

Endangered Species No federally protected endangered or threatened species are documented on or within 1 mile of the site. Refer to the attached letter from the NC Division of Parks and Recreation, Natural Heritage Program dated August 12, 1999 included in the Appendix.

Archaeological/Historical Sites No properties of architectural, historic, or archaeological significance are documented by the state within close proximity that would be affected by the project. Refer to the attached letter from the NC Division of Archives and History dated August 18, 1999 included in the Appendix.

Parks, Recreation, Scenic Areas No parks or similar facilities are documented within 1 mile of the site. Refer to the attached letter from the NC Division of Parks and Recreation, Natural Heritage Program dated August 12, 1999 included in the Appendix.

Wetlands Based on a site reconnaissance by an environmental scientist, no significant areas of jurisdictional wetlands exist on the site; however, a few small areas of probable jurisdictional wetlands were noted and are highlighted on the attached drawings. Refer to the attached letter from Spangler Environmental, Inc. dated October 4, 1999 included in the

Appendix. The proposed site development has been designed to avoid these probable wetland areas (see Design Plan); however, further delineation of the wetland perimeters will be made and U.S. Army Corps of Engineers concurrence will be obtained prior to disturbing land in proximity to those areas.

Adequate Soil

Proposed grading at the site will result in a net soil surplus of about 12,500 cubic yards, more than enough to meet landfill operational cover needs (see Design Report below and Figure 4 in Appendix). Some additional on-site excavation or importation of landfill final cover soil may be needed if the landfill is developed to its maximum areal extent.

Groundwater and Rock A subsurface exploration was performed to address the various criteria for vertical separation between waste treatment, processing and disposal and seasonal high groundwater and rock. The initial exploration was performed in October, 1999 following several weeks of near-record rainfall. In no case was the groundwater table observed within 12 inches of the ground surface in areas other than the landfill. Additional test pits were excavated in the southwest quadrant of the landfill area in May, 2000 and checked over a period of weeks for groundwater occurrence and fluctuation. Some apparent occurrences of groundwater within 4 feet of the ground surface were observed in the landfill area; however, the results were erratic and the site topography is too uneven to design a base grade from the resultant measurements. Additional investigation is needed in the landfill area. Outcroppings and/or areas of exposed weathered rock are evident in some previously excavated areas of the site, but a subsurface exploration revealed that these materials can be excavated with conventional equipment and thus are not rock. No further excavation is planned in those areas. Refer to the attached tables titled "Test Boring/Pit Log" and "Groundwater Observations" included in the Appendix.

Buffers

Adequate area exists on site to provide the required buffers from disposal and processing activities, and the proposed site development plan provides for those buffers (see Design Plan). Required buffers vary from 50 feet to 200 feet depending on the proposed use and the affected feature, but generally fall in the range of 50 to 100 feet for streams and property lines.

Zoning

This is not an issue since Alamance County has no zoning ordinance. Refer to the attached letter from Tom King, Assistant Planning Director, Alamance County Planning Department dated November 1, 1999 included in the Appendix.

Watersheds

The site is not in a watershed according to maps on file at the Alamance County Planning Department. The County also confirmed this. Refer to the attached letter from Tom King, Assistant Planning Director, Alamance County Planning Department dated November 1, 1999 included in the Appendix.

Stormwater

Stormwater permitting is pending through NCDENR's Division of Water Quality. NPDES General Permit No. NCG120063 has been assigned and the application is currently under review by the Winston-Salem Regional Office. A copy of the Notice of Intent (application) is included in the Appendix. Notification of permit issuance will be forwarded to the Solid Waste Section upon receipt. Stormwater leaving the site in existing intermittent streams discharges into a tributary to Haw Creek (WS-V NSW classification).

Erosion and Sediment Control An erosion and sediment control plan for the facility has been approved by the Land Quality Section of the NC Division of Land Resources. A copy has been provided to the Solid Waste Section.

Winston-Salem regional office. A copy of the approval letter is included in the Appendix.

DESIGN REPORT

LCID Treatment and Processing Facility

The LCID treatment and processing (T&P) facility will be located in the southern portion of the site and will occupy about 2.8 acres (see Design Plan and Figure 1). The existing grade will be utilized as the base grade, for the most part, though excavation in the southern section is planned to provide soil borrow and provide a regular surface for site operations. The design base grade calls for a 2 percent minimum base slope and a 3(H):1(V) or 33 percent perimeter cut slope. Stormwater will be directed to perimeter channels that are designed to direct it to a temporary sediment trap. The design layout allows for 20-foot fire lanes around and between the stockpiles (see Figure 1).

Though inflow of waste materials to the facility cannot be accurately predicted due to the commercial nature of the operation and the cyclical nature of land development, knowledge of ongoing practices and waste generators in the local market suggests that a design inflow for organic wastes of 600 cubic yards per week (the equivalent of 50 tandem axle dump trucks) is reasonable. Land clearing normally experiences seasonal peaks from about March 15 through June 30 and again from about September 1 through November 15. Somewhat less activity occurs during July and August, and very little activity occurs during the winter (November 15 through March 15).

An area about 100 feet square is provided in the west end of the T&P area for organic waste grinding, screening and blending operations. The remainder of the area will be used to segregate incoming wastes prior to processing and to stockpile organic wastes prior to grinding. Stockpiles averaging 14 feet high by 30 feet wide at the base are envisioned. The T&P area provides enough room to store approximately 5,600 cubic yards of stockpiled materials at capacity. At the design inflow of 600 cubic yards per week, over 9 weeks of

storage of unprocessed organic waste is available in the T&P area. Overflow storage of incoming wastes, as needed, will occur in the LCID landfill area. Refer to Figure 1.

LCID Landfill

The LCID landfill will be located in the central portion of the site and will occupy about 7.7 acres if fully developed (see Design Plan). The existing grade will be utilized as the base grade, for the most part, with some initial grading needed to remove remnants of former clay mining (mounds, ridges, depressions, etc.) and provide a regular surface for site operations. The design base grade calls for a 2 percent minimum base slope. No excavation below the prevailing base grade is planned, but some local topographic highs will be lowered and filling will occur as needed to raise the base grade above the regulatory limit relative to groundwater. A proposed base grading plan must be deferred until the groundwater investigation is completed and better site topographic information is obtained.

The landfill will be constructed in increments, with no more than one (1) acre of active fill area open at one time. Exterior fill slopes are designed to be constructed at a 4(H):1(V) or 25 percent slope. The final grades shown on the Design Plan provide a total airspace volume (waste disposal plus cover soil volume) of about 290,000 cubic yards. Assuming that operational cover soil will consume 2 percent of the post-settlement volume, the amount of operational cover needed is about 5,800 cubic yards. Final cover volume would be about 13,700 cubic yards if the landfill area were fully developed.

Assuming that 20 percent of the waste entering the facility will end up in the landfill, the initial disposal rate is estimated at 120 cubic yards per week (the equivalent of 10 tandem axle dump trucks). Assuming a 25 percent volume reduction due to compaction and a 10 percent annual increase in disposal rate, the estimated life of the landfill as currently configured is about 21 years. A proposed phasing plan must be deferred until the groundwater investigation is completed and better site topographic information is obtained because the base grading plan and landfill footprint may require some adjustment. The proposed post-closure uses envisioned at this time are open, dormant meadowland or passive recreation.

Stormwater will be directed to perimeter channels or permanent diversions that are designed to direct it to temporary sediment traps. Periodically, inactive areas that have received soil cover will be seeded with native grasses and/or legumes to stabilize soils against erosion.

Composting Facility

The Type 1 composting facility will be located in the western portion of the site and will occupy about 4.8 acres (see Design Plan (Dwg. 4) and Figure 2). A process flow diagram of the facility is provided as Figure 3.

Access to the composting facility will be provided via an all-weather road through the interior of Carolina Resource Recovery which has a secure, gated entrance at Jones Drive. The existing grade will be utilized as the base grade, for the most part, though some excavation in the central section is planned to provide soil borrow and provide a regular surface for site operations. The design base grade calls for a 5 percent minimum base slope. Stormwater will be directed to permanent diversions that are designed to direct it to a temporary sediment trap. The design layout allows for 20-foot fire lanes around and between groupings of windrows (see Figure 2).

Buffers have been provided as follows: 50 feet from the property line (.1404(a)(2)), 1000 feet from the nearest residence (200 feet required by .1404(a)(3)), 1000 feet from the nearest well (100 feet required by .1404(a)(4)), 70 feet from the nearest stream (50 feet required by .1404(a)(5)), and 30 feet from the nearest diversion berm (25 feet required by .1404(a)(8)).

Input material sorting and preparation will occur in the greater facility's Treatment and Processing Area (see Design Plan (Dwg. 4) and Figure 1). Treatment and processing operations will consist of sorting and segregating incoming wastes by type, stockpiling organic waste until enough is on hand for cost-effective grinding by contract (estimated at 3,200 to 4,800 cubic yards), separating soil from stumps by use of a steel grid, grizzly, or similar device, grinding and screening organic wastes and soil, and blending partially or fully

composted organic waste with soil. The area will be constructed and maintained to allow good access and use in various weather conditions to facilitate the uninterrupted use of the facility.

The entire area shown in Figure 2 will be used for open windrow composting of processed organic wastes. The natural soils will form the pad for composting operations. Based on the site subsurface exploration performed in October, 1999, the site soils are typical Piedmont residual soils comprised of fine sandy clayey silt or silty clay. The USDA soil classification for these soil types would typically be loam or silt loam. The SCS Soil Survey of Alamance County indicates that the predominant soil types in the area are Georgeville silt loam, Herndon silt loam and Orange silt loam.

The windrows shall be constructed with varied feedstocks (variable C:N ratios) in combinations designed to assure a high quality, marketable compost product. Temperature and percent moisture will be monitored and turning will be employed as needed to maintain aerobic conditions and suitable elevated temperatures to expedite composting (thermophilic decomposition), reduce odors, and reduce pathogens. This stage should take about 2 to 4 weeks. Stabilization will be performed in the original windrows if required. The stabilization stage should take up to an additional 4 weeks. Aeration and turning will be accomplished with a front-end loader.

The temperature in the windrows will be monitored and recorded at least 3 times per week, 48 hours apart to confirm the achievement and duration of elevated temperature (at least 55 degrees C (131 degrees F) for 72 hours). Temperature will be measured manually by inserting a long-stem thermometer 18 to 36 inches into the piles at various locations no more than 50 feet apart. Percent moisture and pH in the windrows will be monitored at least bi-weekly to assess the need for moisture and/or lime addition. Moisture and pH monitoring will utilize oven-drying (moisture content on percent total weight basis) and slurry testing (pH) of samples taken from the windrows no more than 200 feet apart. These tests will provide data to compare with the target limits (45 to 60 percent moisture and $6 < \text{pH} < 8$).

The facility shall be operated utilizing procedures that will minimize odor, dust, noise and vectors. Grass clippings will likely present the biggest potential odor problem at the facility. Grass clippings and other green wastes begin decomposing quickly and may go "anaerobic", creating foul odor. Odors may also be released during mixing or turning of the windrows. Several steps will be taken to control odor problems, namely:

1. Grass will be processed and turned into windrows within 48 hours of arrival at the staging area;
2. Windrows will be aerated frequently;
3. Wind should be minimal or blowing away from neighbors when compost turning occurs (whenever feasible);
4. Large natural buffers will be maintained, including berms as needed, to help minimize odor effects on neighbors; and
5. When windrows are deemed to be in the anaerobic state, lime may be applied to return pH to near neutral.

Dust will be controlled by the application of water spray, both on the compost in the windrows and on the facility roads during hot, dry weather. The application of make-up water to the compost during turning, to modify (increase) the percent moisture, should alleviate most problems with dust in the active composting area. In the refining process, a water mist may be needed on the screen and/or conveyor to control dust from the finer fraction during agitation. Waste screening and windrow turning may be postponed during periods of high wind to reduce dusting.

Noise is not expected to be a problem given the nature of the proposed operation and the relative isolation of the site. Only a few pieces of conventional heavy equipment are proposed to operate at the facility, with the exception of a tub grinder that will operate in the adjacent treatment and processing area 2 or 3 days every 6 to 10 weeks. The facility is situated on the south side of the 59-acre site, opposite the low-density residential development to the north. The land to the south of the site (125 acres) is owned and occupied by Scott Sand & Stone, Inc., a landscape materials supplier owned by the proposed

facility's owner, thus, noise will not be a concern there. Land to the east and west is mostly wooded and/or cultivated, i.e., undeveloped.

Regarding vectors, the facility staff shall maintain proper drainage and minimize standing water to reduce the potential for mosquito breeding. The wastes being processed and handled are not likely to attract vectors since they are not putrescible.

The waste types accepted and processed at the facility are not especially moisture sensitive and will not generate leachate, so inclement weather presents no particular challenges beyond road maintenance to maintain access and moisture and temperature control in the compost windrows (see Sections II.C.3 and 4). Windrow construction and turning may be postponed during periods of wet and/or very cold weather to avoid disruptions to the composting process. Similarly, waste screening and windrow construction and turning may be postponed during periods of high wind to reduce dusting and maintain site orderliness.

The operating plan for the on-site T&P facility supplying the composting operation calls for grinding and screening stockpiled wastes when approximately 8 weeks of input, or 4,800 cubic yards, has accumulated. The grinding should reduce volume by a factor of 6 or 7, so the design input to the composting facility is 800 cubic yards every 8 weeks. Assuming a 50 percent volume reduction after 8 weeks of high rate decomposition and stabilization, and combining windrows at that time to restore their original size, the cumulative storage required with steady output of 50 cubic yards per week is 1,200 cubic yards. Using the same assumptions, if sales of finished compost were to stop for 4 months during the winter (11/15 through 3/15), the required storage capacity would be 2,200 cubic yards.

The design calls for windrows averaging 8 to 10 feet wide by 5 to 7 feet high at the center and triangular or trapezoidal in cross-section. They will be spaced at 25 feet on center to provide a 15-foot corridor between windrows for placement and turning operations. The composting area provides enough room to store approximately 7,000 cubic yards of materials at capacity. Thus, considerable excess storage capacity is provided by the design to accommodate seasonal and economy-based reductions in product demand and/or input that

exceeds the projected amount. In the event of changed market conditions resulting in declining demand for the product, on-site storage can be maximized, limits on operating hours and/or intake quantity can be imposed, and/or incoming organic waste can be landfilled in the facility's on-site LCID landfill for permanent disposal or future recovery and composting.

Site personnel will consist of the following:

Composting Supervisor: Supervises site operations and site personnel under the direction of the General Manager.

Gate Attendant: Controls access, records transactions and directs vehicles.

Equipment Operators: Operate equipment associated with composting operations.

Technicians: Perform labor and monitoring tasks at the site.

Design plans (Drawings 1 through 5) accompany this report and illustrate the overall facility layout of Carolina Resource Recovery. Approved erosion and sediment control plan drawings (Drawings 6 and 7) also accompany this report.

OPERATING PLAN

CAROLINA RESOURCE RECOVERY

COMPOSTING FACILITY

MEBANE, NORTH CAROLINA

June 2000 (Revision 1)

Prepared for:

Steven S. Scott
Mebane, North Carolina

Prepared by:



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Greensboro, North Carolina 27405

OPERATING PLAN
CAROLINA RESOURCE RECOVERY COMPOSTING FACILITY
Mebane, NC

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CRR Composting Facility Operating Plan

I. Facility Overview

Steven S. Scott, Owner and <u>Operator</u>	919- 563-3469	Office
Emergency Contact (24 Hours)	TBA	
Swepsonville Fire Dept.	336-578-1500	Fire Station
FIRE/RESCUE EMERGENCIES	911	Fire/EMS

Site Personnel:

- Composting Supervisor: Supervises site operations and site personnel under the direction of the General Manager.
- Gate Attendant: Controls access, records transactions and directs vehicles.
- Equipment Operators: Operate equipment associated with composting operations.
- Technicians: Perform labor and monitoring tasks at the site.

The Carolina Resource Recovery facility ("the facility") will include a large Type I composting facility along with land clearing and inert debris (LCID) treatment and processing and disposal (landfill) operations. The overall operational goal of the facility is to complement the integrated landscape products production and distribution operations of Scott Sand & Stone, Inc. The desired product of the composting facility is high quality compost for blending with inorganic soil and for bulk sale to landscapers and contractors for direct application to soils in need of organic amendment.

These goals will be accomplished by the removal, processing, decomposition, refining and use/sale of the organic portion of the land-clearing and inert debris waste stream, commonly referred to as "wood and yard wastes". It is the intent of the facility to accept land-clearing and inert debris, yard waste, uncontaminated pallets and other acceptable wood from residential and commercial generators for recycling. A process flow diagram of the facility is provided as Figure 3.

II. Operations Overview

A. Hours of Operation

The facility will have scheduled hours of operation as follows:

Monday through Friday	7:00 am - 6:00 pm
Saturday	7:00 am - 12:00 pm
Sunday	Closed

B. Receiving

All vehicles entering the facility will be stopped and recorded, with the hauler name, vehicle type and size, and type of waste materials noted. The gate attendant will then direct the vehicle driver to the appropriate off-loading area (i.e. wood processing area, inert debris processing area, etc.). The gate attendant will notify the appropriate facility employee to allow inspection of materials as they are being off-loaded. The visual inspection will ensure that received materials are compatible with the intent and goals of the facility (see "Acceptable Materials", Section III. A). Those materials not acceptable at the facility shall be handled as outlined in Section III. B.

C. Staging and Processing

The staging area will be that portion of the facility so designated (see Design Plan) for the off-loading and temporary storage of incoming materials. The treatment and processing area will be used for the storage of organic wastes prior to grinding, processing materials, i.e., grinding of wood, separation of inert debris and large wood items, refining of compost, etc. These areas will be constructed and maintained to allow good access and use in various weather conditions to facilitate the uninterrupted use of the facility.

D. High Rate Decomposition

The first stage of composting will be accomplished in open, aerated windrows. The construction and maintenance of the windrows shall be as described in Section III. C. The windrows will be constructed in the designated composting area (see Figure 2). The windrows shall be constructed with varied feedstocks (variable C:N ratios) in combinations designed to assure a high quality, marketable compost product. Temperature and percent moisture will be monitored and turning will be employed as needed to maintain aerobic conditions and suitable elevated temperatures to expedite composting (thermophilic decomposition), reduce odors, and reduce pathogens. This stage should take about 2 to 6 weeks.

E. Stabilization

The stabilizing of fresh compost to produce mature compost will be provided for as dictated by market demands. Stabilization is the gradual reduction of microbial activity in the presence of moisture and aeration, and is accomplished by continuing the aerated windrow composting process under the same controlled conditions as in the first stage. Thus, stabilization will be performed in the original windrows if required. Since the target market is consumers of bulk quantities of blended soils and/or compost for soil amendment, a highly stabilized compost product is not envisioned. The degree of stabilization achieved may also depend on demand versus production rates. The stabilization stage should take up to an additional 4 to 8 weeks.

F. Refining, Curing, and Quality Control

The compost will be refined by screening to remove oversize particles and foreign material and improve the consistency and quality of the final product. Screening will normally occur in the treatment and processing area as the compost is transferred from the windrows to the final storage area (see Design Plan). Oversize material will be run back through the process or utilized as mulch. Foreign matter will be disposed of in the on-site LCID landfill if the waste

is an acceptable waste (see Design Plan) or in an appropriate permitted off-site facility. Curing will be effected in the final storage area if and only if additional humification is desired to satisfy market demands.

Quality control will consist of regular measurement of temperature and percent moisture and periodic manual/visual inspection for particle size and the presence of foreign material. It may also occasionally include measurement of particle size and gradation, pH, biochemical oxygen demand (BOD), heavy metals and/or phytotoxins.

G. Storage and Load-Out

In the storage and load-out area, market-ready compost will be stockpiled until sale. The storage and load-out area shall be maintained to facilitate stormwater drainage and allow easy access and movement of equipment for loading. Trucks arriving at the facility to load compost shall check in at the gatehouse. The gate attendant will direct trucks to the storage and load-out area and notify the facility staff of the need to load product. The loaded vehicles will then return to the gatehouse for checkout. At time of checkout, each new customer will be provided a copy of the Compost Product Information Sheet (see attached exhibit).

H. Product Use and Marketability

It is the intent of the facility to develop products that have the attributes desired for use as a soil amendment in landscaping projects, parks, golf courses, highway right-of-ways and beautification projects. Carolina Resource Recovery intends to blend soils for sale to landscaping contractors. In addition, commercial landscapers and private citizens will be able to purchase the compost directly. The established market contacts of Scott Sand & Stone, Inc., a landscape materials supplier owned by the proposed facility's owner, will be instrumental in developing and sustaining markets for the finished products.

Given the intended use of the compost, market sensitivity to quality is not expected to be as great as if the compost was to be marketed as a mature compost product for retail sale.

Thus, lack of demand due to poor quality is considered a minimal risk. In the event of changed market conditions resulting in declining demand for the product, on-site storage can be maximized, limits on operating hours and/or intake quantity can be imposed, and/or incoming organic waste can be landfilled in the facility's on-site LCID landfill for permanent disposal or future recovery and composting.

III. Operating Procedures

The purpose of this section is to establish the standard operating procedures for managing materials and producing compost at the facility. These procedures may be refined or modified as experience is gained with the facility and the process.

A. Acceptable Materials

The facility is designed as a Type 1 wood and yard waste composting facility. Acceptable materials shall include land clearing waste, untreated and unpainted wood waste, uncontaminated pallets, yard and garden waste (leaves, grass, brush, limbs), silvicultural waste, and other biodegradable organic wastes determined to be suitable for the composting process and acceptable to NC DENR.

B. Receipt and Preparation of Materials

The gate attendant will make a visual check of incoming loads prior to receipt, under normal conditions, for those loads not coming from a familiar source. Any non-conforming/unauthorized materials shall not be allowed to off-load. The gate attendant will be knowledgeable of approved disposal options for various non-conforming/unauthorized materials, and drivers with such materials will be directed to an appropriate disposal location.

Upon receipt, the materials shall be off-loaded at the staging area, or in the case of high inflow, at the treatment and processing area, which will serve as an overflow area. When possible, loads will be examined for contaminants, nonconforming and/or unauthorized

CRR Composting Facility Operating Plan

materials as they are dumped and spread. Any nonconforming and/or unauthorized materials found during off-loading shall be reloaded into the delivery vehicle.

In the event non-conforming/unauthorized wastes are discovered in the staging/processing area, those materials shall be separated by the facility staff. A location shall be established in the staging, storage and load-out area (see Drawing 4) for the temporary storage of those materials that cannot be legally or practically disposed of in the on-site LCID landfill. Facility personnel shall be responsible for the loading and transporting of such materials to an appropriate and properly permitted disposal facility.

The preparation of incoming wastes will consist of grinding, screening and mixing of stumps, wood waste, brush, leaves, etc. This preparation will be performed in the treatment and processing area (see Design Plan). The facility staff will be responsible for preparation of the materials in a manner suitable for introduction as compost feedstocks.

Grass clippings shall be incorporated into windrows and turned within 48 hours of on-site arrival. This will reduce the potential for odors and increase space available in the staging area for incoming materials.

C. Windrow Composting

The windrows will be constructed in the designated composting area (see Figure 2). The windrows shall be constructed with varied feedstocks (variable C:N ratios) in combinations designed to assure a high quality, marketable compost product. Temperature and percent moisture will be monitored and turning will be employed as needed to maintain aerobic conditions and suitable elevated temperatures to expedite composting (thermophilic decomposition), reduce odors, and reduce pathogens. This stage should take about 2 to 4 weeks.

1. Feedstock Properties

The feedstock raw materials are assumed to be brush and stumps, land-clearing debris, yard trash including grass and plant clippings, silvicultural wastes, and clean wood waste such as pallets. Leaf wastes may be expected in the fall and Christmas trees in January. Stumps may contain a large amount of soil, which will be screened out before composting.

The carbon:nitrogen ratio (C:N) of the feedstocks is a critical factor affecting the rate of decomposition. Different feedstocks will contain different amounts of decomposable carbon and nitrogen. High carbon waste such as wood is sometimes called "brown waste", while high nitrogen waste such as fresh grass clippings is sometimes called "green waste." During windrow construction, the layering of feedstocks should be designed to result in a mixture having a suitable carbon:nitrogen ratio. The C:N ratio should ideally be in the 25:1 to 40:1 range. The average carbon:nitrogen ratios for some typical feedstock materials are as follows:

<u>Waste Material</u>	<u>C:N Ratio</u>
Wood Chips	800:1
Sawdust	400:1
Straw	100:1
Leaves (dry)	90:1
Leaves (fresh)	40:1
Grass Clippings	20:1

The initial carbon:nitrogen ratio of the feedstock should be adjusted to a maximum of about 40:1 to provide sufficient nitrogen nutrients for vigorous composting, and a minimum of about 25:1 to minimize ammonia formation and other odors. As compost matures, reductions in C:N to 10-15:1 may result as carbon is released during the humification process. The use of partially composted materials as a layered feedstock is permissible. Such material would

have a lower C:N ratio and thus would act as an inoculant of nitrogen to reduce the C:N ratio of brown waste feedstocks. For example, materials that have been in the composting process 3 to 6 weeks might be layered into a new windrow of leaves and wood chips to lower the C:N ratio and thus increase the initial decomposition rate. Urea and ammonium nitrate are other convenient sources of nitrogen that could be used as inoculum to lower the initial C:N ratio; however, they must be used with care to avoid excessive addition that could result in ammonia formation. If such inoculum are used, they will be added at the time of initial layering of the feedstocks or during aeration to assure thorough mixing.

The chemical property pH is the measure of acidity/alkalinity. The correct pH balance plays an important role in the composting process. The pH balance affects the quantity of nutrients available to support the microbial activity. The closer the compost mixture is to neutral (pH = 7), the more efficient the composting process will be, thus a pH in the range of 6 to 8 is desired. Lime can be used as an additive to the feedstock layers if necessary to increase pH levels.

The particle size of feedstocks also affects the rate of decomposition. Small particle sizes provide more surface area for microbial activity which results in a rapid decomposition rate. Particle size reduction also results in feedstock volume reduction. Small particle sizes must be balanced by the need to have voids between particles (air space) for oxygen to access the microorganisms. Thus, blending of feedstocks to ensure a good distribution (gradation) of particle sizes is needed to promote oxygen availability and microbial activity.

2. Placement

The windrows will be constructed in the composting area as shown on Figure 2. The windrows will be approximately 8 to 10 feet wide by 5 to 7 feet high at the center and will be triangular or trapezoidal in cross-section. They will be spaced at 25 feet on center to provide a 15-foot corridor between windrows for placement and turning operations. The windrows will be constructed using layered feedstocks as necessary to optimize carbon:nitrogen (C:N) ratios.

The prepared materials will be placed in the windrows either by dump trucks off-loading in a continuous length dumping method or by a front-end loader. The first layer of feedstock may range in depth from 12 to 60 inches depending on the percentage and number of feedstocks being used to generate the desired type of compost. Where multiple layers are employed, the feedstock for the second and subsequent layers shall be placed by a front-end loader.

During and/or after layering of the feedstocks, the equipment operator will mix the layered feedstocks in the windrow. After mixing, the front-end loader will create the desired windrow size and shape. Care must be taken not to compact the feedstocks during placement and/or shaping in order to maintain a porous, fluffed pile.

3. Moisture Modification

Control of the amount of water in the composting material is a critical element in achieving optimum aerobic composting results. The microbes (bacteria) responsible for the aerobic decomposition process need appropriate quantities of water, oxygen and nutrients to accomplish humification. The amount of moisture in the windrow (percent moisture) should be maintained between 45 and 60 percent. (Percent moisture = weight of water in moist compost ÷ moist (total) weight of compost) Percents moisture outside these limits will cause a reduction in microbial activity, slowing the composting process.

During the initial layering of the feedstocks, it is preferable to know the percents moisture of the various feedstocks. This will enable the proper moisture level to be attained throughout the windrow during its construction. Make-up water should be applied as needed during the layering of feedstocks to promote uniform moisture distribution during mixing and in such a manner as to prevent runoff. Make-up water will be pumped from a spring-fed farm pond located about 600 feet south of the composting area on land owned by the facility owner. Application will be by hose with an adjustable nozzle capable of providing a fine spray.

Once the composting process begins, increased temperature and subsequent turning (aeration) will cause a substantial loss of moisture. Measurement of compost percent

moisture in the windrows at least weekly will determine the need for water addition during subsequent turnings. Turning of the piles with a front-end loader will be done in such a way as to thoroughly mix make-up water uniformly with the compost and to prevent runoff.

The exposed windrows will allow some rain to infiltrate the compost and increase the percent moisture. The facility staff must be aware of current moisture conditions and forecasted weather when determining the need for moisture modification of the windrows. Maintaining a triangular cross-sectional shape of the windrow will help reduce rainfall infiltration when moisture conditions are high-normal or excessive. More frequent turning may be required in such cases to promote drying.

The grade of the composting area must be maintained to promote rapid drainage of stormwater runoff. Ponding of water in the composting area should not be allowed to occur.

4. Aeration (Turning)

Aeration of the composting materials is necessary for aerobic biological processes. Aeration provides compost oxygenation, helps ensure process stability, and enables temperature control. Insufficient aeration can result in elevated temperatures that retard microbiological activity (slow the decomposition process). In addition, the compost may go anaerobic (lack of oxygen), a condition that causes noxious odors and can produce plant toxins. Excessive aeration, on the other hand, accelerates heat removal and increases evaporation, which can also result in a reduced rate of decomposition. Thus, the proper frequency and extent of aeration (turning) is critical to an efficient composting process, in terms of both temperature control and oxygenation. The physical mixing during turning also breaks up air channels and clumps, blends materials from top to bottom in the windrow, and provides for uniform microbial activity. Compost temperature can also be controlled by windrow size.

Aeration and turning will be accomplished with a front-end loader. The loader bucket shall be raised to its maximum height, then emptied gradually so as to promote cascading of the compost to maximize aeration. If and when the throughput of the facility justifies the

expense, a compost turner may be employed. The frequency of turning will be dictated by temperature and moisture conditions as well as odor, if it should occur.

In order to maintain a high rate of decomposition, the temperature should be controlled to be within the range of 45 to 55 degrees C (113 to 131 degrees F). For destruction of pathogens, however, the temperature of the compost must be allowed to remain above 55 degrees C (131 degrees F) for at least three (3) days, and the compost must be aerated during that time to maintain the elevated temperature and expose all of the compost to it (15A NCAC 13B .1406(10)). This process also inactivates most weed seeds. Then, the temperature will be lowered to within the range for optimum decomposition (45 to 55 °C).

Care should be taken to not let the compost temperature climb above 70 degrees C (158 degrees F) because microbial activity is sharply reduced at that point. At temperatures above 80 degrees C (176 degrees F), sterilization of the microbes can occur, completely stopping the composting process until recolonization occurs. Caution should also be exercised to not allow mixing of compost materials that have undergone pathogen and weed seed destruction with those that haven't, either in the windrows or in equipment or vehicles used to process or transport the compost.

D. Compost Stabilization

Since the target market is consumers of bulk quantities of blended soils and/or compost for soil amendment, a highly stabilized compost product is not envisioned. The degree of stabilization achieved may also depend on demand versus production rates. The stabilization stage, if employed, should take up to an additional 4 weeks.

The stabilizing of fresh compost to produce mature compost will be provided for as dictated by market demands. Stabilization is the gradual reduction of microbial activity in the presence of moisture and aeration, and is accomplished by continuing the aerated windrow composting process under the same controlled conditions as in the first stage. Thus, stabilization will be performed in the original windrows if required. Combining windrows of

similar age may facilitate the stabilizing process. This will also maximize the space utilization of the compost area.

E. Refining and Curing

The compost will be refined by screening to remove oversize particles and foreign material and improve the consistency and quality of the final product. Prior to refining the compost, the addition of moisture to the windrows will be discontinued to interrupt microbial activity and allow the compost to cool and dry to a consistency suitable for screening.

Screening will normally occur in the treatment and processing area as the compost is transferred from the windrows to the final storage area (see Design Plan). If compost is transferred to the final storage area without screening, screening shall occur prior to load-out of compost for sale and use. Oversize material will be run back through the process or utilized as mulch. Foreign matter will be disposed of in the landfill (see Figure 3 and Design Plan).

Curing will be effected in the staging, storage and load-out area if and only if additional humification is desired to satisfy market demands. As such, curing will be accomplished in static piles or windrows so that aerobic conditions, temperature and percent moisture can be monitored and managed.

F. Quality Control

The Composting Supervisor will be the responsible party for achieving and maintaining quality control standards in the composting process. The temperature in the windrows will be monitored and recorded at least 3 times per week, 48 hours apart to confirm the achievement and duration of elevated temperature (at least 55 degrees C (131 degrees F) for 72 hours). Temperature will be measured manually by inserting a long-stem thermometer 18 to 36 inches into the piles at various locations no more than 50 feet apart. Percent moisture and pH in the windrows will be monitored at least bi-weekly to assess the need for moisture

and/or lime addition. Moisture and pH monitoring will utilize oven-drying (moisture content on percent total weight basis) and slurry testing (pH) of samples taken from the windrows no more than 200 feet apart. These tests will provide data to compare with the target limits (45 to 60 percent moisture and $6 < \text{pH} < 8$).

Random, periodic manual/visual inspections of refined compost will be made for particle size verification and the presence of foreign material. Particle size distribution will be based on customer demand, but in no case shall man-made inerts be allowed to exceed 1 inch. These manual/visual inspections will also allow assessment and confirmation that the compost product is free from offensive odor and contains no sharp particles that would cause injury to persons handling the compost.

Quality control may also occasionally include measurement of particle size and gradation, pH, biochemical oxygen demand (BOD), heavy metals and/or phytotoxins as needed to satisfy quality control and production issues, customer needs and/or regulatory concerns.

G. Odor, Dust, Noise and Vector Control

The facility shall be operated utilizing procedures that will minimize odor, dust, noise and vectors.

Grass clippings will likely present the biggest potential odor problem at the facility. Grass clippings and other green wastes begin decomposing quickly and may go "anaerobic", creating foul odor. Odors may also be released during mixing or turning of the windrows. Several steps will be taken to control odor problems, namely:

1. Grass will be processed and turned into windrows within 48 hours of arrival at the staging area;
2. Windrows will be aerated frequently;
3. Wind should be minimal or blowing away from neighbors when compost turning occurs (whenever feasible);

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4. Large natural buffers will be maintained, including berms as needed, to help minimize odor effects on neighbors; and
5. When windrows are deemed to be in the anaerobic state, lime may be applied to return pH to near neutral.

Dust will be controlled by the application of water spray, both on the compost in the windrows and on the facility roads during hot, dry weather. The application of make-up water to the compost during turning, to modify (increase) the percent moisture, should alleviate most problems with dust in the active composting area. In the refining process, a water mist may be needed on the screen and/or conveyor to control dust from the finer fraction during agitation. Waste screening and windrow turning may be postponed during periods of high wind to reduce dusting.

Noise is not expected to be a problem given the nature of the proposed operation and the relative isolation of the site. Only a few pieces of conventional heavy equipment are proposed to operate at the facility, with the exception of a tub grinder that will operate in the adjacent treatment and processing area 2 or 3 days every 6 to 10 weeks. The facility is situated on the south side of the 59-acre site, opposite the low-density residential development to the north. The land to the south of the site (125 acres) is owned and occupied by Scott Sand & Stone, Inc., a landscape materials supplier owned by the proposed facility's owner, thus, noise will not be a concern there. Land to the east and west is mostly wooded and/or cultivated, i.e., undeveloped.

Regarding vectors, the facility staff shall maintain proper drainage and minimize standing water to reduce the potential for mosquito breeding. The wastes being processed and handled are not likely to attract vectors since they are not putrescible.

H. Operations in Inclement Weather

The waste types accepted and processed at the facility are not especially moisture sensitive and will not generate leachate, so inclement weather presents no particular challenges

beyond road maintenance to maintain access and moisture and temperature control in the compost windrows (see Sections II.C.3 and 4). Windrow construction and turning may be postponed during periods of wet and/or very cold weather to avoid disruptions to the composting process. Similarly, waste screening and windrow construction and turning may be postponed during periods of high wind to reduce dusting and maintain site orderliness.

I. Record Keeping and Reporting

The gate attendant will maintain daily records of waste received, by type, quantity (vehicle size and percent full) and source. The record will also indicate the disposition of the waste, i.e., direct resale, processing only before sale, processing for compost, or landfill.

The Composting Supervisor shall be the responsible party for recording information for each windrow constructed. The windrow report will contain the following, with date and time noted for each entry: 1) quantity and types of feedstocks and layering scheme, 2) percent moisture at time of windrow construction, from periodic moisture content tests of windrow samples and the approximate location of sampling points, and before subsequent modifications if more than 48 hours has elapsed, 3) initial temperature of the windrow (48 to 72 hours after construction), periodic temperatures of windrow and the approximate location of testing points, 4) date of each turning of windrow, 5) date when windrows are combined, if done, 6) length of composting period, 7) analytical results from compost testing, and 8) comments or general notes on types and origin of wastes processed, processing, weather, final disposition of compost product; etc.

The facility staff should maintain a daily calendar where notations of weather conditions and other relevant information can be recorded. This information will be used in comparing and analyzing windrow reports for processing rates, moisture variations, volume reduction and compost quality.

An annual report will be prepared and submitted to the Division of Waste Management for the period July 1 to June 30 each year on or before August 1. The report will document the total

CRR Composting Facility Operating Plan

quantity and types of waste received, including waste received from local governments, and the quantities of compost and mulch produced and sold. It will also document temperature monitoring results to demonstrate compliance with pathogen destruction criteria. For reporting on a weight basis, processed volumes will be converted using a factor of 500 pounds per cubic yard (0.25 tons/CY).

The annual report will follow the following general outline:

- (1) Facility name, address, and permit number;
- (2) Total quantity, in tons, and type(s) of waste received at the facility, including waste received from local governments;
- (3) Total quantity, in tons, and type(s) of waste processed into compost;
- (4) Total quantity, in tons, and type(s) of compost produced at the facility, by product classification;
- (5) Total quantity, in tons, and type(s) of compost removed for use or disposal from the facility, by product classification, along with a general description of the market;
- (6) Summary of temperature monitoring, by month; and
- (7) Results of any analytical tests performed.

IV. Equipment

The following equipment is planned for use at the facility. Additional equipment and vehicles are available at Scott Sand & Stone (contiguous site) for use at the facility as needed.

1980 Fiat Allis 345-B Loader

Ford 555-B Loader

1988 Dresser 520B Wheel Loader

1997 John Deere 5300 Tractor with 540 Loader

1999 Extec Screener with vibrating grid and stacking conveyor

V. Security, Safety and Fire

A. Security

The facility will be a restricted access facility. As a restricted access facility, there are posted hours of operation. Customers will be allowed to use the facility only during the posted hours unless special arrangements are made with the Facility Manager.

To prevent access during non-operational hours, fencing and/or gates shall be installed at all potential points of vehicle access. Security of the facility shall be aided by the strategic placement of lights to discourage theft, vandalism and other nuisance behavior.

B. Safety

The safety of personnel and users of the facility shall be a high priority. Safety practices shall encompass all people working, delivering materials, or receiving finished product at the facility. The operation shall be conducted in compliance with all applicable state and federal OSHA standards. Telephone numbers of emergency agencies shall be prominently displayed, and all staff shall be familiar with those numbers and the location of telephones. In the event of injury, OSHA guidelines shall be followed to ensure the proper response and reporting of incidents.

Equipment shall be used in the manner described in the owner's manual, with special attention to safety features and safe operating guidelines. The facility staff shall maintain equipment in safe operating condition. The staff will be familiar with and follow the equipment manufacturers' recommendations for the safe use and maintenance of the equipment.

C. Fire

The aerobic composting process is exothermic, i.e., heat is generated by the high rate decomposition process. If excessive heat develops in the presence of flammable feedstocks,

the potential exists for occasional fires. The facility personnel shall be trained in basic on-site fire response procedures and shall have access to heavy equipment (see Section IV above), water and extinguishers to aid in the early suppression of fire. Emergency (911) and fire station telephone numbers shall be posted at the gatehouse and by all on-site telephones. Fire suppression may include isolating and spreading burning material, application of water or chemical suppressant, and/or covering with soil.

The facility design and operation shall allow access and movement of emergency fire fighting equipment at all times. Fire lanes 20 feet wide will be provided around the facility perimeter and intermittently within the composting area (See Figure 2). Prior to commencing facility operations, a pre-plan site meeting will be held with the Swepsonville Fire Department to finalize the emergency plan. The facility management shall arrange periodic fire drills to train and ready site personnel for proper response. All occurrences of fire shall be reported to and reviewed by the Swepsonville Fire Department so that procedures can be established to prevent the reoccurrence of similar circumstance. Fire shall be reported to the Division of Waste Management and others as required by the permit.

CAROLINA RESOURCE RECOVERY

COMPOST PRODUCT INFORMATION SHEET

GRADE: The compost you have purchased is **GRADE A COMPOST** derived from recycled yard waste, land-clearing debris (trees, brush and stumps), and other biodegradable organic wastes approved by the North Carolina Department of the Environment and Natural Resources, Division of Waste Management.

RECOMMENDED USES: Use as a *SOIL AMENDMENT* to add humic (organic) matter, improve soil texture and drainage, increase rainfall infiltration and water retention, increase biological activity, and encourage seedling emergence and root growth. Can also be used as a *MULCH* to reduce soil erosion and moisture evaporation, moderate soil temperatures, encourage seed germination, and suppress weed growth.

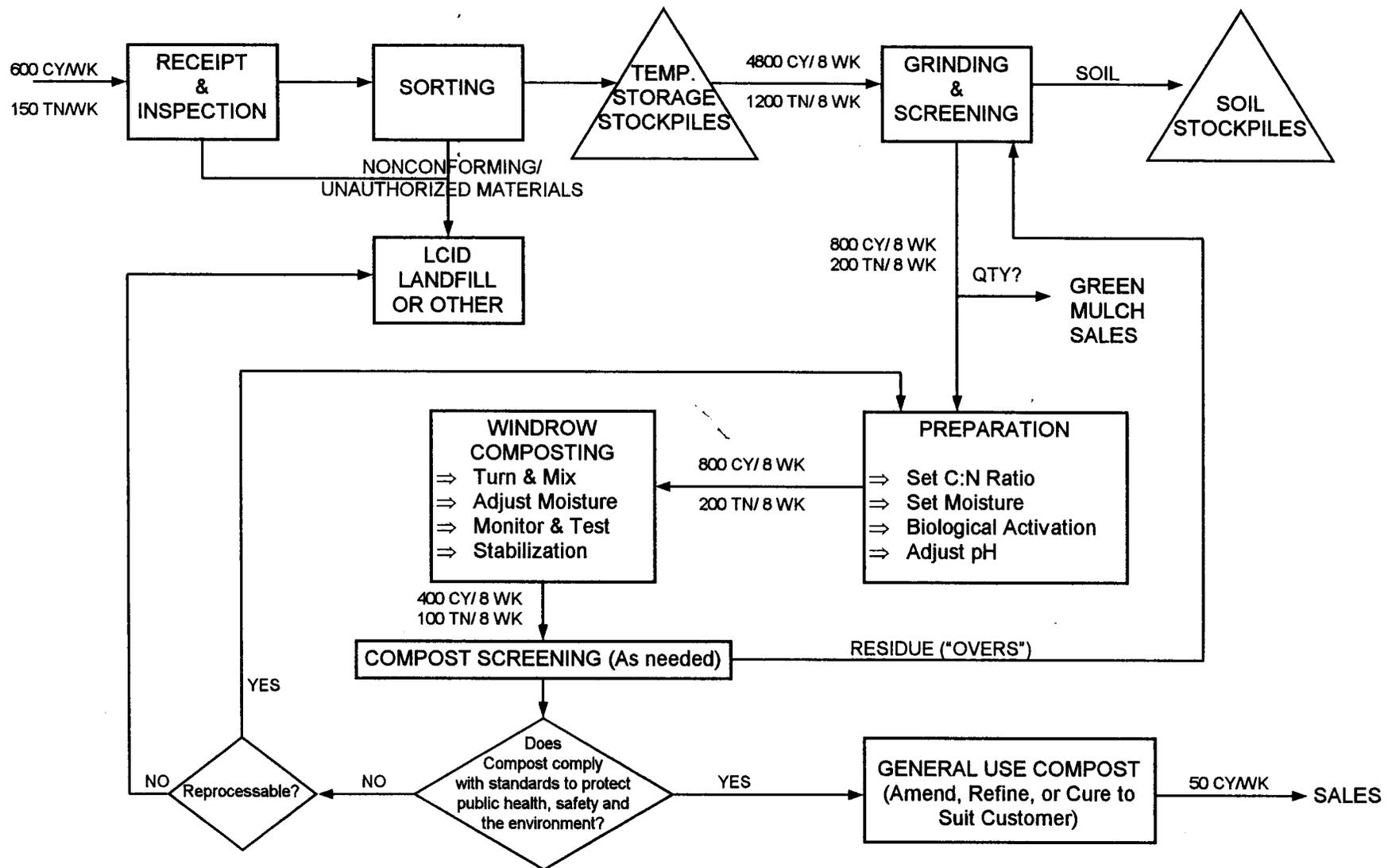
APPLICATION RATES: As a soil amendment, spread to no more than 3 inches depth at a time prior to mixing and repeat until the desired organic content is attained. As a mulch, spread to desired thickness (3 inches minimum recommended); secure if necessary with netting, roving or pegs and twine.

THERE ARE NO RESTRICTIONS ON THE USE OF THIS PRODUCT.

CAROLINA RESOURCE RECOVERY

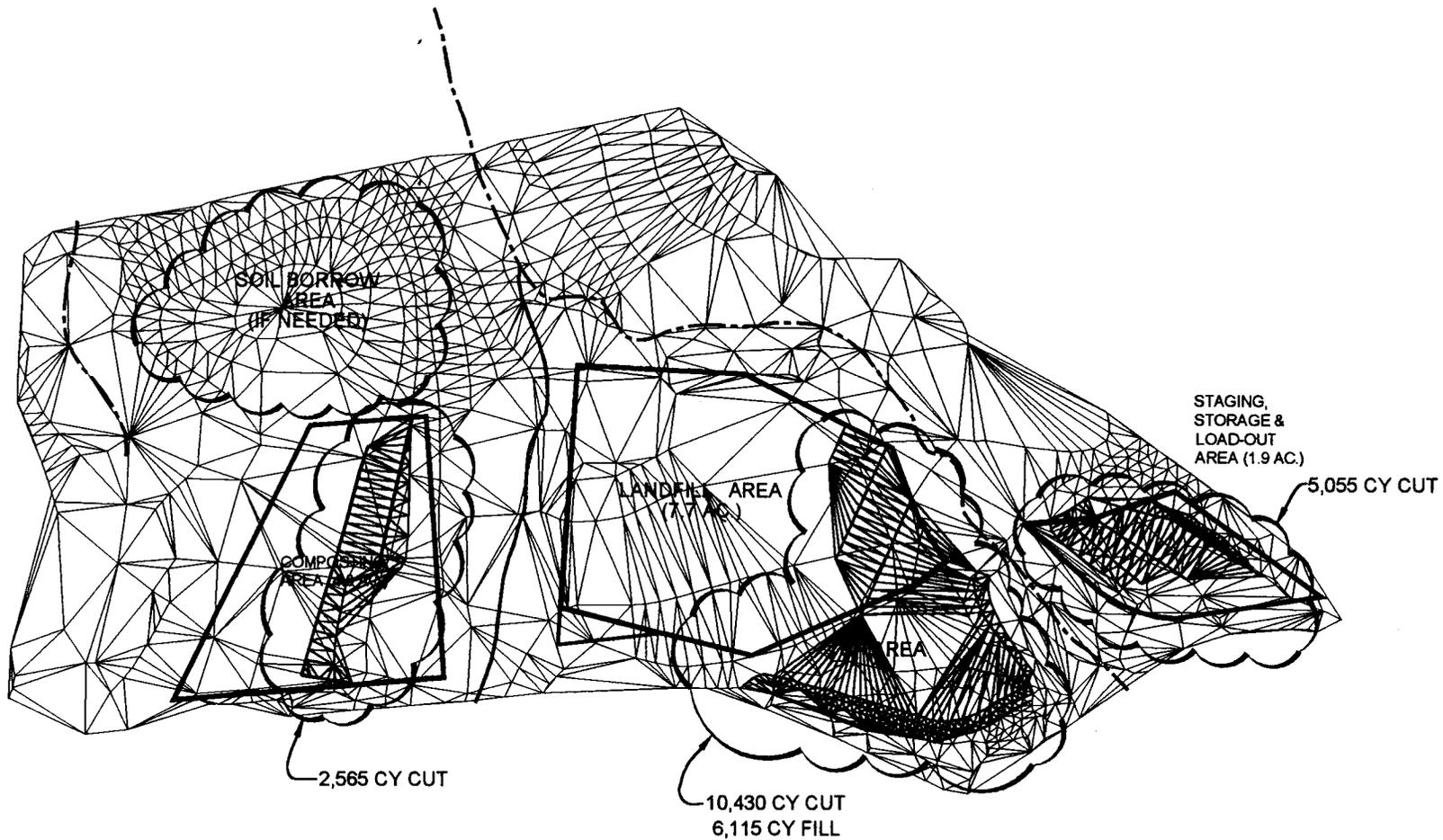
3285 Jones Drive

Mebane, NC 27302



**CAROLINA RESOURCE RECOVERY COMPOST FACILITY
ORGANIC WASTE FLOW DIAGRAM**

FIGURE 3



**CAROLINA RESOURCE RECOVERY COMPOST FACILITY
SOIL USE DIAGRAM**

June 2000

FIGURE 4

Ecologic Associates, P.C.

APPLICATION FOR PERMIT TO CONSTRUCT AND OPERATE

**CAROLINA RESOURCE RECOVERY
Mebane, NC**

DRAWINGS SUBMITTED SEPARATELY

- Drawing 1 Cover Sheet
- Drawing 2 Aerial Photo
- Drawing 3 1/4-Mile Radius Map
- Drawing 4 Design Plan
- Drawing 5 Cross Sections
- Drawing 6 Erosion and Sediment Control Plan
- Drawing 7 Erosion and Sediment Control Details

APPLICATION FOR PERMIT TO CONSTRUCT AND OPERATE

**CAROLINA RESOURCE RECOVERY
Mebane, NC**

APPENDIX

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Copy of deed

Fire Marshal letter

FEMA flood zone map

Endangered species letter

Archaeological/historic sites letter

Wetlands assessment report

Test boring/pit log and Groundwater observations

Zoning/watershed letter

Stormwater permit Notice of Intent

Erosion and Sediment Control Plan approval letter

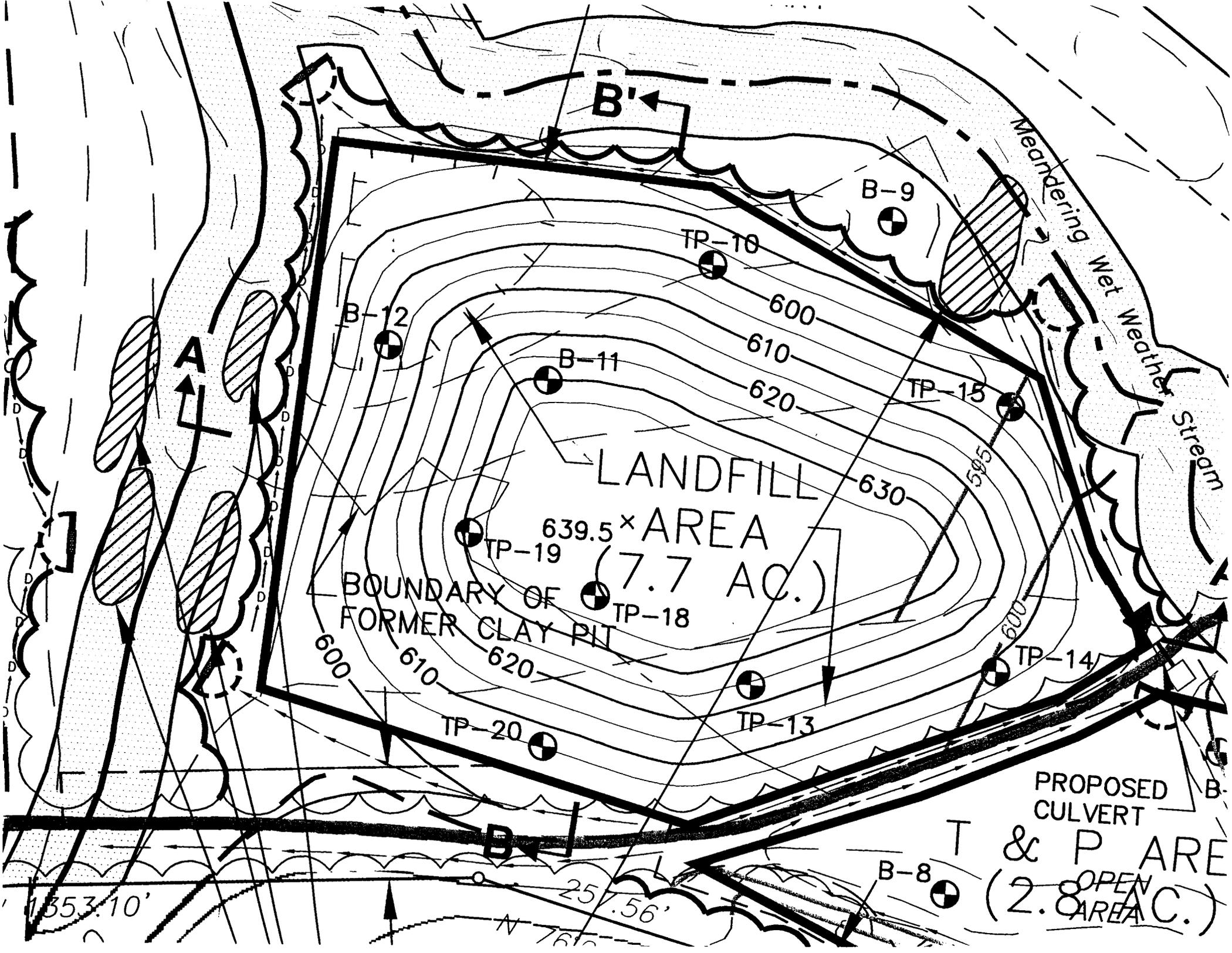
TEST BORING/PIT LOG

Near-surface Hydrogeologic Exploration Carolina Resource Recovery Mebane, NC

<u>Boring/TP</u>	<u>Depth (ft)</u>	<u>Soil Description</u>
B-1	2.7	Red-brown Fine Sandy SILT
B-2	2.8	Tan & Gray Fine Sandy SILT
B-3	2.7	Red-brown Fine Sandy SILT
B-4	3.2	Red-brown Fine Sandy SILT
B-5	3.0	Red & Light Gray Fine Sandy Clayey SILT
B-6	2.8	Red & Tan Fine Sandy Clayey SILT
B-7	2.7	Red & Tan Fine Sandy Clayey SILT
B-8	2.7	Red & Tan Fine Sandy Clayey SILT
B-9	2.8	Light Gray & Tan Fine Sandy SILT with gravel
TP-10	4.0	Tan & Gray Weathered Siltstone & Shale
B-11	2.3	Tan Fine Sandy SILT with gravel
B-12	2.9	Tan Fine Sandy SILT with gravel
TP-13	5.0	Tan & Gray Weathered Siltstone & Shale
TP-14	3.8	Tan & Gray Weathered Siltstone & Shale
TP-15	4.5	Tan & Gray Weathered Siltstone & Shale
TP-16	5.0	Red & Light Gray Fine Sandy Silty CLAY
TP-17	5.0	Red & Light Gray Fine Sandy Clayey SILT
TP-18	4.5	Tan & Gray Weathered Siltstone & Shale
TP-19	5.0	Tan & Gray Weathered Siltstone & Shale
TP-20	4.5	Tan & Gray Fine Sandy SILT

NOTE: Borings were drilled with a tractor-mounted auger attachment. Test pits were excavated with a rubber-tired backhoe. Borings drilled at locations 10 and 13 through 15 prior to excavating the test pits produced silt and gravel cuttings; therefore, weathered rock is also believed to occur at locations 9,11 and 12. Field work done on 10/25/99 and 5/19/00 (TP 18-20).

GROUNDWATER OBSERVATIONS						
Near-surface Hydrogeologic Exploration Carolina Resource Recovery, Mebane, NC						
Depth to Groundwater (feet below ground surface)						
Boring/TP	GS Elev.*	10/25/99**	10/26/99	10/29/99	5/19/00**	6/5/00
B-1	621.3	Dry	Dry	Dry		
B-2	621.2	Dry	Dry	Dry		
B-3	618.0	Dry	Dry	Dry		
B-4	610.5	Dry	Dry	Dry		
B-5	606.7	Dry	Dry	Dry		
B-6	605.8	Dry	2.7	Damp		
B-7	612.2	Dry	Dry	Dry		
B-8	608.1	Dry	Dry	Dry		
B-9	585.2	Dry	Dry	Dry		
TP-10	585.0	Dry	Dry	Dry		
B-11	587.1	Dry	Dry	Dry		
B-12	577.1	Dry	Dry	Dry		
TP-13	595.7	Dry	Damp	4.8	Dry	3.0
TP-14	596.0	3.8	1.5	1.7	Dry	Dry
TP-15	590.1	Dry	3.3	3.5	Dry	Dry
TP-16	601.8	Dry	Damp	Dry		
TP-17	613.3	Dry	Dry	Dry		
TP-18	591.2				Dry	3.5
TP-19	590.4				Dry	0.5
TP-20	598.7				Dry	3.0
* From survey after drilling/excavating.						
** Measurement taken immediately after excavation/drilling.						





ECOLOGIC ASSOCIATES, P.C.
2007 Yanceyville Street, Ste. 223
Greensboro, NC 27405-5004
336-271-3093 • Fax 336-271-3094
ecologic@compuserve.com
www.ecologic-nc.com

May 19, 2000

Stormwater and General Permits Unit
Division of Water Quality
1617 Mail Service Center
Raleigh, NC 27699-1617

**RE: NCG120000 Notice of Intent
Carolina Resource Recovery, Mebane, NC**

Dear Madams and Sirs:

On behalf of Steven S. Scott of Mebane, NC, EcoLogic Associates, P.C. is submitting the enclosed Notice of Intent, NPDES application for coverage under General Permit NCG120000 for landfills permitted by the NC Division of Waste Management. The landfill permit is pending from DENR's Winston-Salem Regional Office (Mr. Tim Jewett, (336) 771-4608, x204), with only a few minor technical issues remaining, including evidence of conformance with DWQ's NPDES program. Thus, the permitting processes must necessarily proceed concurrently.

In addition to the requisite application, fee and vicinity map, we are enclosing a copy of the approved Erosion and Sediment Control Plan for the proposed facility, which graphically depicts the site development plan and the location of best management practices proposed for implementation. Please let us know at your earliest convenience if additional information is needed. We look forward to your response.

Sincerely,

A handwritten signature in black ink that reads "Mark A. Taylor" followed by a horizontal line.

Mark A. Taylor, PE, CPESC
Project Manager

C: Steven S. Scott
Tim Jewett, DWM, WSRO, NCDENR
Cory Basinger, DWQ, WSRO, NCDENR

Enclosures



Division of Water Quality / Water Quality Section

National Pollutant Discharge Elimination System

NCG120000

FOR AGENCY USE ONLY		
Date Received		
Year	Month	Day
Certificate of Coverage		
N	C	G
Check #	Amount	
Permit Assigned to		

NOTICE OF INTENT

National Pollutant Discharge Elimination System application for coverage under General Permit NCG120000:

STORMWATER DISCHARGES associated with activities classified as:

Landfills that are permitted by the North Carolina Division of Waste Management under the provisions and requirements of North Carolina General Statute 130A - 294

The following activities are specifically excluded from coverage under this General Permit:

- Stormwater discharges from open dumps, hazardous waste disposal sites, or discharge of waste (including leachate) to the waters of the state.

(Please print or type)

1) Mailing address of owner/operator:

Name Steven S. Scott
 Street Address 3285 Jones Dr.
 City Mebane State NC ZIP Code 27302
 Telephone No. 919 563-3469 Fax: 919 563-6335

* Address to which all permit correspondence will be mailed

2) Location of facility producing discharge:

Facility Name Carolina Resource Recovery
 Facility Contact Steven Scott
 Street Address 3287 Jones Dr.
 City Mebane State NC ZIP Code 27302
 County Alamance
 Telephone No. _____ Fax: _____

3) Physical Location Information:

Please provide a narrative description of how to get to the facility (use street names, state road numbers, and distance and direction from a roadway intersection). West side of Jones Dr. approximately 1 mile north of intersection with Mebane Oaks Rd.

(A copy of a county map or USGS quad sheet with facility clearly located on the map is required to be submitted with this application)

4) This NPDES Permit Application applies to which of the following :

- New or Proposed Facility Date operation is to begin June, 2000
 Existing

5) Standard Industrial Classification:

Provide the 4 digit Standard Industrial Classification Code (SIC Code) that describes the primary industrial activity at this facility

SIC Code: 4 9 5 3 Also 5261

6) Provide a brief narrative description of the types of industrial activities and products manufactured at this facility: Receipt of land clearing and inert debris for landfilling and recycling into mulch, compost, and topsoil.

7) Discharge points / Receiving waters:

How many discharge points (ditches, pipes, channels, etc.) convey stormwater from the property? 1
What is the name of the body or bodies of water (creek, stream, river, lake, etc.) that the facility stormwater discharges end up in? Tributary A to Haw Creek
If the site stormwater discharges to a separate storm sewer system, name the operator of the separate storm sewer system (e.g. City of Raleigh municipal storm sewer). N.A.

8) Does this facility have any other NPDES permits?

- No
- Yes

If yes, list the permit numbers for all current NPDES permits for this facility: _____

9) Does this facility have any Non-Discharge permits (ex: recycle permits)?

- No
- Yes

If yes, list the permit numbers for all current Non-Discharge permits for this facility: _____

10) Does this facility employ any best management practices for stormwater control?

- No
- Yes

If yes, please briefly describe: Grassed swales, buffer strips

11) Does this facility have a Stormwater Pollution Prevention Plan?

- No
- Yes

If yes, when was it implemented? _____

12) Are vehicle maintenance activities occurring at this facility?

- No
- Yes. Only if break downs; otherwise, off-site.

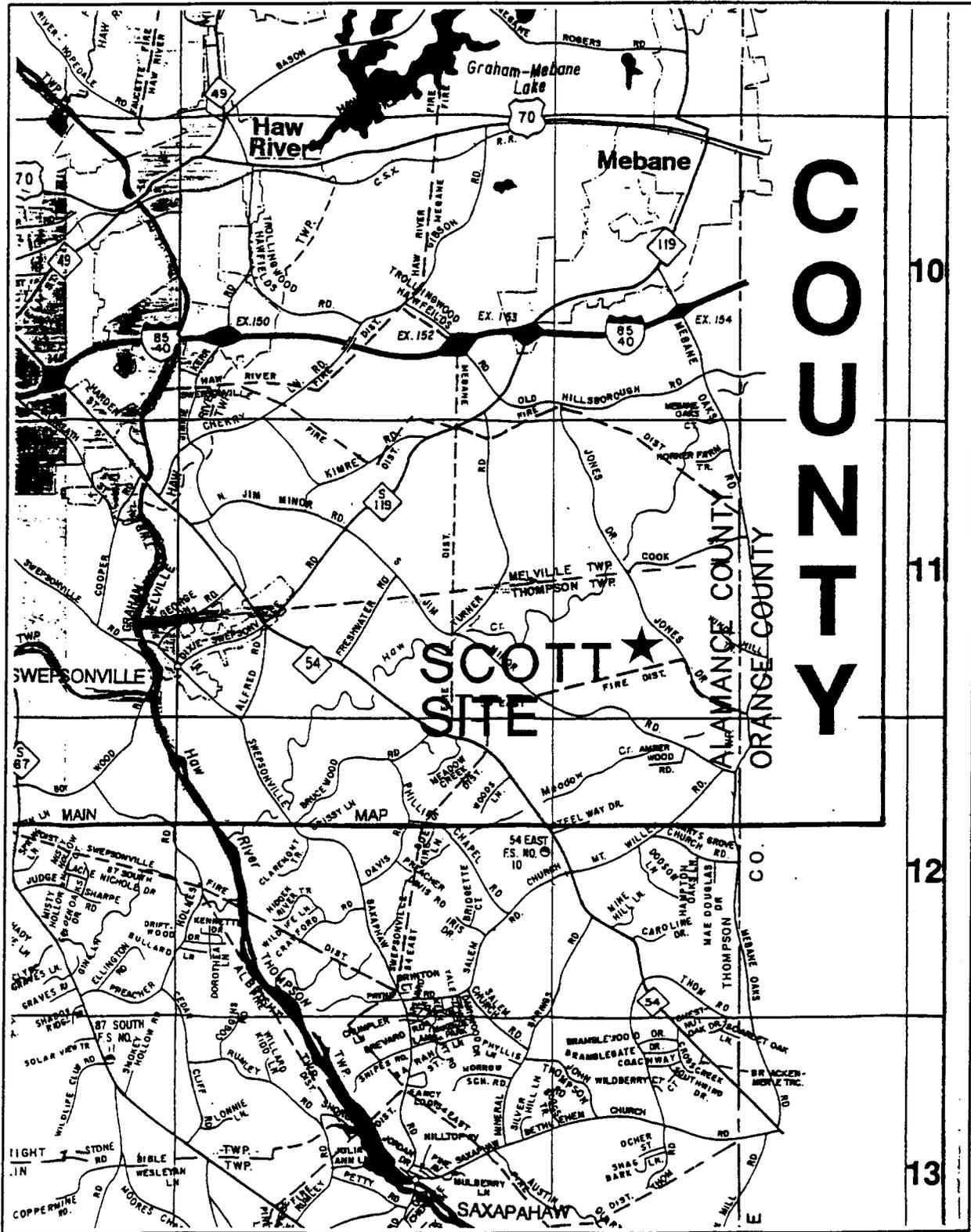
13) Hazardous Waste:

- a) Is this facility a Hazardous Waste Treatment, Storage, or Disposal Facility?
 No Yes
- b) Is this facility a Small Quantity Generator (less than 1000 kg. of hazardous waste generated per calendar year) of hazardous waste?
 No Yes
- c) Is this facility a Large Quantity Generator (1000 kg. or more of hazardous waste generated per calendar year) of hazardous waste?
 No Yes

d) If you answered yes to questions b. or c., please provide the following information:

Type(s) of waste: _____
How is material stored: _____

SITE VICINITY MAP



DIVISION OF LAND RESOURCES
LAND QUALITY SECTION

April 20, 2000



JAMES B. HUNT JR.
GOVERNOR

LETTER OF APPROVAL

Mr. Steven Scott
3285 Jones Drive
Mebane, NC 27302

Dear Mr. Scott:

This office has reviewed the subject erosion and sedimentation control plan. We find the plan to be acceptable and hereby issue this Letter of Approval. The enclosed Certificate of Approval must be posted at the job site. This plan approval shall expire three (3) years following the date of approval, if no land-disturbing activity has been undertaken, as is required by Title 15A NCAC 4B .0029.

Please be advised that Title 15 NCAC 4B.0018 (a) requires that a copy of the approved erosion control plan be on file at the job site. Also, you should consider this letter to give the notice required by GS 113A-61.1 (a) of our right of periodic inspection to insure compliance with the approved plan.

North Carolina's Sedimentation Pollution Control Program is performance-oriented, requiring protection of existing natural resources and adjoining properties. If, following the commencement of this project, it is determined that the erosion and sedimentation control plan is inadequate to meet the requirements of the Sedimentation and Pollution Control Act of 1973 (North Carolina General Statute 113A-51 through 66), this office may require revisions to the plan and implementation of the revisions to insure compliance with the Act.

Acceptance and approval of this plan is conditioned upon your compliance with Federal and State water quality laws, regulations, and rules. In addition, local city or county ordinances or rules may also apply to this land-disturbing activity. This approval does not supersede any other permit or approval.

LETTER OF APPROVAL - Mr. Steven Scott
April 20, 2000

2

Please note that this approval is based in part on the accuracy of the information provided in the Financial Responsibility Form which you have provided. You are requested to file an amended form if there is any change in the information included on the form. In addition, it would be helpful if you notify this office of the proposed starting date for this project. Please notify us if you plan to have a preconstruction conference, and we will plan to attend.

Your cooperation is appreciated, and we look forward to working with you on this project.

Sincerely,



T. Gray Hauser, Jr., E.I.
Assistant Regional Engineer

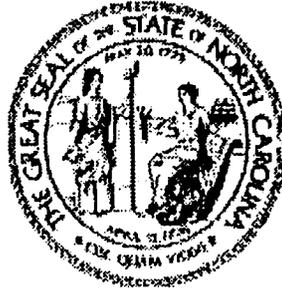
TGH/grh

Enclosure: Certificate of Approval
NPDES

cc: EcoLogic Associates, PC; WSRO File

PROJECT NAME:	Carolina Resource Recovery
COUNTY:	Alamance
RIVER BASIN:	Cape Fear
WATER CLASSIFICATION:	Other
FACILITY NUMBER:	ALAMA-2000-013
SUBMITTED BY:	EcoLogic Associates, PC
DATE RECEIVED BY L.Q.S.:	March 22, 2000
NEW SUBMITTAL (x)	

CERTIFICATE OF PLAN APPROVAL



The posting of this certificate certifies that an erosion and sedimentation control plan has been approved for this project by the North Carolina Department of Environment and Natural Resources in accordance with North Carolina General Statute 113A - 57 (4) and 113A - 54 (d) (4) and North Carolina Administrative Code, Title 15A, Chapter 4B.0007 (c). This certificate must be posted at the primary entrance of the job site before construction begins and until establishment of permanent groundcover as required by North Carolina Administrative Code, Title 15A, Chapter 4B.0027 (b).

Carolina Resource Recovery, Alamance County
Project Name and Location

April 20, 2000
Date of Plan Approval



S. Gray Halloway
Asst. Regional Engineer

OPERATING PLAN

CAROLINA RESOURCE RECOVERY

COMPOSTING FACILITY

MEBANE, NORTH CAROLINA

June 2000 (Revision 1)

Prepared for:

Steven S. Scott
Mebane, North Carolina

Prepared by:



EcoLogic Associates, P.C.
2007 Yanceyville St., Suite 223
Greensboro, North Carolina 27405

OPERATING PLAN
CAROLINA RESOURCE RECOVERY COMPOSTING FACILITY
Mebane, NC

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CRR Composting Facility Operating Plan

I. Facility Overview

Steven S. Scott, Owner and <u>Operator</u>	919- 563-3469	Office
Emergency Contact (24 Hours)	TBA	
Swepsonville Fire Dept.	336-578-1500	Fire Station
FIRE/RESCUE EMERGENCIES	911	Fire/EMS

Site Personnel:

- Composting Supervisor:** Supervises site operations and site personnel under the direction of the General Manager.
- Gate Attendant:** Controls access, records transactions and directs vehicles.
- Equipment Operators:** Operate equipment associated with composting operations.
- Technicians:** Perform labor and monitoring tasks at the site.

The Carolina Resource Recovery facility ("the facility") will include a large Type I composting facility along with land clearing and inert debris (LCID) treatment and processing and disposal (landfill) operations. The overall operational goal of the facility is to complement the integrated landscape products production and distribution operations of Scott Sand & Stone, Inc. The desired product of the composting facility is high quality compost for blending with inorganic soil and for bulk sale to landscapers and contractors for direct application to soils in need of organic amendment.

These goals will be accomplished by the removal, processing, decomposition, refining and use/sale of the organic portion of the land-clearing and inert debris waste stream, commonly referred to as "wood and yard wastes". It is the intent of the facility to accept land-clearing and inert debris, yard waste, uncontaminated pallets and other acceptable wood from residential and commercial generators for recycling. A process flow diagram of the facility is provided as Figure 3.

II. Operations Overview

A. Hours of Operation

The facility will have scheduled hours of operation as follows:

Monday through Friday	7:00 am - 6:00 pm
Saturday	7:00 am - 12:00 pm
Sunday	Closed

B. Receiving

All vehicles entering the facility will be stopped and recorded, with the hauler name, vehicle type and size, and type of waste materials noted. The gate attendant will then direct the vehicle driver to the appropriate off-loading area (i.e. wood processing area, inert debris processing area, etc.). The gate attendant will notify the appropriate facility employee to allow inspection of materials as they are being off-loaded. The visual inspection will ensure that received materials are compatible with the intent and goals of the facility (see "Acceptable Materials", Section III. A). Those materials not acceptable at the facility shall be handled as outlined in Section III. B.

C. Staging and Processing

The staging area will be that portion of the facility so designated (see Design Plan) for the off-loading and temporary storage of incoming materials. The treatment and processing area will be used for the storage of organic wastes prior to grinding, processing materials, i.e., grinding of wood, separation of inert debris and large wood items, refining of compost, etc. These areas will be constructed and maintained to allow good access and use in various weather conditions to facilitate the uninterrupted use of the facility.

D. High Rate Decomposition

The first stage of composting will be accomplished in open, aerated windrows. The construction and maintenance of the windrows shall be as described in Section III. C. The windrows will be constructed in the designated composting area (see Figure 2). The windrows shall be constructed with varied feedstocks (variable C:N ratios) in combinations designed to assure a high quality, marketable compost product. Temperature and percent moisture will be monitored and turning will be employed as needed to maintain aerobic conditions and suitable elevated temperatures to expedite composting (thermophilic decomposition), reduce odors, and reduce pathogens. This stage should take about 2 to 6 weeks.

E. Stabilization

The stabilizing of fresh compost to produce mature compost will be provided for as dictated by market demands. Stabilization is the gradual reduction of microbial activity in the presence of moisture and aeration, and is accomplished by continuing the aerated windrow composting process under the same controlled conditions as in the first stage. Thus, stabilization will be performed in the original windrows if required. Since the target market is consumers of bulk quantities of blended soils and/or compost for soil amendment, a highly stabilized compost product is not envisioned. The degree of stabilization achieved may also depend on demand versus production rates. The stabilization stage should take up to an additional 4 to 8 weeks.

F. Refining, Curing, and Quality Control

The compost will be refined by screening to remove oversize particles and foreign material and improve the consistency and quality of the final product. Screening will normally occur in the treatment and processing area as the compost is transferred from the windrows to the final storage area (see Design Plan). Oversize material will be run back through the process or utilized as mulch. Foreign matter will be disposed of in the on-site LCID landfill if the waste

is an acceptable waste (see Design Plan) or in an appropriate permitted off-site facility. Curing will be effected in the final storage area if and only if additional humification is desired to satisfy market demands.

Quality control will consist of regular measurement of temperature and percent moisture and periodic manual/visual inspection for particle size and the presence of foreign material. It may also occasionally include measurement of particle size and gradation, pH, biochemical oxygen demand (BOD), heavy metals and/or phytotoxins.

G. Storage and Load-Out

In the storage and load-out area, market-ready compost will be stockpiled until sale. The storage and load-out area shall be maintained to facilitate stormwater drainage and allow easy access and movement of equipment for loading. Trucks arriving at the facility to load compost shall check in at the gatehouse. The gate attendant will direct trucks to the storage and load-out area and notify the facility staff of the need to load product. The loaded vehicles will then return to the gatehouse for checkout. At time of checkout, each new customer will be provided a copy of the Compost Product Information Sheet (see attached exhibit).

H. Product Use and Marketability

It is the intent of the facility to develop products that have the attributes desired for use as a soil amendment in landscaping projects, parks, golf courses, highway right-of-ways and beautification projects. Carolina Resource Recovery intends to blend soils for sale to landscaping contractors. In addition, commercial landscapers and private citizens will be able to purchase the compost directly. The established market contacts of Scott Sand & Stone, Inc., a landscape materials supplier owned by the proposed facility's owner, will be instrumental in developing and sustaining markets for the finished products.

Given the intended use of the compost, market sensitivity to quality is not expected to be as great as if the compost was to be marketed as a mature compost product for retail sale.

Thus, lack of demand due to poor quality is considered a minimal risk. In the event of changed market conditions resulting in declining demand for the product, on-site storage can be maximized, limits on operating hours and/or intake quantity can be imposed, and/or incoming organic waste can be landfilled in the facility's on-site LCID landfill for permanent disposal or future recovery and composting.

III. Operating Procedures

The purpose of this section is to establish the standard operating procedures for managing materials and producing compost at the facility. These procedures may be refined or modified as experience is gained with the facility and the process.

A. Acceptable Materials

The facility is designed as a Type 1 wood and yard waste composting facility. Acceptable materials shall include land clearing waste, untreated and unpainted wood waste, uncontaminated pallets, yard and garden waste (leaves, grass, brush, limbs), silvicultural waste, and other biodegradable organic wastes determined to be suitable for the composting process and acceptable to NC DENR.

B. Receipt and Preparation of Materials

The gate attendant will make a visual check of incoming loads prior to receipt, under normal conditions, for those loads not coming from a familiar source. Any non-conforming/unauthorized materials shall not be allowed to off-load. The gate attendant will be knowledgeable of approved disposal options for various non-conforming/unauthorized materials, and drivers with such materials will be directed to an appropriate disposal location.

Upon receipt, the materials shall be off-loaded at the staging area, or in the case of high inflow, at the treatment and processing area, which will serve as an overflow area. When possible, loads will be examined for contaminants, nonconforming and/or unauthorized

CRR Composting Facility Operating Plan

materials as they are dumped and spread. Any nonconforming and/or unauthorized materials found during off-loading shall be reloaded into the delivery vehicle.

In the event non-conforming/unauthorized wastes are discovered in the staging/processing area, those materials shall be separated by the facility staff. A location shall be established in the staging, storage and load-out area (see Drawing 4) for the temporary storage of those materials that cannot be legally or practically disposed of in the on-site LCID landfill. Facility personnel shall be responsible for the loading and transporting of such materials to an appropriate and properly permitted disposal facility.

The preparation of incoming wastes will consist of grinding, screening and mixing of stumps, wood waste, brush, leaves, etc. This preparation will be performed in the treatment and processing area (see Design Plan). The facility staff will be responsible for preparation of the materials in a manner suitable for introduction as compost feedstocks.

Grass clippings shall be incorporated into windrows and turned within 48 hours of on-site arrival. This will reduce the potential for odors and increase space available in the staging area for incoming materials.

C. Windrow Composting

The windrows will be constructed in the designated composting area (see Figure 2). The windrows shall be constructed with varied feedstocks (variable C:N ratios) in combinations designed to assure a high quality, marketable compost product. Temperature and percent moisture will be monitored and turning will be employed as needed to maintain aerobic conditions and suitable elevated temperatures to expedite composting (thermophilic decomposition), reduce odors, and reduce pathogens. This stage should take about 2 to 4 weeks.

1. Feedstock Properties

The feedstock raw materials are assumed to be brush and stumps, land-clearing debris, yard trash including grass and plant clippings, silvicultural wastes, and clean wood waste such as pallets. Leaf wastes may be expected in the fall and Christmas trees in January. Stumps may contain a large amount of soil, which will be screened out before composting.

The carbon:nitrogen ratio (C:N) of the feedstocks is a critical factor affecting the rate of decomposition. Different feedstocks will contain different amounts of decomposable carbon and nitrogen. High carbon waste such as wood is sometimes called "brown waste", while high nitrogen waste such as fresh grass clippings is sometimes called "green waste." During windrow construction, the layering of feedstocks should be designed to result in a mixture having a suitable carbon:nitrogen ratio. The C:N ratio should ideally be in the 25:1 to 40:1 range. The average carbon:nitrogen ratios for some typical feedstock materials are as follows:

<u>Waste Material</u>	<u>C:N Ratio</u>
Wood Chips	800:1
Sawdust	400:1
Straw	100:1
Leaves (dry)	90:1
Leaves (fresh)	40:1
Grass Clippings	20:1

The initial carbon:nitrogen ratio of the feedstock should be adjusted to a maximum of about 40:1 to provide sufficient nitrogen nutrients for vigorous composting, and a minimum of about 25:1 to minimize ammonia formation and other odors. As compost matures, reductions in C:N to 10-15:1 may result as carbon is released during the humification process. The use of partially composted materials as a layered feedstock is permissible. Such material would

have a lower C:N ratio and thus would act as an inoculant of nitrogen to reduce the C:N ratio of brown waste feedstocks. For example, materials that have been in the composting process 3 to 6 weeks might be layered into a new windrow of leaves and wood chips to lower the C:N ratio and thus increase the initial decomposition rate. Urea and ammonium nitrate are other convenient sources of nitrogen that could be used as inoculum to lower the initial C:N ratio; however, they must be used with care to avoid excessive addition that could result in ammonia formation. If such inoculum are used, they will be added at the time of initial layering of the feedstocks or during aeration to assure thorough mixing.

The chemical property pH is the measure of acidity/alkalinity. The correct pH balance plays an important role in the composting process. The pH balance affects the quantity of nutrients available to support the microbial activity. The closer the compost mixture is to neutral (pH = 7), the more efficient the composting process will be, thus a pH in the range of 6 to 8 is desired. Lime can be used as an additive to the feedstock layers if necessary to increase pH levels.

The particle size of feedstocks also affects the rate of decomposition. Small particle sizes provide more surface area for microbial activity which results in a rapid decomposition rate. Particle size reduction also results in feedstock volume reduction. Small particle sizes must be balanced by the need to have voids between particles (air space) for oxygen to access the microorganisms. Thus, blending of feedstocks to ensure a good distribution (gradation) of particle sizes is needed to promote oxygen availability and microbial activity.

2. Placement

The windrows will be constructed in the composting area as shown on Figure 2. The windrows will be approximately 8 to 10 feet wide by 5 to 7 feet high at the center and will be triangular or trapezoidal in cross-section. They will be spaced at 25 feet on center to provide a 15-foot corridor between windrows for placement and turning operations. The windrows will be constructed using layered feedstocks as necessary to optimize carbon:nitrogen (C:N) ratios.

The prepared materials will be placed in the windrows either by dump trucks off-loading in a continuous length dumping method or by a front-end loader. The first layer of feedstock may range in depth from 12 to 60 inches depending on the percentage and number of feedstocks being used to generate the desired type of compost. Where multiple layers are employed, the feedstock for the second and subsequent layers shall be placed by a front-end loader.

During and/or after layering of the feedstocks, the equipment operator will mix the layered feedstocks in the windrow. After mixing, the front-end loader will create the desired windrow size and shape. Care must be taken not to compact the feedstocks during placement and/or shaping in order to maintain a porous, fluffed pile.

3. Moisture Modification

Control of the amount of water in the composting material is a critical element in achieving optimum aerobic composting results. The microbes (bacteria) responsible for the aerobic decomposition process need appropriate quantities of water, oxygen and nutrients to accomplish humification. The amount of moisture in the windrow (percent moisture) should be maintained between 45 and 60 percent. (Percent moisture = weight of water in moist compost ÷ moist (total) weight of compost) Percents moisture outside these limits will cause a reduction in microbial activity, slowing the composting process.

During the initial layering of the feedstocks, it is preferable to know the percents moisture of the various feedstocks. This will enable the proper moisture level to be attained throughout the windrow during its construction. Make-up water should be applied as needed during the layering of feedstocks to promote uniform moisture distribution during mixing and in such a manner as to prevent runoff. Make-up water will be pumped from a spring-fed farm pond located about 600 feet south of the composting area on land owned by the facility owner. Application will be by hose with an adjustable nozzle capable of providing a fine spray.

Once the composting process begins, increased temperature and subsequent turning (aeration) will cause a substantial loss of moisture. Measurement of compost percent

moisture in the windrows at least weekly will determine the need for water addition during subsequent turnings. Turning of the piles with a front-end loader will be done in such a way as to thoroughly mix make-up water uniformly with the compost and to prevent runoff.

The exposed windrows will allow some rain to infiltrate the compost and increase the percent moisture. The facility staff must be aware of current moisture conditions and forecasted weather when determining the need for moisture modification of the windrows. Maintaining a triangular cross-sectional shape of the windrow will help reduce rainfall infiltration when moisture conditions are high-normal or excessive. More frequent turning may be required in such cases to promote drying.

The grade of the composting area must be maintained to promote rapid drainage of stormwater runoff. Ponding of water in the composting area should not be allowed to occur.

4. Aeration (Turning)

Aeration of the composting materials is necessary for aerobic biological processes. Aeration provides compost oxygenation, helps ensure process stability, and enables temperature control. Insufficient aeration can result in elevated temperatures that retard microbiological activity (slow the decomposition process). In addition, the compost may go anaerobic (lack of oxygen), a condition that causes noxious odors and can produce plant toxins. Excessive aeration, on the other hand, accelerates heat removal and increases evaporation, which can also result in a reduced rate of decomposition. Thus, the proper frequency and extent of aeration (turning) is critical to an efficient composting process, in terms of both temperature control and oxygenation. The physical mixing during turning also breaks up air channels and clumps, blends materials from top to bottom in the windrow, and provides for uniform microbial activity. Compost temperature can also be controlled by windrow size.

Aeration and turning will be accomplished with a front-end loader. The loader bucket shall be raised to its maximum height, then emptied gradually so as to promote cascading of the compost to maximize aeration. If and when the throughput of the facility justifies the

expense, a compost turner may be employed. The frequency of turning will be dictated by temperature and moisture conditions as well as odor, if it should occur.

In order to maintain a high rate of decomposition, the temperature should be controlled to be within the range of 45 to 55 degrees C (113 to 131 degrees F). For destruction of pathogens, however, the temperature of the compost must be allowed to remain above 55 degrees C (131 degrees F) for at least three (3) days, and the compost must be aerated during that time to maintain the elevated temperature and expose all of the compost to it (15A NCAC 13B .1406(10)). This process also inactivates most weed seeds. Then, the temperature will be lowered to within the range for optimum decomposition (45 to 55 °C).

Care should be taken to not let the compost temperature climb above 70 degrees C (158 degrees F) because microbial activity is sharply reduced at that point. At temperatures above 80 degrees C (176 degrees F), sterilization of the microbes can occur, completely stopping the composting process until recolonization occurs. Caution should also be exercised to not allow mixing of compost materials that have undergone pathogen and weed seed destruction with those that haven't, either in the windrows or in equipment or vehicles used to process or transport the compost.

D. Compost Stabilization

Since the target market is consumers of bulk quantities of blended soils and/or compost for soil amendment, a highly stabilized compost product is not envisioned. The degree of stabilization achieved may also depend on demand versus production rates. The stabilization stage, if employed, should take up to an additional 4 weeks.

The stabilizing of fresh compost to produce mature compost will be provided for as dictated by market demands. Stabilization is the gradual reduction of microbial activity in the presence of moisture and aeration, and is accomplished by continuing the aerated windrow composting process under the same controlled conditions as in the first stage. Thus, stabilization will be performed in the original windrows if required. Combining windrows of

similar age may facilitate the stabilizing process. This will also maximize the space utilization of the compost area.

E. Refining and Curing

The compost will be refined by screening to remove oversize particles and foreign material and improve the consistency and quality of the final product. Prior to refining the compost, the addition of moisture to the windrows will be discontinued to interrupt microbial activity and allow the compost to cool and dry to a consistency suitable for screening.

Screening will normally occur in the treatment and processing area as the compost is transferred from the windrows to the final storage area (see Design Plan). If compost is transferred to the final storage area without screening, screening shall occur prior to load-out of compost for sale and use. Oversize material will be run back through the process or utilized as mulch. Foreign matter will be disposed of in the landfill (see Figure 3 and Design Plan).

Curing will be effected in the staging, storage and load-out area if and only if additional humification is desired to satisfy market demands. As such, curing will be accomplished in static piles or windrows so that aerobic conditions, temperature and percent moisture can be monitored and managed.

F. Quality Control

The Composting Supervisor will be the responsible party for achieving and maintaining quality control standards in the composting process. The temperature in the windrows will be monitored and recorded at least 3 times per week, 48 hours apart to confirm the achievement and duration of elevated temperature (at least 55 degrees C (131 degrees F) for 72 hours). Temperature will be measured manually by inserting a long-stem thermometer 18 to 36 inches into the piles at various locations no more than 50 feet apart. Percent moisture and pH in the windrows will be monitored at least bi-weekly to assess the need for moisture

and/or lime addition. Moisture and pH monitoring will utilize oven-drying (moisture content on percent total weight basis) and slurry testing (pH) of samples taken from the windrows no more than 200 feet apart. These tests will provide data to compare with the target limits (45 to 60 percent moisture and $6 < \text{pH} < 8$).

Random, periodic manual/visual inspections of refined compost will be made for particle size verification and the presence of foreign material. Particle size distribution will be based on customer demand, but in no case shall man-made inerts be allowed to exceed 1 inch. These manual/visual inspections will also allow assessment and confirmation that the compost product is free from offensive odor and contains no sharp particles that would cause injury to persons handling the compost.

Quality control may also occasionally include measurement of particle size and gradation, pH, biochemical oxygen demand (BOD), heavy metals and/or phytotoxins as needed to satisfy quality control and production issues, customer needs and/or regulatory concerns.

G. Odor, Dust, Noise and Vector Control

The facility shall be operated utilizing procedures that will minimize odor, dust, noise and vectors.

Grass clippings will likely present the biggest potential odor problem at the facility. Grass clippings and other green wastes begin decomposing quickly and may go "anaerobic", creating foul odor. Odors may also be released during mixing or turning of the windrows. Several steps will be taken to control odor problems, namely:

1. Grass will be processed and turned into windrows within 48 hours of arrival at the staging area;
2. Windrows will be aerated frequently;
3. Wind should be minimal or blowing away from neighbors when compost turning occurs (whenever feasible);

CRR Composting Facility Operating Plan

4. Large natural buffers will be maintained, including berms as needed, to help minimize odor effects on neighbors; and
5. When windrows are deemed to be in the anaerobic state, lime may be applied to return pH to near neutral.

Dust will be controlled by the application of water spray, both on the compost in the windrows and on the facility roads during hot, dry weather. The application of make-up water to the compost during turning, to modify (increase) the percent moisture, should alleviate most problems with dust in the active composting area. In the refining process, a water mist may be needed on the screen and/or conveyor to control dust from the finer fraction during agitation. Waste screening and windrow turning may be postponed during periods of high wind to reduce dusting.

Noise is not expected to be a problem given the nature of the proposed operation and the relative isolation of the site. Only a few pieces of conventional heavy equipment are proposed to operate at the facility, with the exception of a tub grinder that will operate in the adjacent treatment and processing area 2 or 3 days every 6 to 10 weeks. The facility is situated on the south side of the 59-acre site, opposite the low-density residential development to the north. The land to the south of the site (125 acres) is owned and occupied by Scott Sand & Stone, Inc., a landscape materials supplier owned by the proposed facility's owner, thus, noise will not be a concern there. Land to the east and west is mostly wooded and/or cultivated, i.e., undeveloped.

Regarding vectors, the facility staff shall maintain proper drainage and minimize standing water to reduce the potential for mosquito breeding. The wastes being processed and handled are not likely to attract vectors since they are not putrescible.

H. Operations in Inclement Weather

The waste types accepted and processed at the facility are not especially moisture sensitive and will not generate leachate, so inclement weather presents no particular challenges

beyond road maintenance to maintain access and moisture and temperature control in the compost windrows (see Sections II.C.3 and 4). Windrow construction and turning may be postponed during periods of wet and/or very cold weather to avoid disruptions to the composting process. Similarly, waste screening and windrow construction and turning may be postponed during periods of high wind to reduce dusting and maintain site orderliness.

I. Record Keeping and Reporting

The gate attendant will maintain daily records of waste received, by type, quantity (vehicle size and percent full) and source. The record will also indicate the disposition of the waste, i.e., direct resale, processing only before sale, processing for compost, or landfill.

The Composting Supervisor shall be the responsible party for recording information for each windrow constructed. The windrow report will contain the following, with date and time noted for each entry: 1) quantity and types of feedstocks and layering scheme, 2) percent moisture at time of windrow construction, from periodic moisture content tests of windrow samples and the approximate location of sampling points, and before subsequent modifications if more than 48 hours has elapsed, 3) initial temperature of the windrow (48 to 72 hours after construction), periodic temperatures of windrow and the approximate location of testing points, 4) date of each turning of windrow, 5) date when windrows are combined, if done, 6) length of composting period, 7) analytical results from compost testing, and 8) comments or general notes on types and origin of wastes processed, processing, weather, final disposition of compost product; etc.

The facility staff should maintain a daily calendar where notations of weather conditions and other relevant information can be recorded. This information will be used in comparing and analyzing windrow reports for processing rates, moisture variations, volume reduction and compost quality.

An annual report will be prepared and submitted to the Division of Waste Management for the period July 1 to June 30 each year on or before August 1. The report will document the total

CRR Composting Facility Operating Plan

quantity and types of waste received, including waste received from local governments, and the quantities of compost and mulch produced and sold. It will also document temperature monitoring results to demonstrate compliance with pathogen destruction criteria. For reporting on a weight basis, processed volumes will be converted using a factor of 500 pounds per cubic yard (0.25 tons/CY).

The annual report will follow the following general outline:

- (1) Facility name, address, and permit number;
- (2) Total quantity, in tons, and type(s) of waste received at the facility, including waste received from local governments;
- (3) Total quantity, in tons, and type(s) of waste processed into compost;
- (4) Total quantity, in tons, and type(s) of compost produced at the facility, by product classification;
- (5) Total quantity, in tons, and type(s) of compost removed for use or disposal from the facility, by product classification, along with a general description of the market;
- (6) Summary of temperature monitoring, by month; and
- (7) Results of any analytical tests performed.

IV. Equipment

The following equipment is planned for use at the facility. Additional equipment and vehicles are available at Scott Sand & Stone (contiguous site) for use at the facility as needed.

1980 Fiat Allis 345-B Loader

Ford 555-B Loader

1988 Dresser 520B Wheel Loader

1997 John Deere 5300 Tractor with 540 Loader

1999 Extec Screener with vibrating grid and stacking conveyor

V. Security, Safety and Fire

A. Security

The facility will be a restricted access facility. As a restricted access facility, there are posted hours of operation. Customers will be allowed to use the facility only during the posted hours unless special arrangements are made with the Facility Manager.

To prevent access during non-operational hours, fencing and/or gates shall be installed at all potential points of vehicle access. Security of the facility shall be aided by the strategic placement of lights to discourage theft, vandalism and other nuisance behavior.

B. Safety

The safety of personnel and users of the facility shall be a high priority. Safety practices shall encompass all people working, delivering materials, or receiving finished product at the facility. The operation shall be conducted in compliance with all applicable state and federal OSHA standards. Telephone numbers of emergency agencies shall be prominently displayed, and all staff shall be familiar with those numbers and the location of telephones. In the event of injury, OSHA guidelines shall be followed to ensure the proper response and reporting of incidents.

Equipment shall be used in the manner described in the owner's manual, with special attention to safety features and safe operating guidelines. The facility staff shall maintain equipment in safe operating condition. The staff will be familiar with and follow the equipment manufacturers' recommendations for the safe use and maintenance of the equipment.

C. Fire

The aerobic composting process is exothermic, i.e., heat is generated by the high rate decomposition process. If excessive heat develops in the presence of flammable feedstocks,

the potential exists for occasional fires. The facility personnel shall be trained in basic on-site fire response procedures and shall have access to heavy equipment (see Section IV above), water and extinguishers to aid in the early suppression of fire. Emergency (911) and fire station telephone numbers shall be posted at the gatehouse and by all on-site telephones. Fire suppression may include isolating and spreading burning material, application of water or chemical suppressant, and/or covering with soil.

The facility design and operation shall allow access and movement of emergency fire fighting equipment at all times. Fire lanes 20 feet wide will be provided around the facility perimeter and intermittently within the composting area (See Figure 2). Prior to commencing facility operations, a pre-plan site meeting will be held with the Swepsonville Fire Department to finalize the emergency plan. The facility management shall arrange periodic fire drills to train and ready site personnel for proper response. All occurrences of fire shall be reported to and reviewed by the Swepsonville Fire Department so that procedures can be established to prevent the reoccurrence of similar circumstance. Fire shall be reported to the Division of Waste Management and others as required by the permit.

CAROLINA RESOURCE RECOVERY

COMPOST PRODUCT INFORMATION SHEET

GRADE: The compost you have purchased is **GRADE A COMPOST** derived from recycled yard waste, land-clearing debris (trees, brush and stumps), and other biodegradable organic wastes approved by the North Carolina Department of the Environment and Natural Resources, Division of Waste Management.

RECOMMENDED USES: Use as a *SOIL AMENDMENT* to add humic (organic) matter, improve soil texture and drainage, increase rainfall infiltration and water retention, increase biological activity, and encourage seedling emergence and root growth. Can also be used as a *MULCH* to reduce soil erosion and moisture evaporation, moderate soil temperatures, encourage seed germination, and suppress weed growth.

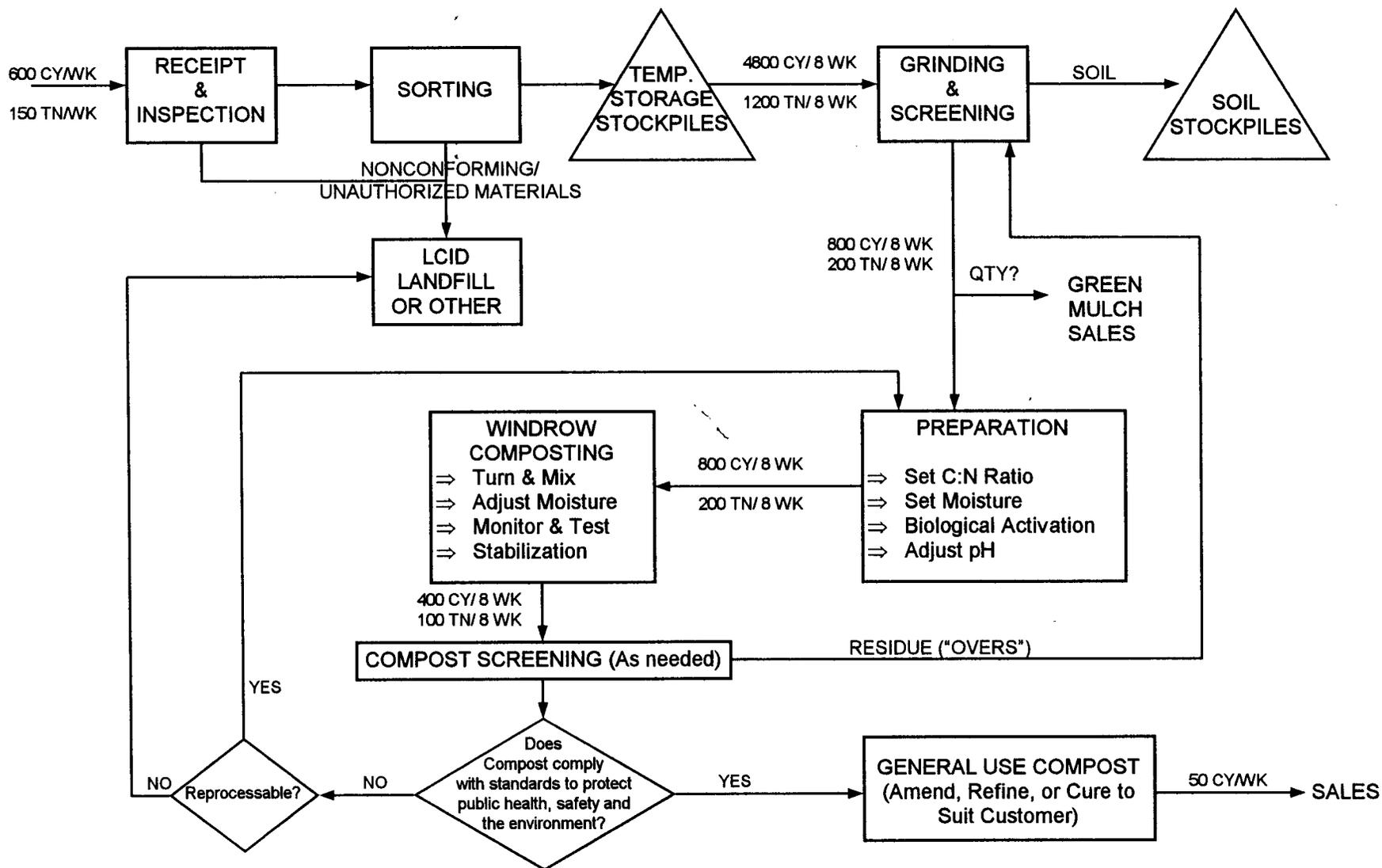
APPLICATION RATES: As a soil amendment, spread to no more than 3 inches depth at a time prior to mixing and repeat until the desired organic content is attained. As a mulch, spread to desired thickness (3 inches minimum recommended); secure if necessary with netting, roving or pegs and twine.

THERE ARE NO RESTRICTIONS ON THE USE OF THIS PRODUCT.

CAROLINA RESOURCE RECOVERY

3285 Jones Drive

Mebane, NC 27302

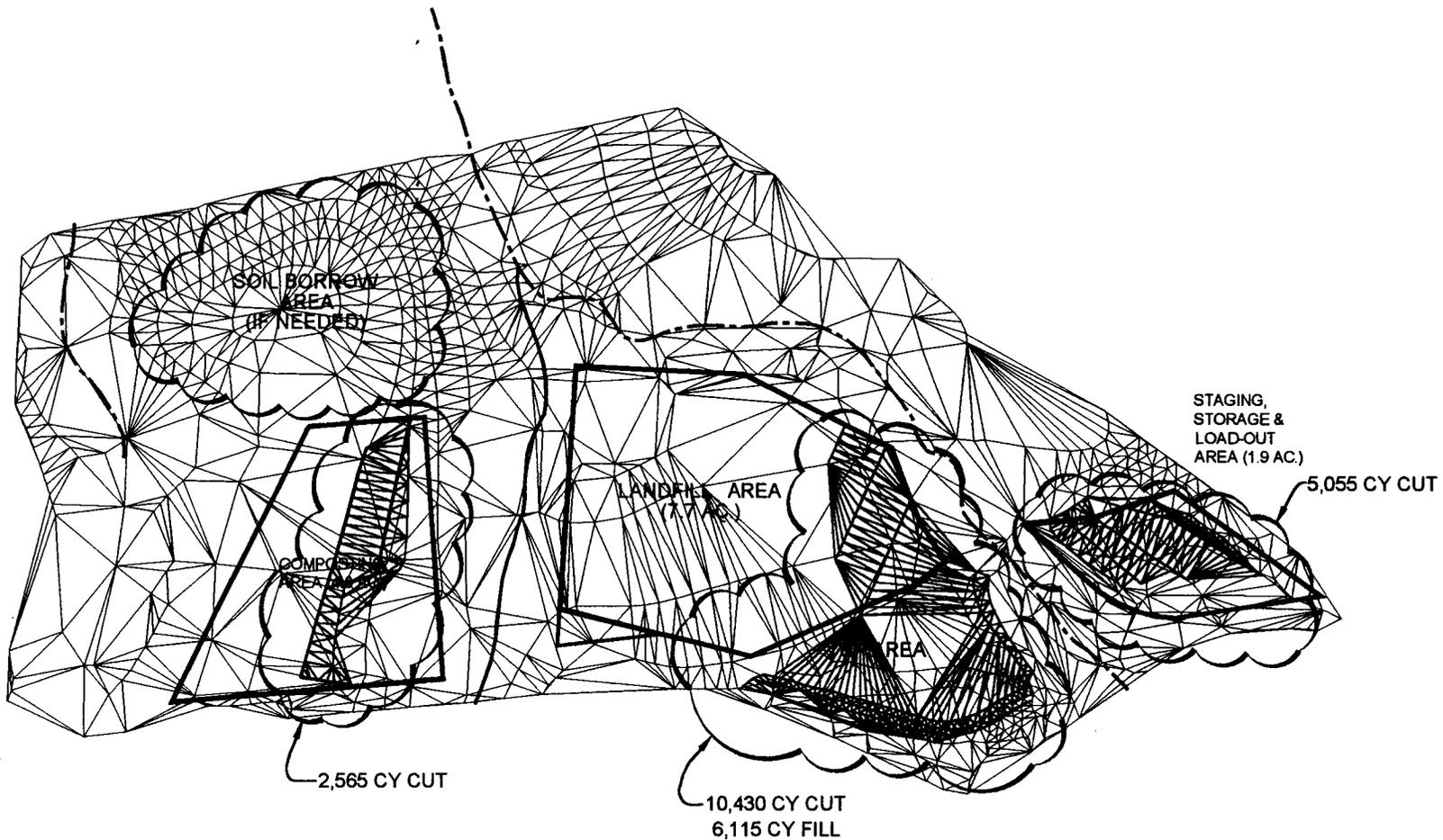


**CAROLINA RESOURCE RECOVERY COMPOST FACILITY
ORGANIC WASTE FLOW DIAGRAM**

June 2000

FIGURE 3

EcoLogic Associates, P.C.



**CAROLINA RESOURCE RECOVERY COMPOST FACILITY
SOIL USE DIAGRAM**

June 2000

FIGURE 4

Ecologic Associates, P.C.

APPLICATION FOR PERMIT TO CONSTRUCT AND OPERATE

**CAROLINA RESOURCE RECOVERY
Mebane, NC**

DRAWINGS SUBMITTED SEPARATELY

- Drawing 1 Cover Sheet
- Drawing 2 Aerial Photo
- Drawing 3 1/4-Mile Radius Map
- Drawing 4 Design Plan
- Drawing 5 Cross Sections
- Drawing 6 Erosion and Sediment Control Plan
- Drawing 7 Erosion and Sediment Control Details

APPLICATION FOR PERMIT TO CONSTRUCT AND OPERATE

**CAROLINA RESOURCE RECOVERY
Mebane, NC**

APPENDIX

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Ret-ent D&H \$3.00

ALAMANCE COUNTY NC 10/06/97
1
\$3.00



Real Estate
Excise Tax

This Deed was prepared at the request of the Grantor based upon information and property description provided by the Grantor and without title examination, survey, or verification of property description.

Instrument Prepared By:

JOHN H. VERNON, III
Vernon, Vernon, Woolen, Brown, Andrews & Garrett, P A
P.O. Box 2958, Burlington, NC 27216-2958

NORTH CAROLINA
ALAMANCE COUNTY

QUITCLAIM DEED

THIS DEED made as of the 29th day of September, 1997 by and between HANFORD BRICK COMPANY, INC., a Corporation organized under the laws of the State of North Carolina, whose address is P.O. Box 1215, Burlington, NC 27216-1215, (the "Grantor") and STEVEN S. SCOTT, whose address is 3285 James Road, Mebane, NC 27302 (the "Grantee"). The designations Grantor and Grantee as used herein shall respectively include said parties, their heirs, successors and assigns.

WITNESSETH THAT the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has remised and released and by these presents does remise, release, forever quitclaim and convey unto the Grantee all of the Grantor's right, title, claim and interest in and to all of the real property located in Alamance County, North Carolina described on Exhibit "A" attached hereto and made a part hereof.

TO HAVE AND TO HOLD the above described real property and all privileges and appurtenances thereto belonging to the Grantee free and discharged from all right, title, claim or interest of the Grantor or anyone claiming by, through or under it.

IN WITNESS WHEREOF, the Grantor has caused this instrument to be signed in its corporate name by its duly authorized officers and its seal affixed by authority of its Board of Directors, the day and year first above written.



ATTEST:

Jeffrey C. Smith
SECRETARY/ASSISTANT
SECRETARY

HANFORD BRICK COMPANY, INC.

BY: James E. Hanford
JAMES E HANFORD, PRESIDENT

STATE OF NORTH CAROLINA
COUNTY OF ALAMANCE

I, Donna A. Crabtree, a Notary Public for the above State and County, do hereby certify that JEFFREY C. SMITH personally appeared before me this day and acknowledged that he is Secretary/~~Assistant Secretary~~ of HANFORD BRICK COMPANY, INC., a corporation and that by authority duly given and as the act of the corporation the foregoing Deed was signed in its name by its President, sealed with its corporate seal and attested by himself as its Secretary/~~Assistant Secretary~~.

Witness my hand and notarial seal this the 29 day of Sept, 1997.

Donna A. Crabtree
Notary Public

My Commission Expires



"Exhibit A"

Tract 1: A certain tract or parcel of land lying and being in Thompson Township, Alamance County, North Carolina, more particularly bounded and described as follows:

BEGINNING at a Hickory a common corner between Paul Terrell and Woodrow James and H. A. Scott and running thence with the line of H. A. Scott and Woodrow James, South 54° 51' East 1,555.62 ft. to an iron pipe, said pipe being a common corner between Woodrow James, M. G. Sutton and H. A. Scott; thence South 33° 34' East 116 ft. to an iron pipe; thence South 20° 28' 30" East 75 ft. to an iron pipe; thence South 84° 14' 30" West 311.8 ft. to an iron pipe; thence South 56° 45' West 563.97 ft. to an iron pipe; thence North 65° 36' West 399.34 ft. to an iron pipe; thence North 76° 06' West 256.97 ft. to an iron pipe; thence South 84° 53' West 1,349.95 ft. to an iron pipe in the line between Paul Terrell and H. A. Scott; thence with the line of Paul Terrell and H. A. Scott, North 01° 52' East 1,023.76 ft. to an iron pipe; thence continuing with the line of H. A. Scott and Paul Terrell, North 75° 35' East 1,368.87 ft. to the point and place of BEGINNING. Said tract containing 57.85 acres, more or less.

Tract 2: That certain tract or parcel of land in Thompson Township, Alamance County, North Carolina, adjoining the lands of Woodrow James, Margaret W. Scott, M. G. Sutton and County Road, bounded and described as follows:

BEGINNING at an iron stake, corner with Woodrow James, Margaret W. Scott and M. G. Sutton; running thence with the line of said Sutton and Scott, S. 33 deg. 34' E. 116 feet; thence S. 20 deg. 28' 30" E. 75 feet; thence N. 84 deg. 14' 30" E. 104.50 feet to the center line of County Road No. 2131; thence with the center line of said County Road, N. 7 deg. 04' W. 322.26 feet to a point, corner in the line between Woodrow James and M. G. Sutton; thence S. 43 deg. 26' W. 225 feet to the BEGINNING, containing 0.84 of an acre, more or less. The above description was obtained from a plat and survey made by Wachter Surveys, Inc., Greensboro, N.C., March, 1963.

FILED

State of North Carolina Alamance County

The foregoing certificate of

Wanda Crabtree

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A Notary (Notaries) Public of the Designated Governmental units is (are) certified to be correct

This the 6 day of Oct 1987

NADINE S. FUQUA Lucy Williams

Register of Deeds By Assistant/Deputy

'97 OCT -6 19:25su

NADINE S. FUQUA
REGISTER OF DEEDS
ALAMANCE COUNTY, NC

ALAMANCE COUNTY
OFFICE OF THE FIRE MARSHAL

D. Drew Sharpe

Emergency Management Coordinator

Fire Marshal

February 18, 2000

EcoLogic Associates, P. C.
Mark A. Taylor, Project Manager
2007 Yanceyville Street, Ste, 223
Greensboro, NC 27405-5004

Dear Mr. Taylor:

Per your request, Scott Sand & Stone is located in the 54 East Fire District. Fire protection for this location is provided by the Swepsonville Fire Department.

A major issue/concern of land-clearing debris fires is that it takes a tremendous amount of water and heavy equipment to handle fires in the debris piles. You need to develop an emergency plan for this facility so that early notifications of a fire can be reported and handled in a most timely manner. Also, good accessibility to the piles for fire-fighting equipment is a must. Having a track-hoe, or this type of equipment, on the scene helps to break the pile up if you have a fire. You will also need to send the emergency contacts numbers to the Swepsonville Fire Department, as well as to our office. When you get ready to start the operations, you will need to have the Swepsonville Fire Department come to the site and pre-plan this facility.

If you have any other questions or if I can be of further assistance, please do not hesitate to call me.

Yours truly,



Jerry A. Beckom
Asst. EM Coord./Chemical Planner

JAB:jr

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

August 12, 1999



JAMES B. HUNT JR.
GOVERNOR

WAYNE McDEVITT
SECRETARY

DR. PHILIP K. MCKENNELLY
DIRECTOR

Mr. Mark A. Taylor PE
EcoLogic Construction Inc.
2007 Yanceyville Street, Ste 223
Greensboro, NC 27405-5004

SUBJECT: Rare Species, High Quality Natural Communities, and
Significant Natural Heritage Areas at the Proposed LCID
Landfill Site at SR2131, Mebane, Alamance County, North
Carolina

Dear Mr. Taylor:

The NC Natural Heritage Program (NCNHP) does not have a record of rare species, high quality natural communities, state park and recreation areas, or Significant Natural Heritage Areas at or within a 1.0 mile radius of the proposed LCID landfill site on SR 2131 near Mebane, Alamance County, North Carolina. However, because Alamance County has not been systematically inventoried, this is not a definitive statement that rare species do not exist in the area.

Enclosed is a list of rare species known to exist in Alamance County. If habitat for any of these species exists at the site, they may be present there. Consultant acquired knowledge of the existing habitat should determine if a survey is necessary.

The new NHP web site provides county lists of rare species and high quality natural communities. Access to site records of element occurrences is not available. In the future it is hoped that quad lists of EO's will be available but that may be a while. The new web address: ils.unc.edu/parkproject/nhp/index.html

Please do not hesitate to contact me at the address below or call me at (919) 715-8703 if you have any questions or need further information.

Sincerely,

Susan Reece Giles
Information Specialist
Natural Heritage Program

Enclosure

27699-1615

GLOBAL		STATE	FED.	STATE	
SCIENTIFIC NAME	COMMON NAME	STATUS	STATUS	RANK	RANK
Alamance-Current					
Invertebrate Animal					
Strophitus undulatus	Squawfoot	T	-	S2S3	G5
Villosa constricta	Notched Rainbow	SR (PSC)	-	S3	G3G4
Villosa delumbis	Eastern Creekshell	SR	-	S3	G4
Vascular Plant					
Phacelia covillei	Buttercup Phacelia	C	-	S2	G2?Q
Natural Community					
Basic Mesic Forest (Piedmont Subtype)	-	-	-	S2	G5T3
Basic Oak--Hickory Forest	-	-	-	S3	G4
Upland Depression Swamp Forest	-	-	-	S2	G3
Xeric Hardpan Forest	-	-	-	S3	G3G4
Alamance-Historic					
Invertebrate Animal					
Lampsilis cariosa	Yellow Lampmussei	T (PE)	FSC	S1	G3G4
Vascular Plant					
Aster laevis var concinnus	Narrow-leaved Aster	C	-	S2	G5T4
Berberis canadensis	American Barberry	SR	-	S2	G3
Collinsonia tuberosa	Piedmont Horsebalm	C	-	S1	G3G4
Alamance-Obscure					
Vertebrate Animal					
Hemidactylum scutatatum	Four-toed Salamander	SC	-	S3	G5
Lanius ludovicianus ludovicianus	Loggerhead Shrike	SC	-	S3B, S3N	G5T5
Vascular Plant					
Monotropis odorata	Sweet Pinesap	C	FSC	S3	G3

NC NATURAL HERITAGE PROGRAM COUNTY STATUS LIST COVER SHEET

The county status list of the NC Natural Heritage Program is a listing of the elements of natural diversity (rare plant and animal species, exemplary natural communities, and special animal habitats) known to occur in all North Carolina counties. The information on which this list is based comes from a variety of sources, including field surveys, museums, herbaria, scientific literature, and personal communications. This list is dynamic, with new records continually being added and old records being revised as new information is received. As a result, the enclosed list cannot be considered a definitive record of natural heritage elements present in a given county and should not be used as a substitute for field surveys.

When this information is used in any document, we request that the date this list was compiled be given and that the NC Natural Heritage Program be credited.

STATE STATUS

CODE	STATUS	CODE	STATUS
E	Endangered	SR	Significantly Rare
T	Threatened	EX	Extirpated
SC	Special Concern	D	De-listed
C	Candidate	P	Proposed (E, T, SC, EX or D)

Plant statuses are determined by the Plant Conservation Program (NC Department of Agriculture) and the Natural Heritage Program (NC Department of Environment and Natural Resources). E, T, and SC species are protected by state law (Plant Protection and Conservation Act, 1979). C and SR designations indicate rarity and the need for population monitoring and conservation action. Note that some plants have a double status (e.g., E-SC, indicates that while the plant is endangered, it is collected or sold under regulation). See the *Natural Heritage Program List of the Rare Plant Species of North Carolina* for further explanation of these statuses.

Animal statuses that indicate state protection (E, T, and SC) are published in *Endangered Wildlife of North Carolina*, March 16, 1992, Nongame and Endangered Wildlife Program (NC Department of Environment and Natural Resources). SR and EX statuses are Natural Heritage Program designations. SR indicates rarity and the need for population monitoring and conservation action. See the *Natural Heritage Program List of the Rare Animal Species of North Carolina* for further explanation of these statuses.

FEDERAL STATUS

These statuses are designated by the US Fish and Wildlife Service. Federally listed Endangered and Threatened species are protected under the provisions of the Endangered Species Act of 1973, as amended through the 100th Congress. Unless otherwise noted, definitions are taken from the *Federal Register*, Vol. 56, No. 225, November 21, 1991 (50 CFR Part 17).

CODE	STATUS	DEFINITION
LE	Endangered	A taxon "in danger of extinction throughout all of a significant portion of its range."
LT	Threatened	A taxon "likely to become an endangered species within the foreseeable future throughout all of a significant portion of its range."
C	Candidate	A taxon under consideration for which there is sufficient information to support listing. This category was formerly designated as a Candidate 1 (C1) species.
FSC		Federal "Species of Concern" (also called "Species at Risk"). Formerly defined as a taxon under consideration for which there is insufficient information to support listing; formerly designated as a Candidate 2 (C2) species. Currently, the US Fish and Wildlife Service does not recognize this as an official designation.
T(S/A)		Threatened due to Similarity of Appearance. The Endangered Species Act authorizes the treatment of a species (subspecies or population segment) as threatened even though it is not otherwise listed as threatened if: (a) The species so closely resembles in appearance a threatened species that enforcement personnel would have substantial difficulty in differentiating between the listed and unlisted species; (b) the effect of this substantial difficulty is an additional threat to a threatened species; and (c) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of the Act. The American Alligator has this designation due to similarity of appearance to other rare crocodylians. The Bog Turtle (southern population) has this designation due to similarity of appearance to Bog Turtles in the threatened northern population. Species has been proposed for de-listing.



North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

MAILING ADDRESS
4617 Mail Service Center
Raleigh, NC 27699-4617

LOCATION
507 North Blount Street
Raleigh, NC
State Courier 53-31-31

August 18, 1999

Mark A. Taylor, PE
Project Manager
Ecologic Construction, Inc.
2007 Yanceyville Street, Suite 223
Greensboro NC 27405-5004

Re: Prospective LCID Landfill Site, SR 2131, Alamance
County, ER 00-7250

Dear Mr. Taylor:

Thank you for your letter of July 27, 1999, concerning the above project.

We have conducted a review of the project and are aware of no properties of architectural, historic, or archaeological significance which would be affected by the project. Therefore, we have no comment on the project as currently proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

A handwritten signature in cursive script that reads "David Brook /w".

David Brook
Deputy State Historic Preservation Officer

DB:slw

cc: Jim Coffey, Solid Waste Section, Division of Waste Management



SPANGLER ENVIRONMENTAL, INC.

224 Fayetteville Street Mall, Suite 400
P.O. Box 387
Raleigh, NC 27602-0387

Telephone 919-546-0754
Fax 919-546-0757

October 4, 1999

Mr. Mark Taylor
Ecologic Assoc., P.C.
2007 Yanceyville St., Suite 223
Greensboro, NC 27405-5004

Re: Steve Scott Property- Wetland Assessment

Dear Mark:

On Friday, October 1, 1999, Spangler Environmental, Inc. personnel conducted a primary wetland assessment on a property, approximately 60 acres in size, owned by Steve Scott, near the Alamance/Orange County line. The finding of this initial site investigation is that potential jurisdictional waters (including wetlands) of the United States do exist on the property. Approximations of the location of these features are sketched on the attached map.

Both creeks that run adjacent to the previously mined area of the property exhibit features that would characterize them as being at least intermittent in nature, and therefore under the jurisdiction of the Corps of Engineers. There are two other streams on the property that are likely to be considered jurisdictional, but probably not to the full extent of the draws that appear in the topographic map. The first of these originates from under the road approximately 300 feet north of the site entrance. This stream is potentially jurisdictional for 100 to 200 feet upstream of its confluence with the previously mentioned intermittent stream. The second flows into the pond located north of the property. This stream is potentially jurisdictional for 300 to 400 feet upstream of the property line.

There are potential wetlands located on this site. A small pocket of wetlands exist near the far southwestern property corner. Other wetlands may exist in close proximity to the stream that runs around the west side of the old mine. Finally, wetlands may exist in the area labeled "drainage cut" for the mine. A large amount of standing water existed in the bottom of the mined area when the site visit occurred. This is not likely wetland, but a result of near-record rainfall amounts for the month of September.

It should be noted that this is an assessment of potential wetlands/waters of the US. Only the US Army Corps of Engineers has regulatory jurisdiction to declare the presence/absence and location of wetlands and waters of the US on this particular property. If activities are planned that could affect the presence/absence and/or location of these features on the property, a formal wetland delineation and permits to impact wetland/waters of the US would be required, based on a site or grading plan. Spangler Environmental can provide these services, as well as consultation on minimizing these impacts while maintaining the greatest amount of net usable land.

Sincerely,
Spangler Environmental, Inc.



Scott Linnenburger
Project Manager

Attachment- site map with sketched potential wetlands/waters of the US

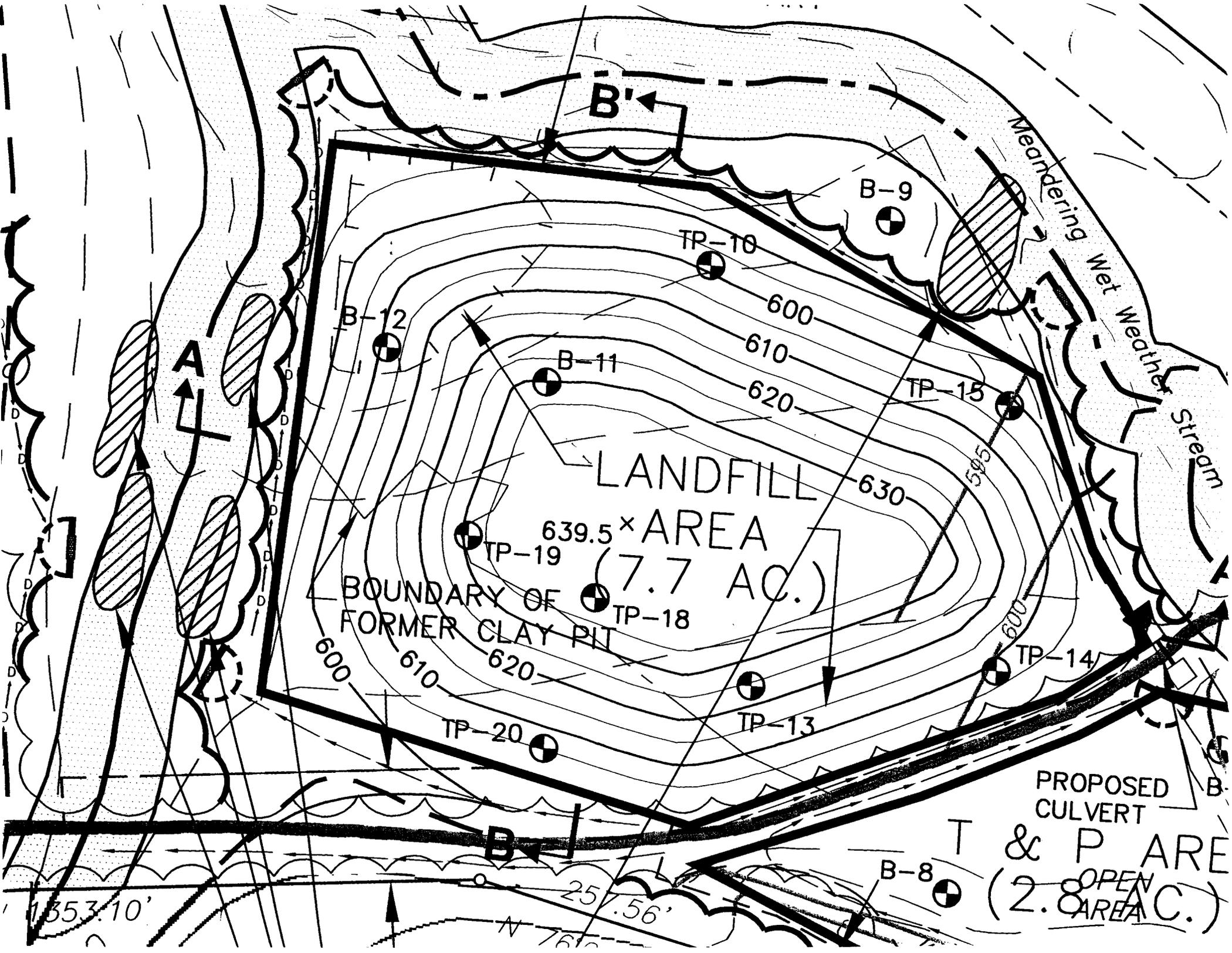
TEST BORING/PIT LOG

Near-surface Hydrogeologic Exploration Carolina Resource Recovery Mebane, NC

<u>Boring/TP</u>	<u>Depth (ft)</u>	<u>Soil Description</u>
B-1	2.7	Red-brown Fine Sandy SILT
B-2	2.8	Tan & Gray Fine Sandy SILT
B-3	2.7	Red-brown Fine Sandy SILT
B-4	3.2	Red-brown Fine Sandy SILT
B-5	3.0	Red & Light Gray Fine Sandy Clayey SILT
B-6	2.8	Red & Tan Fine Sandy Clayey SILT
B-7	2.7	Red & Tan Fine Sandy Clayey SILT
B-8	2.7	Red & Tan Fine Sandy Clayey SILT
B-9	2.8	Light Gray & Tan Fine Sandy SILT with gravel
TP-10	4.0	Tan & Gray Weathered Siltstone & Shale
B-11	2.3	Tan Fine Sandy SILT with gravel
B-12	2.9	Tan Fine Sandy SILT with gravel
TP-13	5.0	Tan & Gray Weathered Siltstone & Shale
TP-14	3.8	Tan & Gray Weathered Siltstone & Shale
TP-15	4.5	Tan & Gray Weathered Siltstone & Shale
TP-16	5.0	Red & Light Gray Fine Sandy Silty CLAY
TP-17	5.0	Red & Light Gray Fine Sandy Clayey SILT
TP-18	4.5	Tan & Gray Weathered Siltstone & Shale
TP-19	5.0	Tan & Gray Weathered Siltstone & Shale
TP-20	4.5	Tan & Gray Fine Sandy SILT

NOTE: Borings were drilled with a tractor-mounted auger attachment. Test pits were excavated with a rubber-tired backhoe. Borings drilled at locations 10 and 13 through 15 prior to excavating the test pits produced silt and gravel cuttings; therefore, weathered rock is also believed to occur at locations 9, 11 and 12. Field work done on 10/25/99 and 5/19/00 (TP 18-20).

GROUNDWATER OBSERVATIONS						
Near-surface Hydrogeologic Exploration Carolina Resource Recovery, Mebane, NC						
Depth to Groundwater (feet below ground surface)						
Boring/TP	GS Elev.*	10/25/99**	10/26/99	10/29/99	5/19/00**	6/5/00
B-1	621.3	Dry	Dry	Dry		
B-2	621.2	Dry	Dry	Dry		
B-3	618.0	Dry	Dry	Dry		
B-4	610.5	Dry	Dry	Dry		
B-5	606.7	Dry	Dry	Dry		
B-6	605.8	Dry	2.7	Damp		
B-7	612.2	Dry	Dry	Dry		
B-8	608.1	Dry	Dry	Dry		
B-9	585.2	Dry	Dry	Dry		
TP-10	585.0	Dry	Dry	Dry		
B-11	587.1	Dry	Dry	Dry		
B-12	577.1	Dry	Dry	Dry		
TP-13	595.7	Dry	Damp	4.8	Dry	3.0
TP-14	596.0	3.8	1.5	1.7	Dry	Dry
TP-15	590.1	Dry	3.3	3.5	Dry	Dry
TP-16	601.8	Dry	Damp	Dry		
TP-17	613.3	Dry	Dry	Dry		
TP-18	591.2				Dry	3.5
TP-19	590.4				Dry	0.5
TP-20	598.7				Dry	3.0
* From survey after drilling/excavating.						
** Measurement taken immediately after excavation/drilling.						



ALAMANCE COUNTY
Department of Administration
COUNTY OFFICE BUILDING
124 West Elm Street
Graham, North Carolina 27253

Telephone 228-1312
Area Code 336

Administrative Services

November 1, 1999

Mr. Mark A. Taylor, PE
Project Manager
EcoLogic Associates, P.C.
2007 Yanceyville Street
Suite 223
Greensboro, NC 27405-5004

**RE: Statement of Zoning and Watershed Compliance for Prospective LCID
Recycling/Landfill Site (Alamance County Tax Map #9-38, Parcel #44A)
Alamance County, NC**

Dear Mr. Taylor:

This letter is to certify that the above referenced property (owned by Mr. Steven Scott of Mebane, NC) is located within the jurisdiction of Alamance County. Alamance County does not currently have any zoning regulations. Also, this property is not located within any designated water supply watersheds.

If you have any questions, please call me at (336) 228-1312, ext. 259. Thank you.

Sincerely,



Tom King
Assistant Planning Director
Alamance County

CC: Correspondence File



EcoLogic Associates, P.C.
2007 Yanceyville Street, Ste. 223
Greensboro, NC 27405-5004
336-271-3093 • Fax 336-271-3094
ecologic@compuserve.com
www.ecologic-nc.com

May 19, 2000

Stormwater and General Permits Unit
Division of Water Quality
1617 Mail Service Center
Raleigh, NC 27699-1617

**RE: NCG120000 Notice of Intent
Carolina Resource Recovery, Mebane, NC**

Dear Madams and Sirs:

On behalf of Steven S. Scott of Mebane, NC, EcoLogic Associates, P.C. is submitting the enclosed Notice of Intent, NPDES application for coverage under General Permit NCG120000 for landfills permitted by the NC Division of Waste Management. The landfill permit is pending from DENR's Winston-Salem Regional Office (Mr. Tim Jewett, (336) 771-4608, x204), with only a few minor technical issues remaining, including evidence of conformance with DWQ's NPDES program. Thus, the permitting processes must necessarily proceed concurrently.

In addition to the requisite application, fee and vicinity map, we are enclosing a copy of the approved Erosion and Sediment Control Plan for the proposed facility, which graphically depicts the site development plan and the location of best management practices proposed for implementation. Please let us know at your earliest convenience if additional information is needed. We look forward to your response.

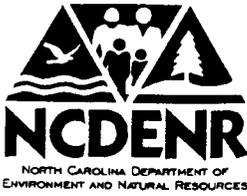
Sincerely,

A handwritten signature in black ink that reads "MARK A. TAYLOR" followed by a horizontal line.

Mark A. Taylor, PE, CPESC
Project Manager

C: Steven S. Scott
Tim Jewett, DWM, WSRO, NCDENR
Cory Basinger, DWQ, WSRO, NCDENR

Enclosures



Division of Water Quality / Water Quality Section

National Pollutant Discharge Elimination System

NCG120000

FOR AGENCY USE ONLY		
Date Received		
Year	Month	Day
Certificate of Coverage		
N	C	G
Check #	Amount	
Permit Assigned to		

NOTICE OF INTENT

National Pollutant Discharge Elimination System application for coverage under General Permit NCG120000:

STORMWATER DISCHARGES associated with activities classified as:

Landfills that are permitted by the North Carolina Division of Waste Management under the provisions and requirements of North Carolina General Statute 130A - 294

The following activities are specifically excluded from coverage under this General Permit:

- Stormwater discharges from open dumps, hazardous waste disposal sites, or discharge of waste (including leachate) to the waters of the state.

(Please print or type)

1) Mailing address of owner/operator:

Name Steven S. Scott
 Street Address 3285 Jones Dr.
 City Mebane State NC ZIP Code 27302
 Telephone No. 919 563-3469 Fax: 919 563-6335

* Address to which all permit correspondence will be mailed

2) Location of facility producing discharge:

Facility Name Carolina Resource Recovery
 Facility Contact Steven Scott
 Street Address 3287 Jones Dr.
 City Mebane State NC ZIP Code 27302
 County Alamance
 Telephone No. _____ Fax: _____

3) Physical Location Information:

Please provide a narrative description of how to get to the facility (use street names, state road numbers, and distance and direction from a roadway intersection). West side of Jones Dr. approximately 1 mile north of intersection with Mebane Oaks Rd.

(A copy of a county map or USGS quad sheet with facility clearly located on the map is required to be submitted with this application)

4) This NPDES Permit Application applies to which of the following :

- New or Proposed Facility Date operation is to begin June, 2000
 Existing

5) Standard Industrial Classification:

Provide the 4 digit Standard Industrial Classification Code (SIC Code) that describes the primary industrial activity at this facility

SIC Code: 4 9 5 3 Also 5261

6) Provide a brief narrative description of the types of industrial activities and products manufactured at this facility: Receipt of land clearing and inert debris for landfilling and recycling into mulch, compost, and topsoil.

7) Discharge points / Receiving waters:

How many discharge points (ditches, pipes, channels, etc.) convey stormwater from the property? 1
What is the name of the body or bodies of water (creek, stream, river, lake, etc.) that the facility stormwater discharges end up in? Tributary A to How Creek
If the site stormwater discharges to a separate storm sewer system, name the operator of the separate storm sewer system (e.g. City of Raleigh municipal storm sewer). N.A.

8) Does this facility have any other NPDES permits?

- No
- Yes

If yes, list the permit numbers for all current NPDES permits for this facility: _____

9) Does this facility have any Non-Discharge permits (ex: recycle permits)?

- No
- Yes

If yes, list the permit numbers for all current Non-Discharge permits for this facility: _____

10) Does this facility employ any best management practices for stormwater control?

- No
- Yes

If yes, please briefly describe: Grassed swales, buffer strips

11) Does this facility have a Stormwater Pollution Prevention Plan?

- No
- Yes

If yes, when was it implemented? _____

12) Are vehicle maintenance activities occurring at this facility?

- No
- Yes. Only if break downs; otherwise, off-site.

13) Hazardous Waste:

- a) Is this facility a Hazardous Waste Treatment, Storage, or Disposal Facility?
 No Yes
- b) Is this facility a Small Quantity Generator (less than 1000 kg. of hazardous waste generated per calendar year) of hazardous waste?
 No Yes
- c) Is this facility a Large Quantity Generator (1000 kg. or more of hazardous waste generated per calendar year) of hazardous waste?
 No Yes

d) If you answered yes to questions b. or c., please provide the following information:

Type(s) of waste: _____
How is material stored: _____

NCG120000 N.O.I.

Where is material stored: _____
How many disposal shipments per year: _____
Name of transport / disposal vendor: _____
Vendor address: _____

14) Certification:

North Carolina General Statute 143-215.6 b (i) provides that:

Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained under Article 21 or regulations of the Environmental Management Commission implementing that Article, or who falsifies, tampers with or knowingly renders inaccurate any recording or monitoring device or method required to be operated or maintained under Article 21 or regulations of the Environmental Management Commission implementing that Article, shall be guilty of a misdemeanor punishable by a fine not to exceed \$10,000, or by imprisonment not to exceed six months, or by both. (18 U.S.C. Section 1001 provides a punishment by a fine of not more than \$10,000 or imprisonment not more than 5 years, or both, for a similar offense.)

I hereby request coverage under the referenced General Permit. I understand that coverage under this permit will constitute the permit requirements for the discharge(s) and is enforceable in the same manner as an individual permit.

I certify that I am familiar with the information contained in this application and that to the best of my knowledge and belief such information is true, complete, and accurate.

Printed Name of Person Signing: Steven S. Scott
Title: OWNER
Steven S. Scott 5-18-00
(Signature of Applicant) (Date Signed)

Notice of Intent must be accompanied by a check or money order for \$80.00 made payable to:

NCDENR

Final Checklist

This application will be returned as incomplete unless all of the following items have been included:

- Check for \$80 made payable to NCDENR
- This completed application and all supporting documents
- Copy of county map or USGS quad sheet with location of facility clearly marked on map

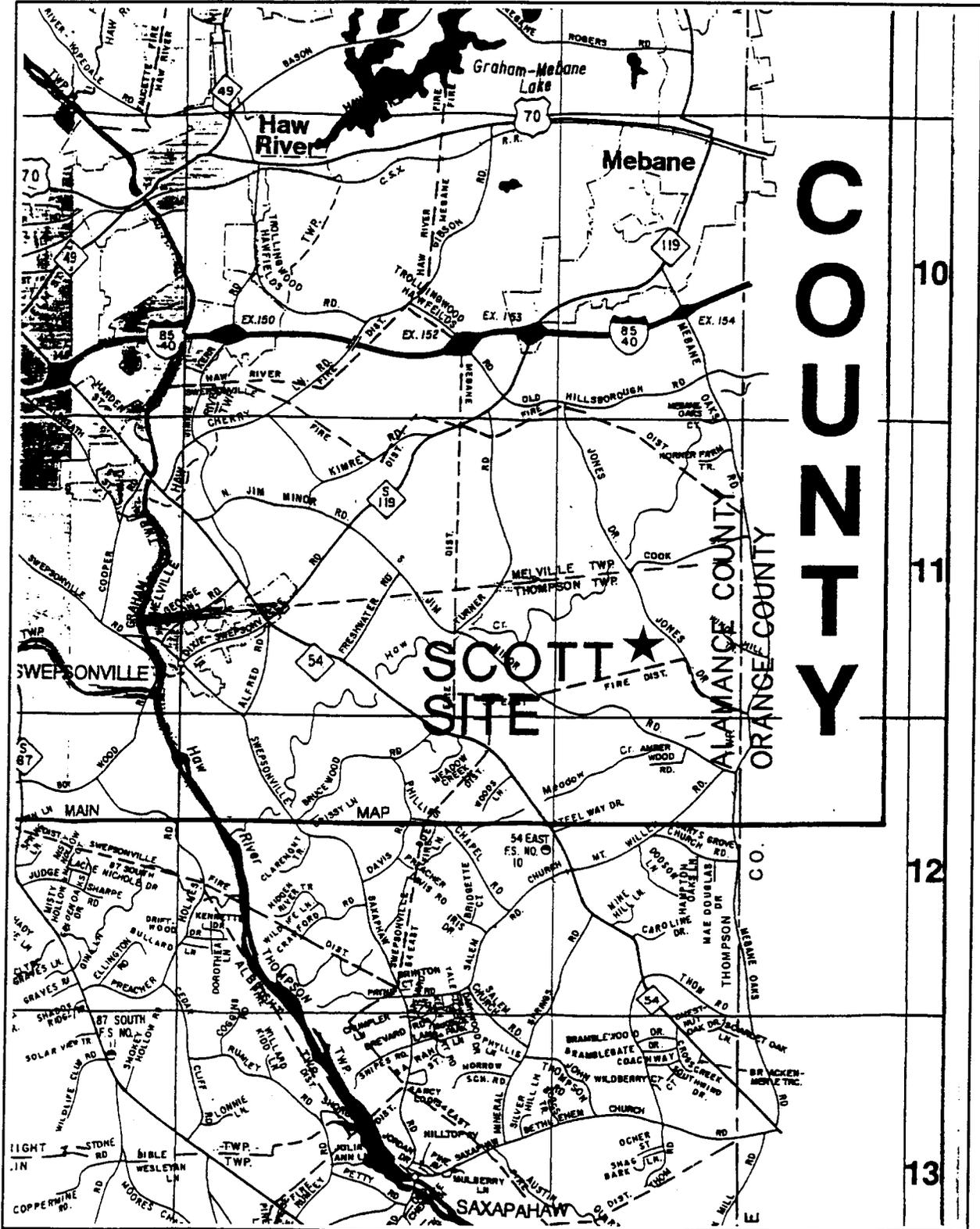
Mail the entire package to:

Stormwater and General Permits Unit
Division of Water Quality
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Note

The submission of this document does not guarantee the issuance of an NPDES permit.

SITE VICINITY MAP



DIVISION OF LAND RESOURCES
LAND QUALITY SECTION

April 20, 2000

JAMES B. HUNT JR.
GOVERNOR

LETTER OF APPROVAL

Mr. Steven Scott
3285 Jones Drive
Mebane, NC 27302

Dear Mr. Scott:

This office has reviewed the subject erosion and sedimentation control plan. We find the plan to be acceptable and hereby issue this Letter of Approval. The enclosed Certificate of Approval must be posted at the job site. This plan approval shall expire three (3) years following the date of approval, if no land-disturbing activity has been undertaken, as is required by Title 15A NCAC 4B .0029.

Please be advised that Title 15 NCAC 4B.0018 (a) requires that a copy of the approved erosion control plan be on file at the job site. Also, you should consider this letter to give the notice required by GS 113A-61.1 (a) of our right of periodic inspection to insure compliance with the approved plan.

North Carolina's Sedimentation Pollution Control Program is performance-oriented, requiring protection of existing natural resources and adjoining properties. If, following the commencement of this project, it is determined that the erosion and sedimentation control plan is inadequate to meet the requirements of the Sedimentation and Pollution Control Act of 1973 (North Carolina General Statute 113A-51 through 66), this office may require revisions to the plan and implementation of the revisions to insure compliance with the Act.

Acceptance and approval of this plan is conditioned upon your compliance with Federal and State water quality laws, regulations, and rules. In addition, local city or county ordinances or rules may also apply to this land-disturbing activity. This approval does not supersede any other permit or approval.

LETTER OF APPROVAL - Mr. Steven Scott
April 20, 2000

2

Please note that this approval is based in part on the accuracy of the information provided in the Financial Responsibility Form which you have provided. You are requested to file an amended form if there is any change in the information included on the form. In addition, it would be helpful if you notify this office of the proposed starting date for this project. Please notify us if you plan to have a preconstruction conference, and we will plan to attend.

Your cooperation is appreciated, and we look forward to working with you on this project.

Sincerely,



T. Gray Hauser, Jr., E.I.
Assistant Regional Engineer

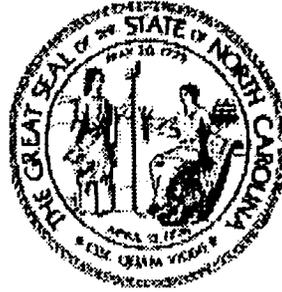
TGH/grh

Enclosure: Certificate of Approval
NPDES

cc: EcoLogic Associates, PC; WSRO File

PROJECT NAME:	Carolina Resource Recovery
COUNTY:	Alamance
RIVER BASIN:	Cape Fear
WATER CLASSIFICATION:	Other
FACILITY NUMBER:	ALAMA-2000-013
SUBMITTED BY:	EcoLogic Associates, PC
DATE RECEIVED BY L.Q.S.:	March 22, 2000
NEW SUBMITTAL (x)	

CERTIFICATE OF PLAN APPROVAL



The posting of this certificate certifies that an erosion and sedimentation control plan has been approved for this project by the North Carolina Department of Environment and Natural Resources in accordance with North Carolina General Statute 113A - 57 (4) and 113A - 54 (d) (4) and North Carolina Administrative Code, Title 15A, Chapter 4B.0007 (c). This certificate must be posted at the primary entrance of the job site before construction begins and until establishment of permanent groundcover as required by North Carolina Administrative Code, Title 15A, Chapter 4B.0027 (b).

Carolina Resource Recovery, Alamance County
Project Name and Location

April 20, 2000
Date of Plan Approval



S. Gray Harvey
Asst. Regional Engineer

8



EcoLogic Associates, P.C.
218-4 Swing Rd. • Greensboro, NC 27409
(336) 855-8108 • Fax (336) 855-7688
www.ecologic-nc.com

RECEIVED
N.C. Dept. of EHN
JUL 28 2000

FAX TRANSMITTAL

TO: *Tim Jewett*

FAX NO.: () 771-4651-Salem
Regional Office

DATE: *7-28-00*

SUBJECT: *Carolina Resource Recovery*

PAGES INC. COVER: *5*

Tim -
Faxing copy of transmittal to Ted Lyon of
CRR's stormwater permit.

Call if any questions.

PLEASE CALL IF THE ATTACHMENTS ARE NOT AS DESCRIBED ABOVE.

Sincerely,

Mark

EcoLogic Associates, P.C.



EcoLogic Associates, RC.
218-4 Swing Rd. • Greensboro, NC 27409
(336) 855-8108 • Fax (336) 855-7688
www.ecologic-nc.com

FAX TRANSMITTAL

TO: Ted Lyon

FAX NO.: (919) 733-4810

DATE: July 28, 2000

SUBJECT: Carolina Resource Recovery

PAGES INC. COVER: 4

Ted -

I recently received a copy of the stormwater permit issued by DWQ to Carolina Resource Recovery for the proposed solid waste facility in Mebane, NC. I am transmitting it with this cover letter. As discussed, this should provide you with the final documentation needed to issue permits for the proposed LCID treatment and processing and Type 1 composting operations.

My client is eager to receive the permits and begin operations. Please advise as to the anticipated issue date for the permits.

If I can be of further assistance or answer any questions, please feel free to call at your convenience. Please note that we have moved our office and have new telephone and fax numbers.

Thank you for your prompt attention to this request.

PLEASE CALL IF THE ATTACHMENTS ARE NOT AS DESCRIBED ABOVE.

Sincerely,

EcoLogic Associates, P.C.

A handwritten signature in black ink, appearing to read 'Mark A. Taylor'.

Mark A. Taylor, PE
Project Manager

C: Tim Jewett, WSRO
Steven Scott

State of North Carolina
Department of Environment
and Natural Resources
Division of Water Quality

James B. Hunt, Jr., Governor
Bill Holman, Secretary
Kerr T. Stevens, Director



July 14,2000

CAROLINA RESOURCE RECOVERY
ATTN: Steven Scott
3285 Jones Drive
Mebane, NC 27302

Subject: General Permit No. NCG120000
CAROLINA RESOURCE RECOVERY
COC NCG120063
Alamance County

Dear Mr. Scott:

In accordance with your application for discharge permit received on May 24, 2000 we are forwarding herewith the subject certificate of coverage to discharge under the subject state - NPDES general permit. This permit is issued pursuant to the requirements of North Carolina General Statute 143-215 .1 and the Memorandum of Agreement between North Carolina and the US Environmental Protection agency dated December 6, 1983.

If any parts, measurement frequencies or sampling requirements contained in this permit are unacceptable to you, you have the right to request an individual permit by submitting an individual permit application. Unless such demand is made, this certificate of coverage shall be final and binding.

Please take notice that this certificate of coverage is not transferable except after notice to the Division of Water Quality. The Division of Water Quality may require modification or revocation and reissuance of the certificate of coverage.

This permit does not affect the legal requirements to obtain other permits which may be required by the Division of Water Quality or permits required by the Division of Land Resources, Coastal Area Management Act or any other Federal or Local governmental permit that may be required.

If you have any questions concerning this permit, please contact Bill Mills at telephone number 919/733-5083 ext. 548.

ORIGINAL SIGNED BY
WILLIAM C. MILLS
ORIGINAL SIGNED BY
WILLIAM C. MILLS
For Kerr T. Stevens

cc: Winston Salem Regional Office
Central Files
Stormwater and General Permits Unit Files

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

GENERAL PERMIT NO. NCG120000
CERTIFICATE OF COVERAGE No. NCG120063

STORMWATER DISCHARGES

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provision of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

Carolina Resource Recovery

is hereby authorized to discharge stormwater from a facility located at

Carolina Resource Recovery
3287 Jones Drive
south of Hawfields
Alamance County

to receiving waters designated as an unnamed tributary to Haw Creek in the Cape Fear River Basin in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, IV, V, and VI of General Permit No. NCG120000 as attached.

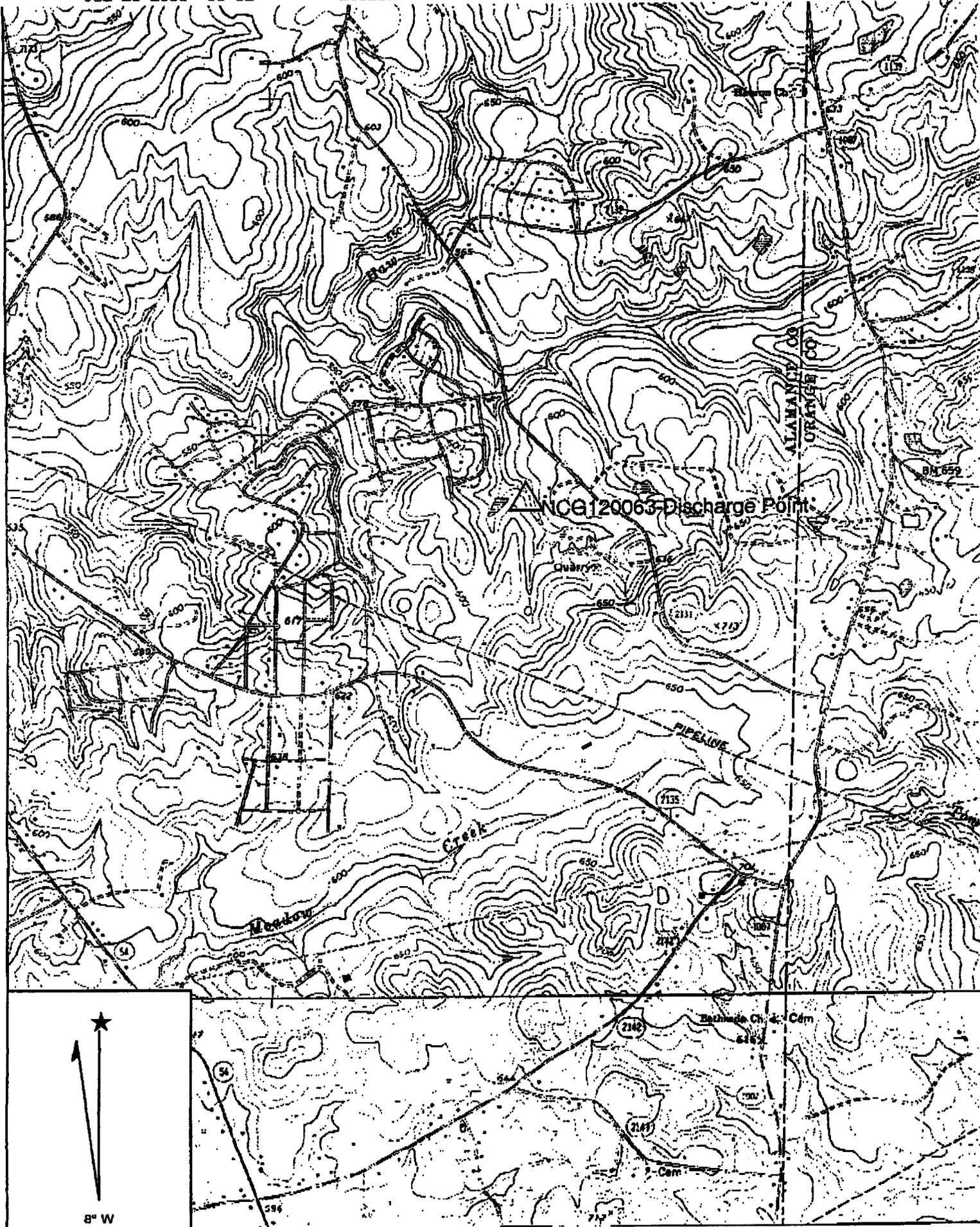
This certificate of coverage shall become effective July 14, 2000

This Certificate of Coverage shall remain in effect for the duration of the General Permit.

Signed this day July 14, 2000

ORIGINAL SIGNED BY
WILLIAM C. MILLS

for _____
Kerr T. Stevens, Director
Division of Water Quality
By Authority of the Environmental Management Commission



ALAMANCE CO
ORANGE CO

NCG120063-Discharge Point

Creek

PIPELINE

Meadow

Bechnede Ch. 4 Cern

2142

2141



8° W



EcoLogic Associates, P.C.
2007 Yanceyville Street, Ste. 223
Greensboro, NC 27405-5004
336-271-3093 • Fax 336-271-3094
ecologic@compuserve.com
www.ecologic-nc.com

May 19, 2000

Stormwater and General Permits Unit
Division of Water Quality
1617 Mail Service Center
Raleigh, NC 27699-1617

RECEIVED
N.C. Dept. of EHNR
MAY 22 2000
Winston-Salem
Regional Office

RE: NCG120000 Notice of Intent
Carolina Resource Recovery, Mebane, NC

Dear Madams and Sirs:

On behalf of Steven S. Scott of Mebane, NC, EcoLogic Associates, P.C. is submitting the enclosed Notice of Intent, NPDES application for coverage under General Permit NCG120000 for landfills permitted by the NC Division of Waste Management. The landfill permit is pending from DENR's Winston-Salem Regional Office (Mr. Tim Jewett, (336) 771-4608, x204), with only a few minor technical issues remaining, including evidence of conformance with DWQ's NPDES program. Thus, the permitting processes must necessarily proceed concurrently.

In addition to the requisite application, fee and vicinity map, we are enclosing a copy of the approved Erosion and Sediment Control Plan for the proposed facility, which graphically depicts the site development plan and the location of best management practices proposed for implementation. Please let us know at your earliest convenience if additional information is needed. We look forward to your response.

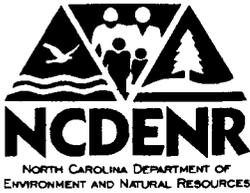
Sincerely,

A handwritten signature in black ink that reads 'MARK A. TAYLOR' followed by a horizontal line.

Mark A. Taylor, PE, CPESC
Project Manager

C: Steven S. Scott
✓Tim Jewett, DWM, WSRO, NCDENR
Cory Basinger, DWQ, WSRO, NCDENR

Enclosures



Division of Water Quality / Water Quality Section

National Pollutant Discharge Elimination System

NCG120000

FOR AGENCY USE ONLY		
Date Received		
Year	Month	Day
Certificate of Coverage		
N	C	G
Check #	Amount	
Permit Assigned to		

NOTICE OF INTENT

National Pollutant Discharge Elimination System application for coverage under General Permit NCG120000:

STORMWATER DISCHARGES associated with activities classified as:

Landfills that are permitted by the North Carolina Division of Waste Management under the provisions and requirements of North Carolina General Statute 130A - 294

The following activities are specifically excluded from coverage under this General Permit:

- Stormwater discharges from open dumps, hazardous waste disposal sites, or discharge of waste (including leachate) to the waters of the state.

(Please print or type)

1) Mailing address of owner/operator:

Name Steven S. Scott
 Street Address 3285 Jones Dr.
 City Mebane State NC ZIP Code 27302
 Telephone No. 919 563-3469 Fax: 919 563-6335

* Address to which all permit correspondence will be mailed

2) Location of facility producing discharge:

Facility Name Carolina Resource Recovery
 Facility Contact Steven Scott
 Street Address 3287 Jones Dr.
 City Mebane State NC ZIP Code 27302
 County Alamance
 Telephone No. _____ Fax: _____

3) Physical Location Information:

Please provide a narrative description of how to get to the facility (use street names, state road numbers, and distance and direction from a roadway intersection). West side of Jones Dr. approximately 1 mile north of intersection with Mebane Oaks Rd.

(A copy of a county map or USGS quad sheet with facility clearly located on the map is required to be submitted with this application)

4) This NPDES Permit Application applies to which of the following :

- New or Proposed Facility Date operation is to begin June, 2000
 Existing

5) Standard Industrial Classification:

Provide the 4 digit Standard Industrial Classification Code (SIC Code) that describes the primary industrial activity at this facility

SIC Code: 4 9 5 3 Also 5261

6) Provide a brief narrative description of the types of industrial activities and products manufactured at this facility: Receipt of land clearing and inert debris for
landfilling and recycling into mulch, compost, and topsoil.

7) Discharge points / Receiving waters:

How many discharge points (ditches, pipes, channels, etc.) convey stormwater from the property? 1
What is the name of the body or bodies of water (creek, stream, river, lake, etc.) that the facility stormwater discharges end up in? Tributary A to Haw Creek
If the site stormwater discharges to a separate storm sewer system, name the operator of the separate storm sewer system (e.g. City of Raleigh municipal storm sewer). N.A.

8) Does this facility have any other NPDES permits?

- No
- Yes

If yes, list the permit numbers for all current NPDES permits for this facility: _____

9) Does this facility have any Non-Discharge permits (ex: recycle permits)?

- No
- Yes

If yes, list the permit numbers for all current Non-Discharge permits for this facility: _____

10) Does this facility employ any best management practices for stormwater control?

- No
- Yes

If yes, please briefly describe: Grassed swales, buffer strips

11) Does this facility have a Stormwater Pollution Prevention Plan?

- No
- Yes

If yes, when was it implemented? _____

12) Are vehicle maintenance activities occurring at this facility?

- No
- Yes Only if break downs; otherwise, off-site.

13) Hazardous Waste:

- a) Is this facility a Hazardous Waste Treatment, Storage, or Disposal Facility?
 No Yes
- b) Is this facility a Small Quantity Generator (less than 1000 kg. of hazardous waste generated per calendar year) of hazardous waste?
 No Yes
- c) Is this facility a Large Quantity Generator (1000 kg. or more of hazardous waste generated per calendar year) of hazardous waste?
 No Yes
- d) If you answered yes to questions b. or c., please provide the following information:

Type(s) of waste: _____
How is material stored: _____

Where is material stored: _____
How many disposal shipments per year: _____
Name of transport / disposal vendor: _____
Vendor address: _____

14) Certification:

North Carolina General Statute 143-215.6 b (i) provides that:

Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained under Article 21 or regulations of the Environmental Management Commission implementing that Article, or who falsifies, tampers with or knowingly renders inaccurate any recording or monitoring device or method required to be operated or maintained under Article 21 or regulations of the Environmental Management Commission implementing that Article, shall be guilty of a misdemeanor punishable by a fine not to exceed \$10,000, or by imprisonment not to exceed six months, or by both. (18 U.S.C. Section 1001 provides a punishment by a fine of not more than \$10,000 or imprisonment not more than 5 years, or both, for a similar offense.)

I hereby request coverage under the referenced General Permit. I understand that coverage under this permit will constitute the permit requirements for the discharge(s) and is enforceable in the same manner as an individual permit.

I certify that I am familiar with the information contained in this application and that to the best of my knowledge and belief such information is true, complete, and accurate.

Printed Name of Person Signing: Steven S. Scott

Title: OWNER

Steven S. Scott
(Signature of Applicant)

5-18-00
(Date Signed)

Notice of Intent must be accompanied by a check or money order for \$80.00 made payable to:

NCDENR

Final Checklist

This application will be returned as incomplete unless all of the following items have been included:

- Check for \$80 made payable to NCDENR
- This completed application and all supporting documents
- Copy of county map or USGS quad sheet with location of facility clearly marked on map

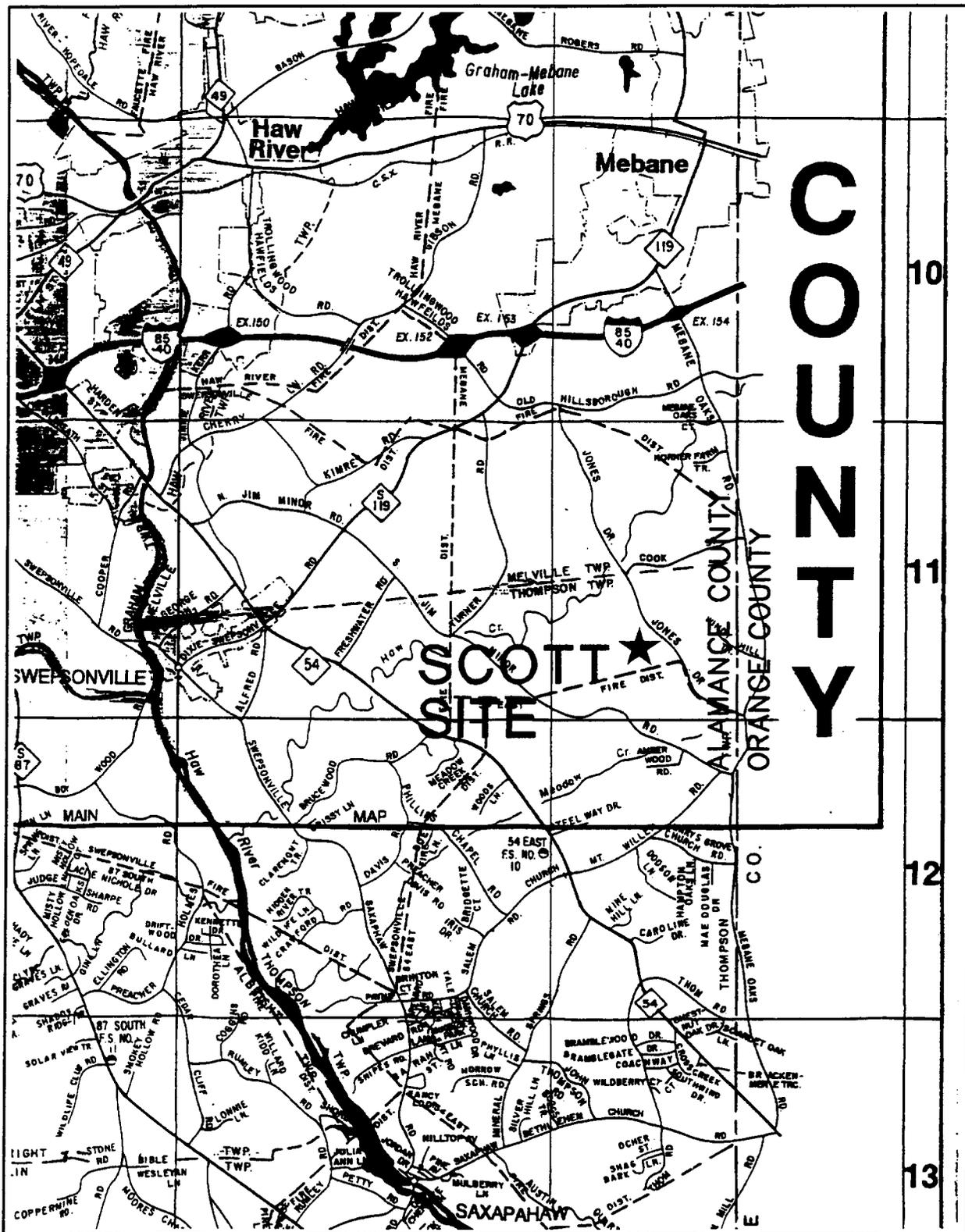
Mail the entire package to:

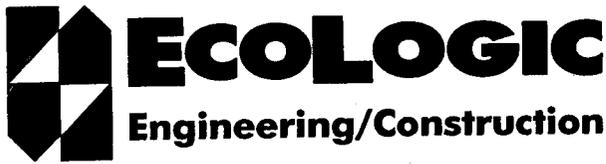
Stormwater and General Permits Unit
Division of Water Quality
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Note

The submission of this document does not guarantee the issuance of an NPDES permit.

SITE VICINITY MAP

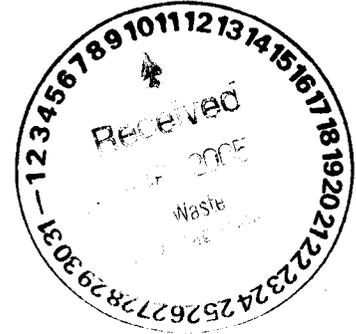




4321-A S. Elm-Eugene St. • Greensboro, NC 27406
(336) 335-1108 • Fax 335-3141
www.ecologic-nc.com

March 3, 2005

Jenny Freeman
NC Div. of Water Quality
585 Waughtown St.
Winston-Salem NC 27107



RE: Carolina Resource Recovery, 3287 Jones Drive, Mebane, NC

Dear Ms. Freeman:

On behalf of Carolina Resource Recovery, Inc., we are responding to the Notice of Violation dated January 18, 2005 that followed your general stormwater permit inspection of the referenced facility on January 14. We apologize for the delay in getting this response to you.

We will address the four (4) deficiencies you noted in the order raised in the NOV and on the attached Water Compliance Inspection Report.

Approved Erosion and Sediment Control Plan

The approved E&SC Plan was indeed issued to the facility as noted, but unfortunately Mr. Steven Scott (the owner) could not produce it at the time of your inspection. We believe that this was merely a case of misplacing the document. Another copy of the approved plan is being assembled and transmitted to Mr. Scott with this letter, so it will be available at the facility for future inspections and for reference for maintenance needs.

Most of the permitted land-disturbing activity occurred when the facility was first developed, so the permit is largely moot as an ongoing operational concern. However, to the best of our knowledge, the sedimentation controls installed in accordance with the plan remain in place and are being maintained by site personnel. Since all of the controls are temporary measures, they will ultimately be removed when all land-disturbing activity has ceased unless otherwise directed by the Land Quality Section or your office.

Landfill Permit

We are unable to explain the lack of issuance of the LCID landfill permit. It is noteworthy that no landfilling has occurred or is occurring pending receipt of the permit. Numerous inquiries have been made to the Permitting Engineer in the Winston-Salem Regional Office of DWM and we have been told on several occasions that its issuance was forthcoming pending verification of

Technology Serving Ecology

Carolina Resource Recovery, 3287 Jones Drive, Mebane, NC

completeness of the file. By copy of this letter, we are requesting comment from DWM on its status.

A solid waste permit to operate a Large Type 1 Solid Waste Compost Facility was issued to the facility on August 7, 2000 (copy enclosed). This permit allows the recycling of organic wastes (land clearing debris, yard wastes, etc.) into mulch and compost for landscaping, erosion control and other beneficial uses. This is the nature of the limited activity that is occurring at the facility.

Analytical Monitoring

The owner acknowledges that analytical monitoring of stormwater runoff has not been performed as required by the general stormwater permit. This is a case of a lack of understanding by the owner of the permit provisions, not a willful decision to ignore those provisions. Another copy of the permit is being transmitted to Mr. Scott with this letter, and monitoring will begin in the near future. There is one and only one outfall from the facility requiring monitoring as shown on the topo map attached to the permit. We are providing Mr. Scott with a copy of the Stormwater Discharge Outfall (SDO) Monitoring Report (SWU-246) for use in reporting the monitoring results.

Qualitative Monitoring

The owner acknowledges that qualitative monitoring of stormwater runoff has not been performed as required by the general stormwater permit. Again, this is a case of a lack of understanding by the owner of the permit provisions, not a willful decision to ignore those provisions. We are providing Mr. Scott with a copy of the Stormwater Discharge Outfall (SDO) Qualitative Monitoring Report (SWU-242) for use in reporting the monitoring results.

It is hoped that this response is satisfactory and that Carolina Resource Recovery can come back into compliance quickly by correcting these deficiencies and starting the required monitoring soon. Please advise if any other mitigative measures are required, or if a specific timetable for demonstration of compliance is expected.

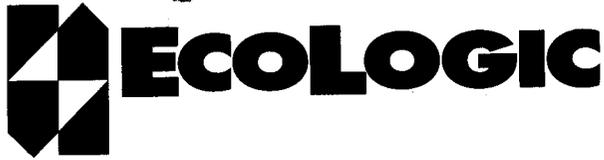
Respectfully,

EcoLogic Associates, P.C.



Mark A. Taylor, PE

C: Steven Scott, Carolina Resource Recovery, Inc.
Tim Jewett, NCDENR, Div. of Waste Management, WSRO
✓ Jim Barber, PE, NCDENR, Div. of Waste Management, Central Office



12
ECOLOGIC ASSOCIATES, P.C.
2007 Yanceyville Street, Ste. 223
Greensboro, NC 27405-5004
336-271-3093 • Fax 336-271-3094
ecologic@compuserve.com
www.ecologic-nc.com

April 21, 2000

RECEIVED
N.C. Dept. of EHNR
APR 24 2000
Winston-Salem
Regional Office

Mr. Timothy A. Jewett
NC Dept. of Env. and Natural Resources
Solid Waste Section
585 Waughtown Street
Winston-Salem, North Carolina 27107

**RE: Approved Erosion & Sediment Control Plan
Carolina Resource Recovery
Mebane, North Carolina**

Dear Tim:

Enclosed is a copy of the letter of approval of the erosion and sediment control plan for Carolina Resource Recovery from Gray Hauser of the Land Quality Section. Also enclosed are copies of the final calculations and E&SC drawings (Drawings No. 6 and 7) which constitute the approved plan. The approved plan is understood to be a required component of the solid waste permit application for the facility.

Your expeditious completion of the review of the application would be greatly appreciated. We are also submitting revisions to the composting facility plan to Ted Lyon based on his verbal comments. If there are any questions regarding this letter or the enclosures, please contact the undersigned at (336) 271-3093.

Respectfully,

A handwritten signature in black ink, appearing to read "Mark A. Taylor", with a long horizontal flourish extending to the right.

Mark A. Taylor, PE, CPESC
Project Manager

C: Steven S. Scott (w/o enclosures)

Enclosures

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
WINSTON-SALEM REGIONAL OFFICE



JAMES B. HUNT JR.
GOVERNOR

DIVISION OF LAND RESOURCES
LAND QUALITY SECTION

April 20, 2000

LETTER OF APPROVAL

RECEIVED
N.C. Dept. of EHNR
APR 24 2000
Winston-Salem
Regional Office

Mr. Steven Scott
3285 Jones Drive
Mebane, NC 27302

Dear Mr. Scott:

This office has reviewed the subject erosion and sedimentation control plan. We find the plan to be acceptable and hereby issue this Letter of Approval. The enclosed Certificate of Approval must be posted at the job site. This plan approval shall expire three (3) years following the date of approval, if no land-disturbing activity has been undertaken, as is required by Title 15A NCAC 4B .0029.

Please be advised that Title 15 NCAC 4B.0018 (a) requires that a copy of the approved erosion control plan be on file at the job site. Also, you should consider this letter to give the notice required by GS 113A-61.1 (a) of our right of periodic inspection to insure compliance with the approved plan.

North Carolina's Sedimentation Pollution Control Program is performance-oriented, requiring protection of existing natural resources and adjoining properties. If, following the commencement of this project, it is determined that the erosion and sedimentation control plan is inadequate to meet the requirements of the Sedimentation and Pollution Control Act of 1973 (North Carolina General Statute 113A-51 through 66), this office may require revisions to the plan and implementation of the revisions to insure compliance with the Act.

Acceptance and approval of this plan is conditioned upon your compliance with Federal and State water quality laws, regulations, and rules. In addition, local city or county ordinances or rules may also apply to this land-disturbing activity. This approval does not supersede any other permit or approval.

LETTER OF APPROVAL - Mr. Steven Scott
April 20, 2000

2

Please note that this approval is based in part on the accuracy of the information provided in the Financial Responsibility Form which you have provided. You are requested to file an amended form if there is any change in the information included on the form. In addition, it would be helpful if you notify this office of the proposed starting date for this project. Please notify us if you plan to have a preconstruction conference, and we will plan to attend.

Your cooperation is appreciated, and we look forward to working with you on this project.

Sincerely,



T. Gray Hauser, Jr., E.I.
Assistant Regional Engineer

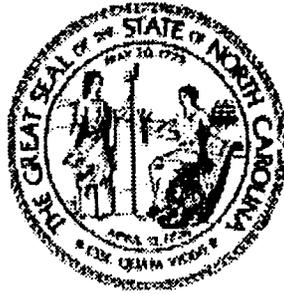
TGH/grh

Enclosure: Certificate of Approval
NPDES

cc: EcoLogic Associates, PC; WSRO File

PROJECT NAME:	Carolina Resource Recovery
COUNTY:	Alamance
RIVER BASIN:	Cape Fear
WATER CLASSIFICATION:	Other
FACILITY NUMBER:	ALAMA-2000-013
SUBMITTED BY:	EcoLogic Associates, PC
DATE RECEIVED BY L.Q.S.:	March 22, 2000
NEW SUBMITTAL (x)	

CERTIFICATE OF PLAN APPROVAL



The posting of this certificate certifies that an erosion and sedimentation control plan has been approved for this project by the North Carolina Department of Environment and Natural Resources in accordance with North Carolina General Statute 113A - 57 (4) and 113A - 54 (d) (4) and North Carolina Administrative Code, Title 15A, Chapter 4B.0007 (c). This certificate must be posted at the primary entrance of the job site before construction begins and until establishment of permanent groundcover as required by North Carolina Administrative Code, Title 15A, Chapter 4B.0027 (b).

Carolina Resource Recovery, Alamance County
Project Name and Location

April 29, 2000
Date of Plan Approval



S. Gray Harvey
Asst. Regional Engineer

10
RECEIVED
N.C. Dept. of EHNR

APR 24 2000

Winston-Salem
Regional Office

CAROLINA RESOURCE RECOVERY
MEBANE, NORTH CAROLINA

EROSION & SEDIMENT CONTROL
PLAN

March 2000
Revised April 13, 2000



EcoLogic Associates, P.C.
2007 Yanceyville St., Suite 223
Greensboro, NC 27405
(336) 271-3093
ecologic@compuserve.com



ECOLOGIC ASSOCIATES, P.C.
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Greensboro, NC 27405-5004
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ecologic@compuserve.com
www.ecologic-nc.com

April 13, 2000

Mr. Gray Hauser
NC Dept. of Env. and Natural Resources
Land Quality Section
585 Waughtown Street
Winston-Salem, North Carolina 27107

**RE: Erosion and Sediment Control Plan
Carolina Resource Recovery, Mebane, North Carolina**

Dear Gray:

On behalf of Steven S. Scott, EcoLogic Associates, P.C. is pleased to submit the enclosed revisions and additions to the Erosion and Sediment Control Plan for Carolina Resource Recovery. This is in response to your letter of receipt dated April 12, 2000 and is based on our telephone conversation earlier today.

Addressing your comments on the checklist individually,

- It is agreed that the provided drawing scale of 1"=100' is acceptable.
- The limits of construction have been added to Drawing 6 enclosed. Note that the drawing number was changed from 5 to 6 to avoid confusion with other facility permit drawings.
- The only proposed new culvert is called out on the plan drawing. The proposed all weather road is an existing dirt road and culverts already exist for the streams.
- Calculations were provided in the original submittal for the stormwater channels (see pages 2 - 6 and Table 1). Some confusion may have resulted from the repetitive use of channel and diversion identifiers (e.g., SC-1) for conveyances with similar properties. All channels are triangular with a 2.5-foot nominal depth.
- A drawing of construction details for erosion control measures is enclosed (Dwg. 7, E&SC Details).
- An additional sediment trap has been provided (TST-6) by subdividing the 5.75-acre drainage area into two areas as discussed. Additional information on design dimensions of the sediment traps has also been provided. Refer to revised pages 7 and 8 of the

Erosion and Sediment Control Plan, Carolina Resource Recovery

calculations enclosed. These can be inserted into the plan narrative to replace the originals.

- Drawing 5, Cross Sections, is enclosed, showing the cross-sections identified on Dwg. 6, as requested.
- Sediment control (rather than 'stabilization' as called for) has been specified in a note on Dwg. 6 for the minor diversions shown above the cut slopes in the Staging and Treatment & Processing areas. Silt pits are specified to catch sediment prior to the establishment of vegetation.

If there are any questions regarding these revisions, additions and enclosures, please contact the undersigned at (336) 271-3093.

Sincerely,



Mark A. Taylor, PE, CPESC
Project Manager



C: Steven S. Scott

Enclosures: E&SC Calculations (revised pages 7 and 8 only)
Drawings No. 5, 6 and 7



EcoLogic Associates, P.C.
2007 Yanceyville Street, Ste. 223
Greensboro, NC 27405-5004
336-271-3093 • Fax 336-271-3094
ecologic@compuserve.com
www.ecologic-nc.com

March 21, 2000

Mr. Gray Hauser
NC Dept. of Env. and Natural Resources
Land Quality Section
585 Waughtown Street
Winston-Salem, North Carolina 27107

**RE: Erosion and Sediment Control Plan
Carolina Resource Recovery, Mebane, North Carolina**

Dear Gray:

On behalf of Steven S. Scott, EcoLogic Associates, P.C. is pleased to submit the enclosed Erosion and Sediment Control Plan for Carolina Resource Recovery, a proposed organic and inert waste management facility.

If there are any questions regarding the enclosures, please contact the undersigned at (336) 271-3093.

Sincerely,

A handwritten signature in black ink that reads "Mark A. Taylor" with a long horizontal flourish extending to the right.

Mark A. Taylor, PE, CPESC
Project Manager

C: Steven S. Scott

Enclosures: E&SC Calculations
Drawing No. 5



DESIGN DIVERSION CHANNELS AND BERMS

Use the Rational Formula to calculate runoff:

$$\text{Rational Formula} \quad Q = C \times i \times A \quad (\text{cfs})$$

where,

C = Runoff coefficient (dimensionless)

i = Rainfall intensity (inches/hr)

A = Drainage area (acres)

From Table 8.03a*, Runoff Coefficient, C = 0.3 to 0.6 for smooth, bare packed soil (conservative).

For 4:1 and steeper slopes, use C = 0.6

For flatter slopes, use C = 0.45

To find the Rainfall Intensity, first determine the Time of Concentration, T_c (Fig. 8.03a*).

From inspection of Dwg. 5, overland flow on the site typically travels over horizontal distances of 100 to 300 feet and falls 15 to 45 feet vertically. Including flow in the channels of up to 600 feet, a maximum length of travel of 900 feet applies.

From Figure 8.03a*, these dimensions result in a Time of Concentration of 5 to 7 minutes. Multiplying by 2 for overland flow on grassed surfaces, $T_{cVeg} = 10$ to 14 minutes.

Find the Rainfall Intensity, i, from Figure 8.03d* for Greensboro, NC.

Selecting a design storm with a duration equal to the Time of Concentration and a return period of 10 years,

Use $i = 6.0$ ins/hr

From inspection of Dwg. 5, the cumulative drainage areas for the diversion berms and channels range from approximately 0.5 to 3.0 acres. One exception is the channel

* Reference: NC Erosion and Sediment Control Planning and Design Manual (Rev. Dec., 1993)



running along the east side of the landfill which accepts runoff from the treatment and processing area via a culvert. It has a contributing area of approximately 5.75 acres.

See attached Table 1 – Channel and Diversion Berm Design for spreadsheet solutions to the Rational Formula (and calculations to follow).

From Table 1, Q is 3.6 cfs/acre.

Determine Channel Flow Characteristics

Use Manning's Equation and the Continuity Equation to calculate flow characteristics in triangular channels as follows:

Manning's Equation $V = 1.486/n \times R^{2/3} \times S^{1/2}$ (fps)

Continuity Equation $Q = A \times V$ (cfs)

where,

- n = Manning's roughness coefficient (dimensionless)
- R = Hydraulic radius = A/P (feet)
- S = Channel slope (feet/feet)
- P = Wetted perimeter (feet)

For given degrees of side slope, the two equations are solved simultaneously for d, flow depth (ft) and V, velocity (fps). An assumed value of Manning's 'n' is required. Since geosynthetic channel linings will be used in some channels ('rolled erosion control products' or RECP's), manufacturers' suggested values of 'n' are available for the unvegetated condition.

For solving the equations, the geometric relationships shown in Figure 1 below can be used.

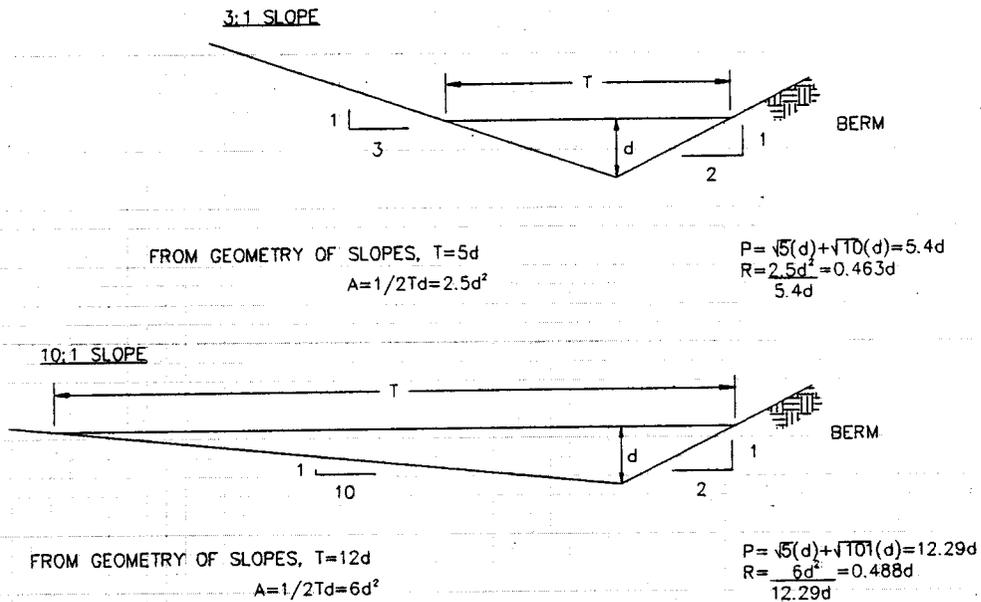


FIGURE 1

Check for longitudinal channel slopes of 1% minimum, 2% typical, and 3.5% maximum.

For the unvegetated, reinforced condition, based on various manufacturers' published data for erosion control and turf reinforcement mats and Table 8.05e* for d = 0.5 – 2.0',

Use n = 0.025 (unvegetated)

For the fully vegetated condition, Table 8.04* gives:

Base n value	=	0.020
Modifier for surface irregularities (Minor)	=	0.005
Modifier for cross-section variations (Gradual)	=	0.000
Modifier for obstructions (Minor)	=	0.010
Modifier for vegetation (Medium to High)	=	<u>0.025</u>
Total n _s	=	0.060

Modifier for meandering (Appreciable) = 0.15 x n_s

Therefore, n = 1.15 x 0.060 = 0.070 (Vegetated)

* Reference: NC Erosion and Sediment Control Planning and Design Manual (Rev. Dec., 1993)



In addition to velocity, V, check Tractive Shear Stress, T

$$T = \gamma \times d \times S \quad (\text{psf})$$

where,

- y = Unit weight of water (62.4 pcf)
- d = Flow depth (feet)
- S = Channel slope (feet/feet)

See attached Table 1 – Channel and Diversion Berm Design for spreadsheet solutions to Manning’s Equation, the Continuity Equation and Tractive Shear Stress.

Size Channels and Berms (Minimum Depth)

From an examination of flow depth (d) values, it can be seen that most flow conditions result in flow depths less than or equal to 1 foot. For the larger drainage areas and under vegetated conditions, the flow depth approaches 1.5 feet in diversions and peaks at around 2.0 feet in the east side landfill channel.

Therefore, use a minimum channel depth of 2.5 feet to provide at least 1 foot of freeboard under most design flow conditions.

Design Channel Lining

Refer to Table 2 for specified rolled erosion control products (RECP’s) for both temporary stabilization (degradable erosion control mats, or ECM’s) and permanent stabilization (non-degradable turf reinforcement mats, or TRM’s).

Refer to Table 3 for peak velocities and tractive shear stresses based on contributing drainage areas and vegetation conditions.

* Reference: NC Erosion and Sediment Control Planning and Design Manual (Rev. Dec., 1993)



TABLE 2 – RECP Properties

<u>Application</u>	<u>NAG</u>	<u>Allowable V (fps)</u>	<u>Allowable T* (psf)</u>	<u>SI</u>	<u>Allowable V (fps)</u>	<u>Allowable T* (psf)</u>
Permanent Channel Lining (100% Synthetic)	C350	9.5	3.2 (8 Veg.)	TRM 450	18	7
Temporary Channel Lining (Straw/Coconut)	SC150	N.A.	1.8			
Temporary Channel Lining (100% Coconut)	C125	N.A.	2.25	IKEX CF-2	10	3 (Est.)

NAG = North American Green

SI = Synthetic Industries

<u>Application</u>	<u>Contech</u>	<u>Allowable V (fps)</u>	<u>Allowable T* (psf)</u>	<u>BonTerra</u>	<u>Allowable V (fps)</u>	<u>Allowable T* (psf)</u>
Permanent Channel Lining (100% Synthetic)	TRM C45	18	7	SFB (10)	20	5.5 (Unveg.)
Temporary Channel Lining (Straw/Coconut)	SCFB-2	5	2	CS2	12	2.5
Temporary Channel Lining (100% Coconut)	CFB-2	5 to 7	2.3	C2	15	3

TABLE 3 - Peak Velocities and Tractive Shear Stresses

	<u>SC-1</u>	<u>SC-2</u>	<u>SC-3</u>	<u>SC-4</u>	<u>SC-5</u>	<u>PD-1</u>	<u>PD-2</u>
Peak V (fps)							
Unvegetated	5.4	2.8	2.4	4.4	3.7	3.6	4.0
Vegetated	2.5	1.3	1.1	2.0	1.7	1.7	1.9
Peak T (psf)							
Unvegetated	1.6	0.4	0.3	0.9	0.7	0.7	0.9
Vegetated	2.3	0.7	0.5	1.3	1.0	1.1	1.3

* Reference: NC Erosion and Sediment Control Planning and Design Manual (Rev. Dec., 1993)



Design on the basis of peak Tractive Shear Stress.

Using Tables 2 and 3 above, select channel lining as follows:

TABLE 4 – Recommended Channel Linings

Channel Designation	Drainage Area (Acs.)	Side Slope	T (psf) from Table 3	Recommended Lining
Diversion PD-1	2.0	10%	1.1	Temp. (Straw/Net)
Diversion PD-2	3.0	10%	1.3	Temp. (Straw/Coco)
Channel SC-1	2.0	3:1	2.3	Temp. (Straw/Coco)
Channel SC-2	1.0	3:1	0.7	Temp. (Straw/Net)
Channel SC-3	0.5	3:1	0.5	Temp. (Straw/Net)
Channel SC-4	5.75	3:1	1.3	Temp. (Straw/Coco)
Channel SC-5	3.0	3:1	1.0	Temp. (Straw/Net)

NOTE: All products must be installed in strict accordance with manufacturers' guidelines, and preferably with a manufacturer's rep present.

DESIGN CULVERT

Use Haestad Methods CulvertMaster® program to calculate required culvert size(s).

For the new road culvert, use the following input data:

Upstream Invert	600.5 feet
Downstream Invert	600.0 feet
Length	25.0 feet
Allowable Headwater Elev.	602.5 feet
Tailwater Elev.	601.0 feet
Discharge (rounded)	11.5 cfs (3.2 ac.)

* Reference: NC Erosion and Sediment Control Planning and Design Manual (Rev. Dec., 1993)



See attached *Culvert Calculator Report*. (Note: PVC pipe shown, but Manning's n adjusted for corrugated HDPE pipe, $n = 0.020$. Concrete pipe also checked).

Use one 24" (Min.) plastic pipe (corrugated HDPE) or concrete pipe (RCP).

Provide soil cover to satisfy manufacturer's guidelines.

DESIGN SEDIMENT RETENTION STRUCTURES

Size the Temporary Sediment Traps

Practice Standard 6.60* specifies a minimum of 1800 cf/acre for stormwater and sediment detention in temporary sediment traps. Thus, provide a detention pool volume at each temporary sediment trap as follows:

Trap ID	Dist. Area (ac)	Min. Volume (cf)
TST-1 and 5	2.0	3,600
TST-3 and 4	5.0	9,000
TST-2	2.5	4,500
TST-6	3.2	5,760

Design Dimensions of Temporary Sediment Traps

Practice Standard 6.60* specifies that the target surface area, SA_T , in acres, is $0.01 \times Q_p$ (cfs) (after Barfield and Clar (1985)).

For TST-1 and 5, $Q_p = 7.2$ cfs, thus $SA_T = 0.01 \times 7.2 = 0.072$ acres = 3,136 sq ft

For TST-3 and 4, $Q_p = 18.0$ cfs, thus $SA_T = 0.01 \times 18.0 = 0.18$ acres = 7,841 sq ft

For TST-2, $Q_p = 9.0$ cfs, thus $SA_T = 0.01 \times 9.0 = 0.09$ acres = 3,920 sq ft

For TST-6, $Q_p = 11.5$ cfs, thus $SA_T = 0.01 \times 11.5 = 0.115$ acres = 5,009 sq ft

* Reference: NC Erosion and Sediment Control Planning and Design Manual (Rev. Dec., 1993)



Practice Standard 6.60* also provides the following formula for estimating trap volume:

$$\text{Vol. (cf)} = 0.4 \times \text{SA (sf)} \times d_{\text{max}} \text{ (ft)}$$

Because Dwg. 5 is based on Alamance County topo, which is neither precise nor accurate enough to extract design data from, the design dimensions of the traps, such as surface area, SA (sq ft), maximum pool depth, d_{max} (ft), volume, V (cf), weir length, L_{WEIR} (ft), bypass elevation, and cleanout elevation will have to be determined in the field at the time of construction and optimized for site conditions to satisfy Practice Standard 6.60*.

As-built trap dimensions will be submitted to the Division of Land Quality after the traps are constructed. A maximum sediment storage depth of 3.5 feet will be maintained (see detail) and a target length to width (L:W) ratio of 2 will be used.

Design Dimensions of Permanent Outlet Protection

Appendix 8.06* provides design guidance for sizing riprap outlet protection in the form of a six-step process. The process has been followed and the results are tabulated in the following table. Nomographs in Figures 8.06a and 8.06b are used as directed and where applicable (see attached nomographs). Refer to Dwg. 5 for the location of the outlet protection listed in the table. Where dimensions from the nomographs were below practical minimums, those minimums are used.

ID #	TW Cond.	d_o (in)	Q (cfs)	d_{50} (ft)	d_{max} (ft)	d (ft)	L_a (ft)	W (ft)
1	Min	24	11.5	0.33	0.5	1.0	10	*

NOTE: NCDOT Class B riprap satisfies the needs.

* Line the receiving channel up to the top of banks.

* Reference: NC Erosion and Sediment Control Planning and Design Manual (Rev. Dec., 1993)



Construction Sequence

1. Install silt fence and temporary sediment traps ahead of areas disturbed. Use silt fences when areas less than 1 acre are disturbed within a drainage area.
2. Construct diversion berms above areas to be disturbed.
3. Install new culvert and inlet and outlet protection.
4. Construct permanent access roads.
5. Construct stormwater channels and permanent diversions ahead of areas disturbed.
6. Install channel lining as needed.
7. Seed, fertilize & mulch (permanent) after excavations are completed.
8. Remove temporary erosion control measures after the site is stabilized.

* Reference: NC Erosion and Sediment Control Planning and Design Manual (Rev. Dec., 1993)

Table 1 - Channel and Diversion Berm Design

Channel Flow Characteristics		(Using Rational Formula $Q = C \times i \times A$, Manning's Formula $Q = 1.486/n \times R^{2/3} \times S^{1/2} \times A$ and others)														
		A (Ac)	C	I (In/Hr)	Q (cfs)	S (ft/ft)	n	M ₁	M ₂	d ₁ (ft)	T (ft)	A (ft ²)	R (ft)	V (fps)	T (psf)	
SW Channel SC-1 and Diversion Berm PD-1		(Contributing Area = 2.0 acre)														
Case	Description	A (Ac)	C	I (In/Hr)	Q (cfs)	S (ft/ft)	n	M ₁	M ₂	d ₁ (ft)	T (ft)	A (ft ²)	R (ft)	V (fps)	T (psf)	
1	10 Yr., 8 Min. Storm, Min. Slope, Unvegetated	2.0	0.6	6.0	7.2	0.01	0.025	3	2	0.92	4.62	2.13	0.43	3.4	0.6	
2	10 Yr., 8 Min. Storm, Med. Slope, Unvegetated	2.0	0.6	6.0	7.2	0.02	0.025	3	2	0.81	4.06	1.65	0.38	4.4	1.0	
3	10 Yr., 8 Min. Storm, Max. Slope, Unvegetated	2.0	0.6	6.0	7.2	0.035	0.025	3	2	0.73	3.65	1.33	0.34	5.4	1.6	
4	10 Yr., 8 Min. Storm, Min. Slope, Unveg. (Div.)	2.0	0.6	6.0	7.2	0.02	0.025	10	2	0.58	6.92	1.99	0.28	3.6	0.7	
5	10 Yr., 8 Min. Storm, Min. Slope, Vegetated	2.0	0.6	6.0	7.2	0.01	0.070	3	2	1.36	6.80	4.62	0.63	1.6	0.8	
6	10 Yr., 8 Min. Storm, Med. Slope, Vegetated	2.0	0.6	6.0	7.2	0.02	0.070	3	2	1.19	5.97	3.56	0.55	2.0	1.5	
7	10 Yr., 8 Min. Storm, Max. Slope, Vegetated	2.0	0.6	6.0	7.2	0.035	0.070	3	2	1.07	5.37	2.89	0.50	2.5	2.3	
8	10 Yr., 8 Min. Storm, Min. Slope, Veg. (Div.)	2.0	0.6	6.0	7.2	0.02	0.070	10	2	0.85	10.18	4.32	0.41	1.7	1.1	
Stormwater Channel SC-2		(Contributing Area = 1.0 acre)														
Case	Description	A (Ac)	C	I (In/Hr)	Q (cfs)	S (ft/ft)	n	M ₁	M ₂	d ₁ (ft)	T (ft)	A (ft ²)	R (ft)	V (fps)	T (psf)	
9	10 Yr., 8 Min. Storm, Min. Slope, Unvegetated	1.0	0.6	6.0	3.6	0.01	0.025	3	2	0.71	3.56	1.27	0.33	2.8	0.4	
10	10 Yr., 8 Min. Storm, Min. Slope, Vegetated	1.0	0.6	6.0	3.6	0.01	0.070	3	2	1.05	5.24	2.75	0.49	1.3	0.7	
Stormwater Channel SC-3		(Contributing Area = 0.5 acre)														
Case	Description	A (Ac)	C	I (In/Hr)	Q (cfs)	S (ft/ft)	n	M ₁	M ₂	d ₁ (ft)	T (ft)	A (ft ²)	R (ft)	V (fps)	T (psf)	
11	10 Yr., 8 Min. Storm, Min. Slope, Unvegetated	0.5	0.6	6.0	1.8	0.01	0.025	3	2	0.55	2.75	0.75	0.25	2.4	0.3	
12	10 Yr., 8 Min. Storm, Min. Slope, Vegetated	0.5	0.6	6.0	1.8	0.01	0.070	3	2	0.81	4.04	1.63	0.37	1.1	0.5	

Table 1 - Channel and Diversion Berm Design

2

Stormwater Channel SC-4																
(Contributing Area = 5.75 acres)																
Case	Description	A (Ac)	C	I (In/Hr)	Q (cfs)	S (ft/ft)	n	M ₁	M ₂	d ₁ (ft)	T (ft)	A (ft ²)	R (ft)	V (fps)	T (psf)	
13	10 Yr., 8 Min. Storm, Min. Slope, Unvegetated	5.75	0.6	6.0	20.7	0.01	0.025	3	2	1.37	6.86	4.71	0.64	4.4	0.9	
14	10 Yr., 8 Min. Storm, Min. Slope, Vegetated	5.75	0.6	6.0	20.7	0.01	0.070	3	2	2.02	10.10	10.20	0.94	2.0	1.3	
SW Channel SC-5 and Diversion Berm PD-2																
(Contributing Area = 3.0 acres)																
Case	Description	A (Ac)	C	I (In/Hr)	Q (cfs)	S (ft/ft)	n	M ₁	M ₂	d ₁ (ft)	T (ft)	A (ft ²)	R (ft)	V (fps)	T (psf)	
15	10 Yr., 8 Min. Storm, Min. Slope, Unvegetated	3.0	0.6	6.0	10.8	0.01	0.025	3	2	1.08	5.38	2.89	0.50	3.7	0.7	
16	10 Yr., 8 Min. Storm, Min. Slope, Vegetated	3.0	0.6	6.0	10.8	0.01	0.070	3	2	1.58	7.91	6.26	0.73	1.7	1.0	
17	10 Yr., 8 Min. Storm, Typ. Slope, Unveg. (Div.)	3.0	0.45	6.0	8.1	0.025	0.025	10	2	0.58	6.93	2.00	0.28	4.0	0.9	
18	10 Yr., 8 Min. Storm, Typ. Slope, Veg. (Div.)	3.0	0.45	6.0	8.1	0.025	0.070	10	2	0.85	10.20	4.34	0.42	1.9	1.3	

Culvert Calculator Report Culvert Calculations

Solve For: Section Size

Culvert Summary			
Allowable HW Elevation	602.50 ft	Headwater Depth/ Height	0.99
Computed Headwater Elevation	602.49 ft	Discharge	11.50 cfs
Inlet Control HW Elev	602.34 ft	Tailwater Elevation	601.00 ft
Outlet Control HW Elev	602.49 ft	Control Type	Entrance Control

Grades			
Upstream Invert	600.50 ft	Downstream Invert	600.00 ft
Length	25.00 ft	Constructed Slope	0.020000 ft/ft

Hydraulic Profile			
Profile	S2	Depth, Downstream	1.07 ft
Slope Type	Steep	Normal Depth	1.06 ft
Flow Regime	Supercritical	Critical Depth	1.22 ft
Velocity Downstream	6.76 ft/s	Critical Slope	0.012974 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.020
Section Material	HDPE or PVC	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	1		

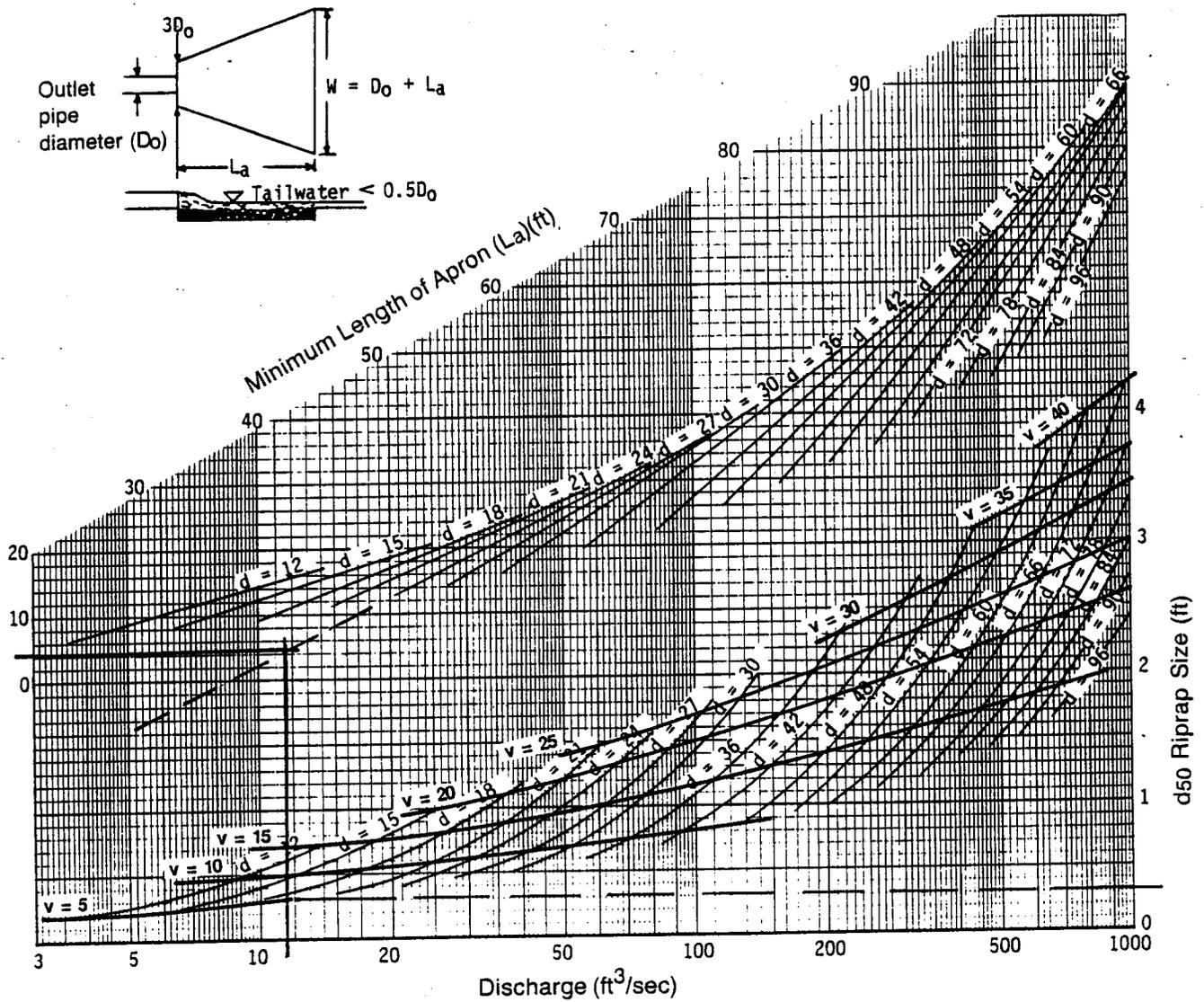
Outlet Control Properties			
Outlet Control HW Elev	602.49 ft	Upstream Velocity Head	0.51 ft
Ke	0.50	Entrance Loss	0.26 ft

Inlet Control Properties			
Inlet Control HW Elev	602.34 ft	Flow Control	Unsubmerged
Inlet Type	End-Section Conforming to fill slope	Area Full	3.1 ft ²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

Culvert Calculator Report Culvert Calculations

Solve For: Section Size

Culvert Summary			
Allowable HW Elevation	602.50 ft	Headwater Depth/ Height	0.99
Computed Headwater Elevation	602.49 ft	Discharge	11.50 cfs
Inlet Control HW Elev	602.34 ft	Tailwater Elevation	601.00 ft
Outlet Control HW Elev	602.49 ft	Control Type	Entrance Control
Grades			
Upstream Invert	600.50 ft	Downstream Invert	600.00 ft
Length	25.00 ft	Constructed Slope	0.020000 ft/ft
Hydraulic Profile			
Profile	S2	Depth, Downstream	0.92 ft
Slope Type	Steep	Normal Depth	0.83 ft
Flow Regime	Supercritical	Critical Depth	1.22 ft
Velocity Downstream	8.18 ft/s	Critical Slope	0.005482 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	1		
Outlet Control Properties			
Outlet Control HW Elev	602.49 ft	Upstream Velocity Head	0.51 ft
Ke	0.50	Entrance Loss	0.26 ft
Inlet Control Properties			
Inlet Control HW Elev	602.34 ft	Flow Control	Unsubmerged
Inlet Type	Square edge w/headwall	Area Full	3.1 ft ²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		



Curves may not be extrapolated.

Figure 8.06a Design of outlet protection protection from a round pipe flowing full, minimum tailwater condition ($T_w < 0.5$ diameter).

SECTION 01568

EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

The Contractor will provide personnel, equipment, materials, and supplies to perform erosion and sediment control work during construction in compliance with the Erosion and Sediment Control Plan as approved by the NC Land Quality Section. Construction of structures may include temporary diversions, permanent channels, drop inlets, culverts, and slope drains. The Contractor shall comply with all local and state erosion and sediment control regulations.

1.2 RELATED REQUIREMENTS

None

1.3 SUBMITTALS

According to the material specifications listed in the drawings and this Section, the Contractor shall provide manufacturer's information, specifications and installation guidelines for all materials proposed for use in stormwater and erosion control structures. The submittal shall be made to the Engineer for verification that the materials conform to the specifications and design requirements.

PART 2 PRODUCTS

2.1 GENERAL MATERIALS

Materials used in construction shall be in accordance with the North Carolina Erosion and Sediment Control regulations, and as selected by the Contractor subject to the approval of the Engineer.

2.2 CHANNEL LINING/EROSION CONTROL MAT

Channels will usually require use of erosion control matting for stabilization. Steep slopes may also require erosion control matting to resist erosion. As shown on the plans and/or as directed by the Engineer, portions of the channels and/or slopes shall be lined/covered with:

Permanent Channel Lining (100% Synthetic)	Material shall be North American Green (NAG) C350, Synthetic Industries (SI) Landlock TRM 450, Contech TRM C45, or Bonterra SFB (10).
Temporary Channel Lining (Straw/Coconut)	Material shall be NAG SC150, Contech SCFB-2 or Bonterra CS2.
Temporary Channel Lining (100% Coconut)	Material shall be NAG C125, IKEX CF-2, Contech CFB-2, or Bonterra C2.

2.3 DROP INLET

Drop inlet structures shall be prefabricated HDPE or standard DOT pre-cast reinforced concrete structures, subject to the Engineer's approval. Slope drain and/or outfall piping shall be joined to the drop inlet structure using a watertight connector or grouted, as appropriate.

2.4 SLOPE DRAIN/CULVERTS

Slope drains shall be constructed using corrugated HDPE (polyethylene) pipe with soil-tight connections. Buried slope drains shall incorporate sewer grade connections with O-rings. Smooth-wall interior, double wall HDPE pipe shall be used if called for on the plans. Culverts under roads shall be reinforced concrete pipe or other as shown on the drawings.

PART 3 EXECUTION

3.1 GENERAL

The job superintendent of the Contractor shall be responsible for the installation and maintenance of all erosion and sediment control practices. Temporary measures shall be applied throughout construction to control erosion and to minimize siltation of drainage ditches and adjacent waters. Limit grading to areas of workable size so as to

limit the duration of exposure of disturbed and unprotected areas. All appropriate conservation practices shall be applied in sequence with the work. All erosion and sediment control practices shall be installed in accordance with the manufacturer's guidelines and/or the latest North Carolina Erosion and Sediment Control Planning and Design Manual.

3.2 VEGETATION

Ground cover must be provided on exposed slopes within 15 working days following completion of any phase of grading. Permanent ground cover must be provided for all disturbed areas within 30 working days or 120 calendar days (whichever is shorter) following completion of construction.

Prior to any seeding operation, the soil shall be limed, fertilized, and disked. Where the schedule allows, soil testing shall be performed to determine the specific nutrient requirements of the soil, and application rates adjusted accordingly. Adequate nutrient inputs are critical to establishing good vegetation in exposed subsoils.

Mulch or an erosion control mat shall be used to stabilize slopes and permanent channels and help establish vegetation. Permanently seeded areas shall be protected during germination and establishment with straw mulch or other material approved by the Engineer.

Only certified seed, certified in accordance with the regulations of the North Carolina Crop Improvement Association, shall be used. Temporary vegetation shall be used if final cover or other construction is completed prior to the optimum dates for permanent vegetation establishment. Substitutions/variations of seed mixtures or amendments must be approved by the Engineer.

Refer to Table 1 for specified seed mixtures, amendments, application rates and dates.

3.3 MULCH

When final grading has not been completed, apply mulch such as asphalt emulsion, crimped or tacked straw or similar materials for temporary protection. Areas brought to final grade during an off-season may be mulched immediately and overseeded at the proper season with permanent grass and/or legume species. Properly anchor mulch to prevent dislodging.

3.4 TEMPORARY CONSTRUCTION ENTRANCE

NOT USED

3.5 TEMPORARY SEDIMENT BARRIER(S)

Silt Fence: Place according to the project drawings for temporary sediment control. Maintain as necessary.

3.6 TEMPORARY DIVERSIONS

Temporary diversions shall be used as needed until final grades are achieved.

3.7 SEDIMENT BASINS AND TRAPS

The Contractor shall install any new structures required by the plans. The structures will detain sediment-laden runoff for large disturbed areas. Contractor shall be responsible for maintenance and cleaning during construction and clean-up of all basins servicing work areas before leaving the site.

3.8 PERMANENT STORMWATER CHANNELS

Layout for permanent channels shall be completed after site preparation. Pin flags may be temporarily placed to identify channel location. As existing soil cover allows, channel grading may be performed prior to or following final cover construction. Channel layout shall be approved by the Engineer prior to field construction. The Engineer's approval shall include and identify segments of the channels that will receive permanent or temporary liners and approve specific materials proposed by the contractor. Channel depth shall be as shown on the plans and identified in the layout.

The thickness of the protective soil cover shall be adjusted to provide an even grade transition to the channel location. Rock check dams may be required along channels that exceed 5 percent slope. All channel linings shall be installed and secured according to the manufacturer's recommendations and specifications. The lining area shall be prepared and seeded prior to liner installation.

3.9 DROP INLETS

Drop inlet structures shall be set on a compacted subgrade. Grades shall be carefully adhered to to provide design inverts within ± 0.1 foot. Pipes entering and exiting inlets shall be properly grouted or otherwise connected to the inlet to provide a strong, watertight connection.

3.10 OTHER APPROVED MEASURES

Provide all other measures required by plans and/or governing regulations including inlet and outlet protection, temporary and permanent diversions, soil stabilization techniques, etc.

3.11 MAINTENANCE

All erosion and sediment control measures shall be checked weekly and after each significant rainfall (greater than ½ inch of rainfall in 24 hours). The following shall be checked in particular:

1. All storm drain pipes and silt fences for signs of clogging.
2. Sediment traps and basins to insure their integrity and available volume and to make sure the outfalls and connecting drainage swales are operating correctly.
3. Stormwater channels and diversion berms for signs of failure and/or clogging.
4. Slopes for signs of significant erosion, e.g., rills, gullies, sloughing.

TABLE 1

Seeding Mixtures, Amendments and Application

Permanent Vegetation (Aug. 15 – Oct. 15 and Feb. 15 – Apr. 15)

Tall Fescue	100 lbs./acre
Sericea Lespedeza	30 lbs./acre
Kobe Lespedeza	20 lbs./acre
10-20-20 Fertilizer	500 lbs./acre
Lime	4000 lbs./acre
Mulch	1.5 tons/acre straw or 750 lbs./acre hydromulch

Temporary Vegetation

Mar. – Aug.	German Millet	50 lbs./acre
Sept. – Feb.	Rye Grain	50 lbs./acre
10-20-20 Fertilizer	500 lbs./acre	
Mulch	1.5 tons/acre straw or 750 lbs./acre hydromulch	

END OF SECTION

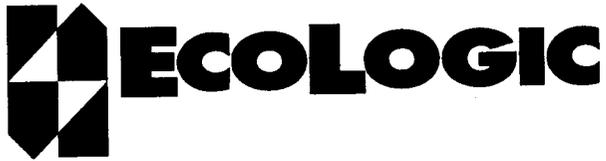
Dear Mr. Taylor:

The Division of Waste Management, Solid Waste Section, has reviewed the application you submitted for Carolina Resource Recovery to operate a compost facility, an LCID treatment and processing facility and an LCID landfill. In order for us to complete our review we will need the following additional information.

1. The application needs to specifically address the setbacks in .1404(3), (4), (5), (7), and (8).
- ✓ 2. An approval letter from the appropriate government agency for the erosion and runoff control plan.
3. A letter from the NC Division of Water Quality indicating that the facility does not need a discharge permit needs to be included with the application.
4. The application must address .1404(c).
5. The site plan needs to include all permanent erosion and runoff control structures, the location of the grinder and the location of the curing area.
6. .1405(a)(7), (8), and (9) need to be thoroughly addressed in the application.

The operating plans for the facility appear to represent what is required in .1405(a)(10) for an operation and maintenance manual. This portion of the application must also include:

1. Information on the depth and spacing of temperature monitoring.
2. The method of determining moisture and the acceptable moisture levels for the windrows.
3. The O & M Manual should also include all the record keeping requirements in .1408(b) of the rules and an outline of the annual report.
4. Reporting of quantities is required to be in tons. If materials are going to be accepted on a volume basis the method of converting from volume to tons needs to be included.
5. All the concerns of the fire marshall shall be addressed.



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336-271-3093 • Fax 336-271-3094
ecologic@compuserve.com
www.ecologic-nc.com

LETTER OF TRANSMITTAL

TO: Ted Lyon
DATE: March 7, 2000
SUBJECT: Carolina Resource Recovery, Mebane, NC

Dear Ted –

Please find enclosed one copy of the Application for Permit to Construct and Operate an organic and inert waste management facility to be known as Carolina Resource Recovery in Mebane, NC. The submittal was officially made to Tim Jewett, but he noted that you would need to approve the Type 1 composting operation that is part of the proposed facility. As such, this copy is being sent to you directly to facilitate your review.

Mr. Steven S. Scott, the applicant, is eager to begin operations as soon as possible this year, so your prompt review would be greatly appreciated. Please feel free to call if you have any questions or require additional information.

A set of five (5) drawings is being mailed under separate cover.

Thank you in advance for your consideration of this request.

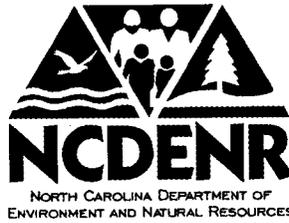
PLEASE CALL IF THE ENCLOSURES ARE NOT AS DESCRIBED ABOVE.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark A. Taylor", with a long horizontal flourish extending to the right.

Mark A. Taylor, PE
EcoLogic Associates, P.C.

C: Steven S. Scott
Tim Jewett



NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Date

Steven S. Scott, President
Carolina Resource Recovery
3285 Jones Drive
Mebane, NC 27302

DRAFT

Re: LCID Permit Application
Permit No. Permit No.
Carolina Resource Recovery
Alamance County, North Carolina

Did not send
of Grant
LCID Application Returned
5-13-05 Grant letter

Dear Mr. Scott:

The following is information that we request you address before we continue processing the above referenced application.

May 15, 2001, Submittals

1. Section .0201 (b) (1) precludes grading or clearing prior to issuance of the permit.
2. The US Army Corps of Engineers needs to concur with the finding of no jurisdictional wetlands.
3. Page 3 of the 5/01 (Rev. 2) submittal: Statement is made that proposed grading will result in a net soil surplus of about 12,500 cubic yards that would provide more than the amount needed for cover soil. The section under LCID Landfill on page 7 of the same document, contains the statement "(n)o excavation below the prevailing base grade is planned, but some local topographic highs will be lowered and filling will occur to raise the base grade above the regulatory limit relative to groundwater." These statements raise questions: How much material will be graded? How much graded material is needed to provide necessary buffer for separation between the waste and groundwater?

The grading shown in Figure 5 indicates predominately fill with little or no cutting activities occurring along the eastern half of the proposed landfill.

4. Section .0565 (4) (c) requires submittal of a description of systematic usage of disposal area, operation, orderly development and closure of the landfill. Please provide a fill progression drawing that complies with this rule and that an equipment operator can use as a reference.
5. Figure 5 Sheet 1 of 1 dated 5/15/01 depicting piezometric surface of the area in question should be signed and stamped by a registered Professional Geologist. Also:

DRAFT

- a. The perimeter of the waste area should be detailed.
- ~~b. Please provide the drawing on a scale of 1 inch equals 100 feet.~~
6. The drawing described above does not provide any reference points for locating the site on any other plan sheet.
6. Statements made on page 4 are conclusions of a geological nature and therefore should be certified by a licensed professional geologist in accordance with Section .0202 (a) (3). Unless the rains in early April 2001 were associated with a storm having a frequency greater than the 25-year storm, we will require additional information to support a seasonal high ground water table of greater depths than the 4/4/01 readings shown in the Groundwater Observations table submitted under the above referenced revised application package.
7. Please provide new cross-section drawings per Section .0565 (3) (o) that account for the new bottom grading plan shown in Figure 5. At least one cross-sections should dissect the rock outcropping and align along the axis formed by piezometers P-4, P-5 and P-6, and at least one cross-section should align along an axis formed by piezometers P-1, P-2, and P-3. In addition to the elevations required in Section .0565 (3) (o), the water elevations should also be shown demonstrating the required groundwater and bedrock separation.
8. Section .0202 (a) (3) requires a licensed professional geologist to certify geological studies. Information regarding groundwater and bedrock submitted in support of the LCID application needs to comply with the rule.

Thank you for your cooperation in this matter. Should you have any questions regarding this letter or wish to arrange a meeting to further discuss the matter, please contact me at (919) 733-4996 extension 266.

Sincerely,

Geoffrey H. Little
Environmental Engineer
Solid Waste Section

c: Jim Coffey, DWM
Jim Barber, DWM
Brent Rockett, DWM
Hugh Jernigan, DWM
Mark Taylor, Ecologic Associates, P.C.

LCID LANDFILL CHECKLIST

File Name CAROLINA RESOURCE RECOVERY

.0564 SITING CRITERIA FOR LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS

The following siting criteria shall apply for Land Clearing and Inert Debris (LCID) landfills:

- (1) Facilities or practices, shall not be located in the 100-year floodplain.
- (2) Facilities or practices shall not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife.
- (3) Facilities or practices shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR Part 17 which is hereby incorporated by reference including any subsequent amendments and editions. This material is available for inspection at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, North Carolina 27605 where copies can be obtained at no cost.
- (4) Facilities or practices shall not damage or destroy an archaeological or historical site.
- (5) Facilities or practices shall not cause an adverse impact on a state park, recreation or scenic area, or any other lands included in the state nature and historic preserve.
- (6) Facilities shall not be located in any wetland as defined in the Clean Water Act, Section 404(b).
- (7) It must be shown that adequate suitable soils are available for cover, either from on or off site.
- (8) Land Clearing and Inert Debris landfills shall meet the following surface and ground water requirements:
 - (a) Facilities or practices shall not cause a discharge of pollutants into waters of the state that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), under Section 402 of the Clean Water Act, as amended.
 - (b) Facilities or practices shall not cause a discharge of dredged materials or fill material into waters of the state that is in violation of the requirements under Section 404 of the Clean Water Act, as amended.
 - (c) Facilities or practices shall not cause non-point source pollution of waters of the state that violates assigned water quality standards.

Survey per letter from Nat'l Heritage.



Need to clearly mark off on site & protect



Address



Check Dwg's.

(d)
 (e)

Waste in landfills with a disposal area greater than two acres shall be placed a minimum of four feet above the seasonal high water table, except where an alternative separation is approved by the Division.

Waste in landfills with a disposal area less than two acres shall be placed above the seasonal high water table.

(9) The facility shall meet the following minimum buffer requirements:

(a) 50 feet from the waste boundary to all surface waters of the state as defined in G.S. 143-212.

(b) 100 feet from the disposal area to property lines, residential dwellings, commercial or public buildings, and wells.

(c) Buffer requirements may be adjusted as necessary to insure adequate protection of public health and the environment.

(10) The facility shall meet all requirements of any applicable zoning ordinance.

.0565 APPLICATION REQUIREMENTS FOR LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS

Five sets of plans, maps, and reports shall be required with each application. The seal of a professional engineer is required when submitting plans for a Land Clearing and Inert Debris (LCID) landfill.

(1) The following information is required in order to review and approve the siting of a Land Clearing and Inert Debris (LCID) landfill:

(a) An approval letter from the unit of local government having zoning authority over the area where the facility is to be located stating that the site meets all of the requirements of the local zoning ordinance, or that the site is not zoned.

(b) Location on a county road map.

(c) Information showing that the bottom elevation of the waste shall be four feet above the seasonal high water table. Seasonal high water table elevations shall be obtained from on site test borings, test pits, or from other geological or water table investigations, studies, or reports from the immediate area of the proposed facility.

(d) A written report indicating that the facility shall comply with all the requirements set forth under Rule .0564.

(e) A copy of the deed or other legal description of the site that would be sufficient as a description in an instrument of conveyance, showing property owner's name.

(f) Any other information pertinent to the suitability of the proposed facility.

Check →
Show on Cross Section Dwg's.

(2) The following shall be provided on a map or aerial photograph with a scale of at least one inch equals four hundred feet showing the area within one-fourth mile of the site:

- (a) Entire property or portion thereof owned or leased by the person providing the disposal site.
- (b) Location of all homes, buildings, public or private utilities, roads, wells, watercourses, water or other impoundments, and any other applicable features or details.
- (c) 100-year flood plain boundaries, if any.
- (d) Wetland boundaries, if any.
- (e) Historical or archaeological sites, if any.
- (f) Park, scenic, or recreation area boundaries, if any.
- (3) Development and design plans and details, at a scale of at least one inch equals one hundred feet with one inch equals forty feet preferred, and specifications containing the following information shall be submitted with the application for a proposed Land Clearing and Inert Debris (LCID) landfill:
 - (a) Property or site boundary, fully dimensioned with bearings and distances, tied to North Carolina grid coordinates where reasonably feasible.
 - (b) Easements and right-of-ways.
 - (c) Existing pertinent on site and adjacent structures such as houses, buildings, wells, roads and bridges, water and sewer utilities, septic fields, and storm drainage features.
 - (d) Proposed and existing roads, points of ingress and egress along with access control such as gates, fences, or berms.
 - (e) Buffer and set back lines along with the buffered boundary or feature.
 - (f) Springs, streams, creeks, rivers, ponds, and other waters and impoundments.
 - (g) Wetlands, if any.
 - (h) Boundary of the proposed waste area.
 - (i) Existing topography with contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify existing topographic conditions.
 - (j) Proposed excavation, grading, and final contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify proposed grading. Excavation, grading, and fill material side slopes shall not exceed three to one (3:1).
 - (k) Where on site borrow for operational and final cover is proposed, indicate the borrow excavation and grading plan with contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify proposed grading.
 - (l) Proposed surface water control features and devices such as slope drains, storm water pipes, inlets, culverts, and channels.

Where?
is cover
soil obtained?

LQ
Permit if provided.

- (4m) Information showing that the project meets the requirements of 15A NCAC 4, Sedimentation Control Rules.
- (4n) Location of test borings or test pits, if used to determine the seasonal high water table elevation, shall be shown on the plans.
- (4o) A minimum of two cross-sections, one each along each major axis, per operational area showing:
 - (i) Original elevations.
 - (ii) Proposed excavation.
 - (iii) Proposed final elevations.
- (4) An operational plan addressing the requirements under Rule .0566 and containing the following information shall be submitted with the application for a proposed Land Clearing and Inert Debris (LCID) landfill:
 - (a) Name, address, and phone number of individual responsible for operation and maintenance of the facility.
 - (b) Projected use of the land after completion.
 - (c) Description of systematic usage of disposal area, operation, orderly development and closure of the landfill.
 - (d) Type, source, and quantity of waste to be accepted.
 - (e) An emergency contingency plan, including fire fighting procedures. *TO BE VISITED PRIOR TO OPS.*

Address →
Site plan →
→
→
→

.0566 OPERATIONAL REQUIREMENTS FOR LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS

Land Clearing and Inert Debris (LCID) landfills shall meet the following operational requirements:

- (1) Operational plans shall be approved and followed as specified for the facility.
- (2) The facility shall only accept those solid wastes which it is permitted to receive.
- (3) Solid waste shall be restricted to the smallest area feasible and compacted as densely as practical into cells.
- (4) Adequate soil cover shall be applied monthly, or when the active area reaches one acre in size, whichever occurs first.
- (5) 120 calendar days after completion of any phase of disposal operations, or upon revocation of a permit, the disposal area shall be covered with a minimum of one foot of suitable soil cover sloped to allow surface water runoff in a controlled manner. The Division may require further action in order to correct any condition which is or may become injurious to the public health, or a nuisance to the community.
- (6) Adequate erosion control measures, structures, or devices shall be utilized to prevent silt from leaving the site and to prevent excessive on site erosion.

LQ permit

(7) Provisions for a ground cover sufficient to restrain erosion must be accomplished within 30 working days or 120 calendar days upon completion of any phase of landfill development.

(8) The facility shall be adequately secured by means of gates, chains, berms, fences, etc. to prevent unauthorized access except when an operator is on duty. An attendant shall be on duty at all times while the landfill is open for public use to assure compliance with operational requirements and to prevent acceptance of unauthorized wastes.

(9) Access roads shall be of all-weather construction and properly maintained.

(10) Surface water shall be diverted from the working face and shall not be impounded over waste.

(11) Solid waste shall not be disposed of in water.

(12) Open burning of solid waste is prohibited.

(13) The concentration of explosive gases generated by the facility shall not exceed:

(a) Twenty-five percent of the lower explosive limit for the gases in facility structures.

(b) The lower explosive limit for the gases at the property boundary.

(14) Leachate shall be properly managed on site through the use of current best management practices.

(15) Should the Division deem it necessary, ground water or surface water monitoring, or both, may be required as provided for under Rules .0601 and .0602 of this Subchapter.

(16) A sign shall be posted at the facility entrance showing the contact name and number in case of an emergency and the permit number. The permit number requirement is not applicable for facilities not requiring an individual permit,

How? Testing?
Ops Plan
p. 2-12