

Alamance County 01-06
2006

01062006



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

December 28, 2006

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

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

Dear Mr. Scott:

Enclosed is the Carolina Resource Recovery permit renewal to operate a Large Type I Solid Waste Compost and Land Clearing Debris, Treatment and Processing Facility. Please carefully review the conditions of this permit.

Mr. Hugh Jernigan, Waste Management Specialist with the Solid Waste Section, is responsible for facility inspections. Mr. Jernigan can be reached at 336-771-5093.

If you have any questions in this matter please feel free to contact me at 919-508-8508.

Sincerely,

Ted Lyon, Supervisor
Composting & Land Application Branch

cc: Hugh Jernigan, Winston-Salem Regional Office
Mark Taylor
Central Files, Solid Waste Section

h:cla/compost/permits/01-alam/swc-01-06_2006cl



North Carolina Department of Environment and Natural Resources

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

Carolina Resource Recovery

is hereby issued a permit modification for the operation of a
**LARGE, TYPE 1 SOLID WASTE COMPOST FACILITY and a
TREATMENT and PROCESSING FACILITY**

Permit Number 01-06

at

Jones Road(SR 2131) in Alamance County, NC

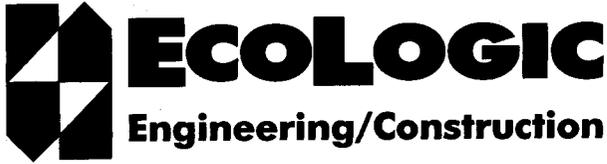
In accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit.

Paul S. Crissman, Chief
Solid Waste Section

Date

12-22-06

1. Operation and maintenance of this facility shall be in accordance with the Solid Waste Compost Rules (15A NCAC 13B), the permit application and the Facility Operating Plan 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 such a manner that it will not be allowed to adversely impact ground or surface waters.
3. This facility is responsible for meeting the requirements of Department rules or policies for the management of runoff from this facility. Any changes in the management of runoff shall be submitted to the Solid Waste Section as a permit modification.
4. 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.
5. Wastes with low carbon-nitrogen ratios, such as grass clippings, shall be incorporated into the windrows of the compost portion of the facility prior to the waste starting to compost (heat), create odors or attract vectors.
6. Compost temperature monitoring shall be conducted at a frequency adequate to assure the temperature requirements of Rule .1406(9) are met.
7. Compost, mulch, or other products produced from yard trash shall meet the pathogen reduction requirements of Rule .1406(9) if it is to be used in public contact areas or distributed to the public for use. Temperature records shall be maintained to demonstrate pathogen reduction requirements have been met.
8. Any fires at this facility shall be immediately reported to the NC Division of Waste Management and immediately extinguished.
9. Testing, record keeping and reporting shall be conducted in accordance with the requirements of Rule .1408 and the permit application. 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
10. Groundwater monitoring wells may be required if there is indication of the potential for groundwater contamination.
11. This facility 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.
12. **This permit shall expire on December 31, 2011.** Changes in ownership, increase in facility capacity, or receiving additional feedstocks shall require a permit modification.

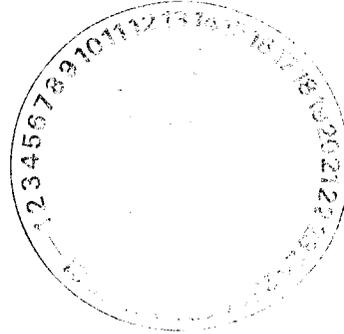


4321-A S. Elm-Eugene St. • Greensboro, NC 27406
(336) 335-1108 • Fax 335-3141
www.ecologic-nc.com

December 8, 2006

Mr. Ted Lyon, Solid Waste Section
NCDENR, Div. of Waste Management
401 Oberlin Road, Suite 150
Raleigh, NC 27605

RE: **Revised Permit Renewal Package (Permit No. 01-06)**
Carolina Resource Recovery, Mebane, North Carolina



Dear Ted:

On behalf of Steven S. Scott of Mebane, NC, EcoLogic Associates, P.C. offers this *revised* permit renewal application for Carolina Resource Recovery. The facility wishes to renew its Permit to Operate a Large, Type 1 solid waste composting and treatment and processing facility.

Regarding comments received from you on the application submittal dated November 6, 2006, the following revisions were made:

- (1) In the Composting Facility Operating Plan, a) it is specified that no yard trash will be processed in the low-rate composting piles (p. 3), b) it is specified that if the facility reaches capacity, it will stop receiving wastes (p. 7), and c) the amount of man-made inerts in finished compost is limited to 6 percent by weight;
- (2) In Figure 1, a) all areas are referred to as "Treatment and Processing" with no further references to overflow storage, and b) symbolic stockpile orientations more closely resemble actual site conditions;
- (3) Figure 1 and Drawing 4 are consistent in their representation of the size and shape of the 7.7-acre treatment and processing area; and
- (4) Documentation (from the original application) showing that the requirements of Rule .1404(a) (siting requirements) have been met is included with the submittal.

If you have questions regarding this submittal or the enclosures, please contact the undersigned at (336) 335-1108. Mr. Scott looks forward to receiving the renewed composting permit.

Respectfully,

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

Mark A. Taylor, PE, CPESC
Project Consultant

C: Steven S. Scott, Carolina Resource Recovery (with enclosure)
Hugh Jernigan, NCDENR, Div. of Waste Management, WSRO (with enclosure)

Enclosure: Updated Permit Application (4)
Technology Serving Ecology

Permit No. 01-06

APPROVED
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION
DATE 12/27/06 BY TJ

3

APPLICATION - PERMIT TO OPERATE

CAROLINA RESOURCE RECOVERY

MEBANE, NORTH CAROLINA

December 2006



Prepared for:

Steven S. Scott
Mebane, North Carolina



Prepared by:



EcoLogic Associates, P.C.

4321-A S. Elm-Eugene St.
Greensboro, North Carolina 27406
(336) 335-1108

APPLICATION FOR PERMIT TO OPERATE

**CAROLINA RESOURCE RECOVERY
Mebane, NC**

APPENDIX

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Ret-nts DdH #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

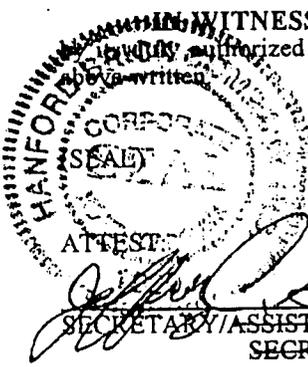
QUITCLAIM DEED

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



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 A. Crabtree

BOOK 1115 PAGE 845

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

97 OCT -6 19:25su

This the 6 day of Oct 1987
NADINE S. FUQUA Nadine S. Fuqua
Register of Deeds By Assistant/Deputy

NADINE S. FUQUA
REGISTER OF DEEDS
ALAMANCE COUNTY, N.C.

ALAMANCE COUNTY
OFFICE OF THE FIRE MARSHAL

D. Drew Sharpe

Fire Marshal

Emergency Management Coordinator

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.

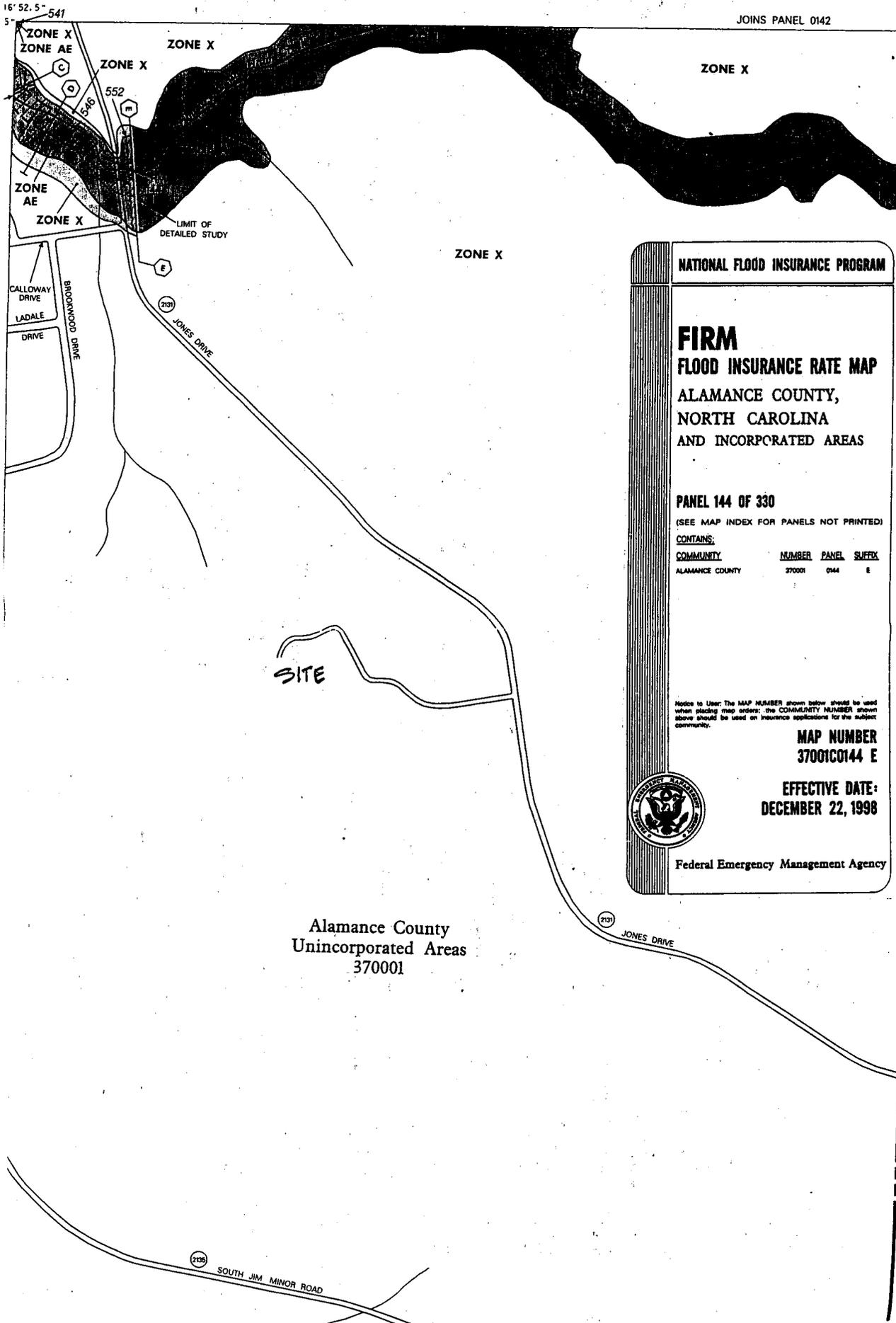
If you have any other questions or if I can be of further assistance, please do not hesitate to call me.

Yours truly,



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

JAB:jr



JOINS PANEL 0142

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
 ALAMANCE COUNTY,
 NORTH CAROLINA
 AND INCORPORATED AREAS

PANEL 144 OF 330

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALAMANCE COUNTY	370001	0144	E

Notice to User: The MAP NUMBER shown below should be used when placing map orders; the COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

MAP NUMBER
37001C0144 E

EFFECTIVE DATE:
DECEMBER 22, 1998



Federal Emergency Management Agency

Alamance County
 Unincorporated Areas
 370001



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.

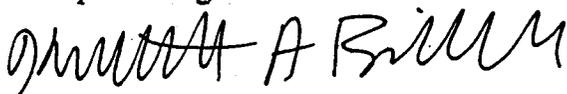
The potential rare plant species for the area includes Buttercup Phacelia, Narrow-leaved Aster, American Barberry, Piedmont Horsebalm from the Alamance County list and Prairie Blue Wild Indigo, Smooth Coneflower, Small Whorled Pogonia, Sweet Pinesap and Michaux's Sumac from the Orange County list. The 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



JAMES B. HUNT JR.
GOVERNOR

WAYNE McDEVITT
SECRETARY

DR. PHILIP K. MCKNELLY
DIRECTOR

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

August 12, 1999

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					
<i>Strophitus undulatus</i>	Squawfoot	T	-	S2S3	G5
<i>Villosa constricta</i>	Notched Rainbow	SR (PSC)	-	S3	G3G4
<i>Villosa delumbis</i>	Eastern Creekshell	SR	-	S3	G4
Vascular Plant					
<i>Phacelia covillei</i>	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					
<i>Lampsilis cariosa</i>	Yellow Lampmussei	T (PE)	FSC	S1	G3G4
Vascular Plant					
<i>Aster laevis</i> var <i>concinus</i>	Narrow-leaved Aster	C	-	S2	G5T4
<i>Berberis canadensis</i>	American Barberry	SR	-	S2	G3
<i>Collinsonia tuberosa</i>	Piedmont Horsebalm	C	-	S1	G3G4
Alamance-Obscure					
Vertebrate Animal					
<i>Hemidactylum scutatum</i>	Four-toed Salamander	SC	-	S3	G5
<i>Lanius ludovicianus ludovicianus</i>	Loggerhead Shrike	SC	-	S3B, S3N	G5T5
Vascular Plant					
<i>Monotropsis odorata</i>	Sweet Pinesap	C	FSC	S3	G3



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" followed by a small mark.

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												
Piez. #	Current		Depth to Groundwater (feet below ground surface)								Former	
	GS Elev.*	TOC Elev.*	3/27/01	4/4/01	4/18/01	4/23/01	5/4/01	5/11/01	SHGE ¹	Stick-up	GS Elev.**	
P-1	595.0	597.23	1.2	-0.3	1.6	2.4	3.3	4.0	593.4	2.2	593.9	
P-2	591.8	594.30	3.1	1.5	3.2	3.4	4.0	5.0	588.6	2.5	589.9	
P-3	589.3	591.64	3.9	3.2	3.3		3.7	4.1	585.6	2.3	587.3	
P-4	597.7	599.55	4.0	3.0	3.5		5.2	5.7	592.9	1.8	596.0	
P-5	596.1	597.93	5.9	5.6	5.7	5.7	5.7	5.7	590.4	1.8	594.2	
P-6	591.4	592.87	6.3	5.7	6.0	6.0	6.0	6.0	585.4	1.5	588.7	
					denotes reading 24 hours after bailing down							
* From survey after grading					denotes reading 120 hours after bailing down							
** Before grading site in Feb., 2001					denotes reading used to determine SHGE							
1 Seasonal High Groundwater Elevation interpreted from data												
NOTE: Piezometers were drilled on March 2 and 3, 2001												

GROUNDWATER OBSERVATIONS									
Near-surface Hydrogeologic Exploration Carolina Resource Recovery, Mebane, NC									
Depth to Groundwater (feet below ground surface)									
<u>Boring/TP</u>	<u>GS Elev.*</u>	<u>Depth (Ft.)</u>	<u>10/25/99**</u>	<u>10/26/99</u>	<u>10/29/99</u>	<u>5/19/00**</u>	<u>5/26/00***</u>	<u>6/5/00</u>	<u>SHGE¹</u>
B-1	621.3	2.7	Dry	Dry	Dry				
B-2	621.2	2.8	Dry	Dry	Dry				
B-3	618.0	2.7	Dry	Dry	Dry				
B-4	610.5	3.2	Dry	Dry	Dry				
B-5	606.7	3.0	Dry	Dry	Dry				
B-6	605.8	2.8	Dry	2.7	Damp				
B-7	612.2	2.7	Dry	Dry	Dry				
B-8	608.1	2.7	Dry	Dry	Dry				
B-9	585.2	2.8	Dry	Dry	Dry				
TP-10	585.0	4.0	Dry	Dry	Dry				
B-11	587.1	2.3	Dry	Dry	Dry				
B-12	577.1	2.9	Dry	Dry	Dry				
TP-13	595.7	5.0	Dry	Damp	4.8	Dry	3.3	3.0	592.7
TP-14	596.0	3.8	3.8	1.5	1.7	Dry	1.7	Dry	594.3
TP-15	590.1	4.5	Dry	3.3	3.5	Dry	1.4	Dry	588.7
TP-16	601.8	5.0	Dry	Damp	Dry				
TP-17	613.3	5.0	Dry	Dry	Dry				
TP-18	591.2	4.5				Dry	2.6	3.5	587.7
TP-19	590.4	5.0				Dry	0.7	0.5	589.9
TP-20	598.7	4.5				Dry	3.3	3.0	595.7
* From survey after drilling/excavating.									
** Measurement taken immediately after excavation/drilling.									
*** After heavy rains, influence of surface runoff uncertain.									
1 Seasonal High Groundwater Elevation interpreted from available data									
denotes reading used to determine SHGE									

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

Administrative Services

Telephone 228-1312
Area Code 336

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



Alan W. Klimek, P.E., Director
Division of Water Quality

August 23, 2002

RECEIVED
N. C. DEPT. OF ENVR

AUG 29 2002

STEVEN SCOTT
CAROLINA RESOURCE RECOVERY
3285 JONES DRIVE
MEBANE, NC 27302

Subject: NPDES Stormwater Permit Renewal
CAROLINA RESOURCE RECOVERY
COC Number NCG120063
Alamance County

Winston-Salem
Regional Office

Dear Permittee:

In response to your renewal application for continued coverage under general permit NCG120000, the Division of Water Quality (DWQ) is forwarding herewith the reissued stormwater general permit. This permit is reissued pursuant to the requirements of North Carolina General Statute 143-215.1 and the Memorandum of Agreement between the state of North Carolina and the U.S. Environmental Protection Agency, dated December 6, 1983.

The following information is included with your permit package:

- * A new Certificate of Coverage
- * A copy of General Stormwater Permit NCG120000
- * A copy of the Analytical Monitoring Form (DMR)
- * A copy of a Technical Bulletin for the general permit

Your coverage under this general permit is not transferable except after notice to DWQ. The Division 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 DENR or relieve the permittee from responsibility for compliance with any other applicable federal, state, or local law, rule, standard, ordinance, order, judgment, or decree.

If you have any questions regarding this permit package please contact Aisha Lau of the Central Office Stormwater and General Permits Unit at (919) 733-5083, ext. 578

Sincerely,

Bradley Bennett

Bradley Bennett, Supervisor
Stormwater and General Permits Unit

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

Post-it® Fax Note	7671	Date	12/13/06	# of pages	1
To	MARK	From	JENNY FREEMAN		
Co./Dept.	ECO-LOGIC	Co.	DENR/DWQ		
Phone #		Phone #	771-4960		
Fax #	335-3141	Fax #	771-4630		



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

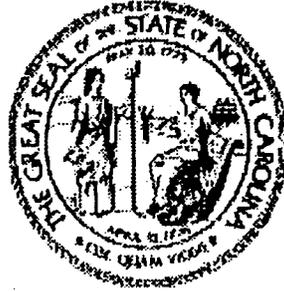
TGH/grh

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



G. Gray Harvey
Asst. Regional Engineer

OPERATING PLAN

CAROLINA RESOURCE RECOVERY

COMPOSTING FACILITY

MEBANE, NORTH CAROLINA

December 2006 (Revision 3)

Prepared for:

Steven S. Scott
Mebane, North Carolina

Prepared by:



EcoLogic Associates, P.C.

4321-A S. Elm-Eugene St.
Greensboro, North Carolina 27406

**APPLICATION FOR PERMIT TO OPERATE
CAROLINA RESOURCE RECOVERY**

Mebane, NC

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FACILITY PURPOSE AND OVERVIEW

Name of Facility: Carolina Resource Recovery
Address: 3285 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 a large Type I composting facility along with a land clearing and inert debris (LCID) treatment and processing operation. The overall operational goal of the facility is to complement the integrated landscape products production and distribution operations of Scott 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 storm debris, yard waste, and other acceptable organics from residential and commercial generators for recycling.

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. At the Solid Waste Section's request, EcoLogic contracted a biologist to survey the Carolina Resource Recovery site for rare species habitat. A letter dated August 18, 2000 from Ken Bridle, PhD of Heritage Lands Associates is included in the Appendix, which summarizes the findings. Dr. Bridle concludes that no rare species nor habitat for same occur on the site.

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 possible jurisdictional wetlands were noted. Refer to the attached letter from Spangler Environmental, Inc. dated October 4, 1999 included in the Appendix. During a subsequent site visit by Ken Bridle, PhD of Heritage Lands Associates, he concluded 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. A letter from Dr. Bridle dated August 18, 2000 is included in the Appendix.

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 anticipated topsoil blending needs.

Groundwater and Rock A subsurface exploration was performed to address the various criteria for vertical separation between waste treatment and processing 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. Additional test pits were excavated in the southwest quadrant of the T&P area in May, 2000 and checked over a period of weeks for groundwater occurrence and fluctuation. Further attempts to define seasonal high groundwater occurrence in the T&P area were postponed through the summer and fall of 2000 (when seasonal low levels normally prevail).

It was decided to clear and rough grade the T&P area in the winter of 2001 to remove the undulations and irregularities remaining from former clay mining on site. The site grading was completed in February 2001, and six sealed piezometers (2-inch PVC) were installed in the T&P area in early March. Groundwater observations were made in the piezometers on six occasions between March 27 and May 11, 2001. With the exception of an anomalous rise in early April associated with heavy rains, a relatively rapid decline in groundwater levels was observed over the observation period.

Outcroppings and/or areas of exposed weathered rock were evident in some previously excavated areas of the site, but a subsurface exploration revealed that these materials could be excavated with conventional equipment and thus were not rock.

CRR Application for Permit to Operate

Refer to the tables titled "Test Boring/Pit Log" and "Groundwater Observations" (two) 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, Alamance County Planning Department dated November 1, 1999 included in the Appendix.

Stormwater

NC DENR's Division of Water Quality issued NPDES General Permit No. NCG120000 to Carolina Resource Recovery on July 14, 2000. It was renewed in 2005. The Certificate of Coverage number is NCG120063A and a copy is included in the Appendix. Stormwater leaving the site in existing intermittent streams discharges into an unnamed tributary to Haw Creek (WS-V NSW classification).

Erosion and Sediment Control

An erosion and sediment control plan for the facility was approved by the Land Quality Section of the NC Division of Land Resources. 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 is located in the central portion of the site and will occupy about 10.5 acres at build-out (see Design Plan and Figure 1). The existing grade will be utilized as the base grade, for the most part, though excavation 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 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 for low-rate decomposition 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 21,000 cubic yards of stockpiled materials at capacity. At the design inflow of 600 cubic yards per week, about 35 weeks of storage and low-rate decomposition of unprocessed organic waste is available in the T&P area.

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 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)), 250 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 facility's Treatment and Processing Area (see Design Plan 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

CRR Application for Permit to Operate

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:

CRR Application for Permit to Operate

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 and/or limits on operating hours and/or intake quantity can be imposed.

CRR Application for Permit to Operate

Site personnel will consist of the following:

- Site Operator:** Supervises site operations and site personnel under the direction of the General Manager. Also controls access and directs vehicles.
- Equipment Operators:** Operate equipment associated with composting operations.
- Technicians:** Perform labor and monitoring tasks at the site.

OPERATING PLAN
CAROLINA RESOURCE RECOVERY
LCID TREATMENT & PROCESSING FACILITY

Mebane, NC

Steven S. Scott, Owner	919-563-3469	Office
	336-214-7229	Cell
Charles Moretz, Site Operator	336-693-9784	Cell
Emergency Contact (24 Hours)	Steven S. Scott, Owner	
Swepsonville Fire Dept.	336-578-1500	Fire Station
FIRE/RESCUE EMERGENCIES	911	Fire/EMS

Operating Hours: Mon. – Fri.: 8:00 am – 5:00 pm
Sat.: 7:00 am – 12:00 pm by appointment

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

Land-clearing debris, yard waste, uncontaminated soil, untreated and unpainted wood (excluding dimension lumber), uncontaminated pallets (owner-generated only), storm debris and yard trash. Yard trash and leaves will be directed to the adjacent, on-site composting area for recycling into compost for blending and/or direct sale.

2. A design inflow for organic wastes of 600 cubic yards per week (the equivalent of 50 tandem axle dump trucks) is projected. Reusable inert materials such as brick or stone may be transported to neighboring Scott 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, separating soil from stumps, grinding and screening organic wastes and soil, and blending partially or fully composted organic waste with soil.
4. The processed organic waste will be blended with soil for sale to landscaping contractors and others.

5. Screening, grinding and blending operations will occur primarily in the product storage, screening and sales area. Because the screen and grinder are mobile, the west end of the T&P area is designated as an alternate site for organic waste screening and grinding. 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 21,000 cubic yards of stockpiled materials at capacity. At the design inflow of 600 cubic yards per week, about 35 weeks of storage of unprocessed organic waste is available.
6. All non-recyclable material will be stored on site in a designated (small) area, then transferred to a 40-cy roll-off container when sufficient volume accumulates. Facility personnel shall be responsible for transporting the roll-off container to an appropriate and properly permitted disposal facility.
7. The following equipment is available for use at the facility. Additional equipment and vehicles are available at Scott Stone (contiguous site) for use at the facility as needed.

1998 Komatsu 200 Excavator

1998 Daewoo 170 Excavator

1999 Extec Screener with vibrating grid and stacking conveyor

1980 Fiat Allis 345-B Loader

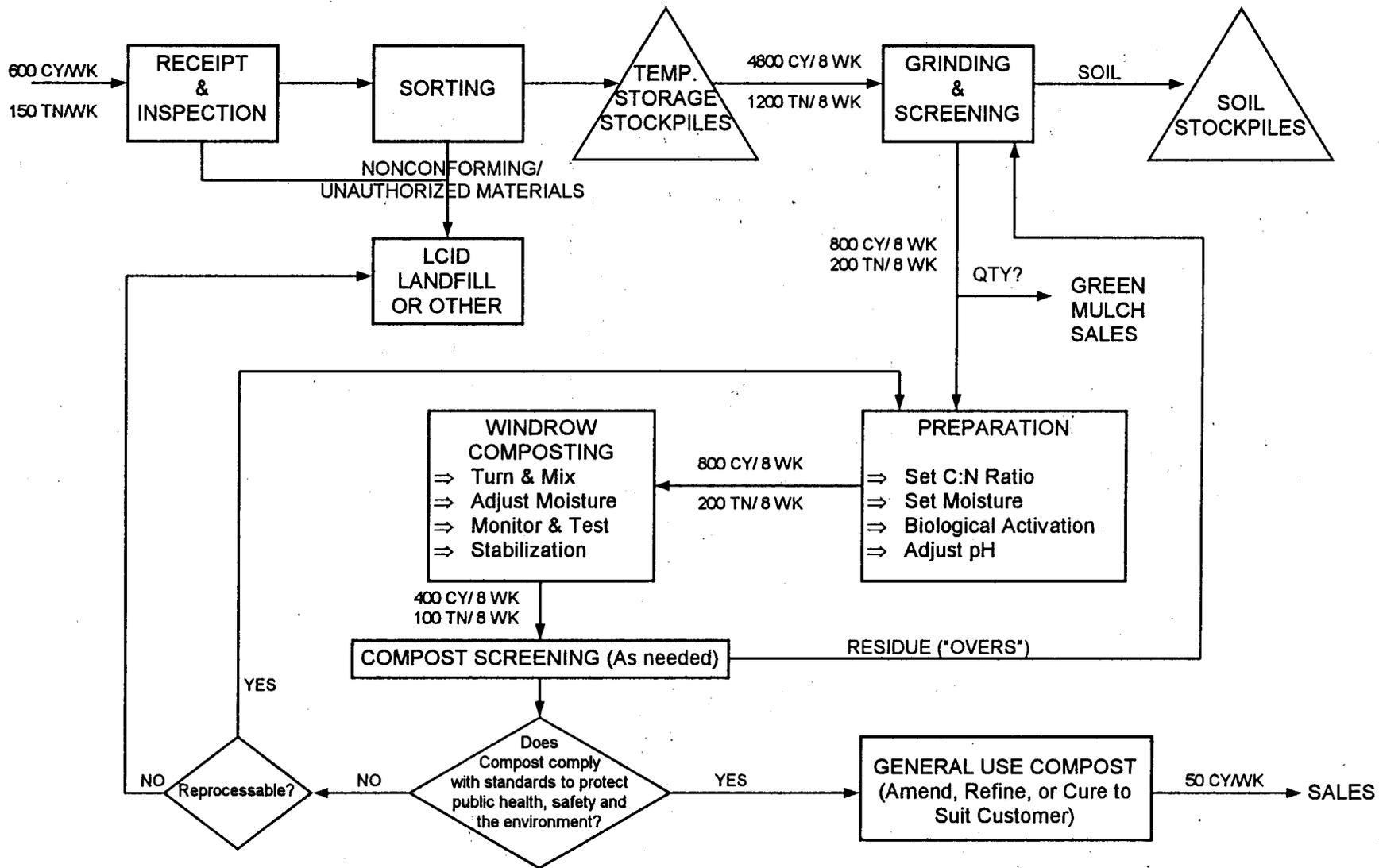
Ford 555-B Loader

1988 Dresser 520B Wheel Loader

1997 John Deere 5300 Tractor with 540 Loader

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. A separate sign directs feedstock deliveries to the office at neighboring Scott Stone to obtain a ticket prior to off-loading.
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.

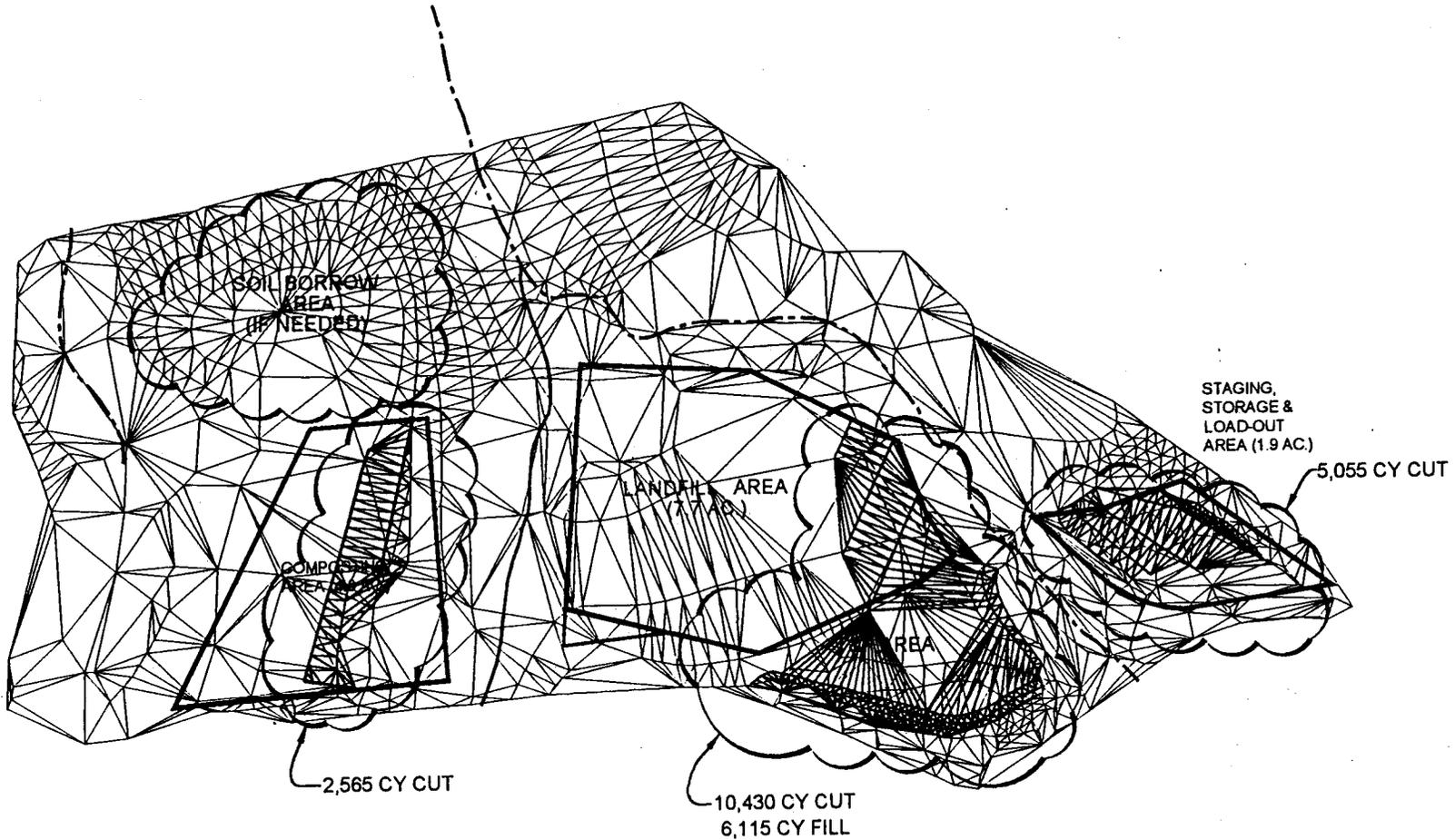


**CAROLINA RESOURCE RECOVERY COMPOST FACILITY
ORGANIC WASTE FLOW DIAGRAM**

June 2000

FIGURE 3

EcoLogic Associates, P.C.



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

June 2000

FIGURE 4

Ecologic Associates, P.C.

OPERATING PLAN
CAROLINA RESOURCE RECOVERY COMPOSTING FACILITY
Mebane, NC

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Exhibits

Compost Product Information Sheet

CRR Composting Facility Operating Plan

I. Facility Overview

Steven S. Scott, Owner and General Manager	919-563-3469 336-214-7229	Office Cell
Charles Moretz, Site Operator	336-693-9784	Cell
Emergency Contact (24 Hours)	TBA	
Sweptonville Fire Dept.	336-578-1500	Fire Station
FIRE/RESCUE EMERGENCIES	911	Fire/EMS

Site Personnel:

- Site Operator:** Supervises site operations and site personnel under the direction of the General Manager. Also controls access 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 a land clearing and inert debris (LCID) treatment and processing operation. The overall operational goal of the facility is to complement the integrated landscape products production and distribution operations of Scott 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 storm debris, yard waste, and other acceptable organics 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	8:00 am - 5:00 pm
Saturday	7:00 am - 12:00 pm by appointment
Sunday	Closed

B. Receiving

All vehicles entering the facility will be stopped and directed to the nearby Scott Stone office, where pertinent information will be recorded on a ticket and/or repeat customer log, with the hauler name, vehicle type and size, and type of waste materials noted. The office attendant will then direct the vehicle driver to the site, where the Site Operator will direct the vehicle to the appropriate off-loading area (i.e. treatment and processing area, yard waste composting area, etc.). The Site Operator will select vehicles on a random or targeted basis and conduct an inspection of materials as they are being off-loaded. The visual inspection will help assure 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 treatment and processing area will be that portion of the facility so designated (see Design Plan) for the off-loading and storage of incoming materials. The treatment and processing area will also be used, secondary to the product storage, screening and sales area, for processing materials, i.e., grinding of wood, separation of soil and wood, 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. Low Rate (Passive) Decomposition

Land clearing and storm debris and other high C:N wastes will be piled in linear stockpiles averaging 14 feet high by 30 feet wide at the base in the treatment and processing areas (see Figure 1). Yard trash and leaves and other low C:N wastes will not be incorporated into this process. Some variation in the alignment of stockpiles is expected, but the piles will be oriented to provide drainage so water won't pond on the site. The organic fraction of these piles will be allowed to decompose slowly without turning or other interventions.

Occasionally, the piles will be relocated a short distance for the purpose of separating and harvesting soil and loose compost from the partially decomposed wood. This restacking will also provide for increased aeration by renewing void space lost to settlement and filling of the interstices with soil and decomposed organics. Periodically, when justified by economics and/or site space considerations, all or part of the stockpiled woody debris will be ground to create mulch for sale or to create high C feedstock input to the high rate composting process in the adjacent (yard waste) composting area.

E. High Rate (Active) Decomposition

The first stage of high rate composting of low C:N wastes 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 (yard waste) 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.

F. 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.

G. 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 and blending operations will occur primarily in the product storage, screening and sales area. Because the screen is mobile, the west end of the T&P area is designated as an alternate site for organic waste screening and blending (see Design Plan). Oversize material will be run back through the process or utilized as mulch. Foreign matter will be disposed of in an appropriate permitted off-site facility. Curing will be effected in the overflow or final storage areas 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 as needed.

H. Storage and Load-Out

In the storage, screening and sales area, market-ready compost will be stockpiled until sale. The storage, screening and sales 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 with the Site Operator. The Site Operator will direct trucks to

CRR Composting Facility Operating Plan

the storage, screening and sales area and notify the facility staff of the need to load product. The loaded vehicles will then be directed to the nearby Scott Stone office for checkout. At time of checkout, each new customer will be provided a copy of the Compost Product Information Sheet (see attached exhibit).

I. 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 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, or limits on operating hours and/or intake quantity can be imposed.

III. Operating Procedures

The purpose of this section is to establish 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 and storm debris, yard waste, uncontaminated soil,

CRR Composting Facility Operating Plan

untreated and unpainted wood waste (excluding dimension lumber), uncontaminated pallets (owner-generated only), yard and garden trash (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 Site Operator 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 Site Operator 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.

When possible, loads will be examined for contaminants, nonconforming and/or unauthorized 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 receiving areas, those materials shall be separated by the facility staff. All non-recyclable material will be stored on site in a designated (small) area, then transferred to a 40-cy roll-off container when sufficient volume accumulates (see Figure 1). Facility personnel shall be responsible for transporting the roll-off container to an appropriate and properly permitted disposal facility.

Land clearing and storm debris and other high C:N wastes will be directed to the treatment and processing areas. These areas will be used to segregate incoming wastes prior to processing and to stockpile organic wastes prior to grinding. Yard trash and leaves and other low C:N wastes will be directed to the adjacent, on-site composting area for recycling into compost for blending and/or direct sale. If the facility reaches or has reached capacity, waste receipt will be halted until space is available to resume normal operations.

The preparation of incoming wastes, when needed, may consist of grinding and/or mixing of

stumps, wood waste, brush, leaves, etc. This preparation will be performed in the treatment and processing area, or directly in the composting area in the case of mixing of suitably sized incoming feedstocks (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 other areas for incoming materials.

C. Windrow Composting (High Rate Decomposition)

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 produce 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 processed land-clearing debris, municipal yard trash including grass and plant clippings and leaves. Leaf wastes may be expected in the fall and Christmas trees in January.

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.

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 roughly as shown on Figure 2. Some variation in the alignment of windrows is expected, but the rows will be oriented to provide drainage so water won't pond on the site. 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 or excavator. 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 or excavator.

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 or excavator 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 shall 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 or excavator. The loader or excavator 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 occur primarily in the product storage, screening and sales area and secondarily 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 designated area for removal in a 40-cy roll-off container (see Figure 1 and Design Plan).

Curing will be effected in the overflow or final storage areas 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 Site Operator 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 or 6 percent by weight. 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, 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);
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 mobile tub grinder that will operate infrequently and for short periods. 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 Stone, Inc., a landscape materials supplier owned by the 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 other 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 III.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 Site Operator, assisted by the office staff at Scott Stone, 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, or processing for compost.

CRR Composting Facility Operating Plan

Tree trimmings	1,300
Land & storm debris	1,500
Finished compost	1,400

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 identified 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, 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 Stone (contiguous site) for use at the facility as needed.

- 1998 Komatsu 200 Excavator
- 1998 Daewoo 170 Excavator
- 1999 Extec Screener with vibrating grid and stacking conveyor
- 1980 Fiat Allis 345-B Loader
- Ford 555-B Loader
- 1988 Dresser 520B Wheel Loader
- 1997 John Deere 5300 Tractor with 540 Loader

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 General 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 maintained in the Scott Stone office, 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 (high rate) composting process is exothermic, i.e., heat is generated by the high rate decomposition process. If excessive heat develops in the presence of flammable

CRR Composting Facility Operating Plan

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 maintained in the Scott Stone office and by all on-site mobile 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