Permit Renewal Application

City of High Point
Ingleside Compost Facility (Permit 41-10)
High Point, North Carolina

APPROVED DOCUMENT
Division of Waste Management
Solid Waste Section
Approved June 8, 2012
By D. Wilson
Facility ID 4110-COMPOST
Attch. 1, Part II, Doc 4
Doc ID 16539

Prepared For:

City of High Point Department of Public Services
211 South Hamilton Street
High Point, North Carolina 27260

Prepared By:

RICHARDSON SMITH GARDNER
& ASSOCIATES
ENGINEERING & GEOLOGICAL
SERVICES
14 N. BOYLAN AVENUE
RALEIGH, NORTH CAROLINA 27603
NC LIC. NO. C-0828 (ENGINEERING)

November 2009
Revised: January 2011

PERMIT RENEWAL APPLICATION

Ingleside Compost Facility
High Point, North Carolina

Prepared for:
City of High Point Public Services Department
High Point, NC

RSG Project No. HPOINT-09-2

Pieter K. Scheer, P.E.
Principal, Senior Engineer

1/10/2011

November 2009
Revised: January 2011

RICHARDSON SMITH GARDNER
& ASSOCIATES
ENGINEERING & GEOLOGICAL
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14 N. BOYLAN AVENUE
RALEIGH, NORTH CAROLINA 27603
NC LIC. NO. C-0828 (ENGINEERING)

RICHARDSON SMITH GARDNER
& ASSOCIATES
ENGINEERING & GEOLOGICAL
SERVICES

January 21, 2010

Mr. Michael E. Scott
Supervisor
NC DENR - Division of Waste Management
Composting & Land Application Branch
1646 Mail Service Center
Raleigh, NC 27699

Re: City of High Point
Ingleside Compost Facility (Permit No. 41-10)
Permit Renewal Application
Response to Review Comments

Dear Mr. Scott:

Richardson Smith Gardner & Associates, Inc. (RSG) appreciates your review of the above referenced plan. We would like to respond to the comments addressed in your letter dated May 4, 2010 (see **attached**), as follows. The review comments are repeated below in *italics* and our response follows in **bold**. Note that the revised documents (see attachment list at the end of this letter), which are provided as attachments, are dated January 2011.

I. *General*

1. *In accordance with NCGS 130A-295.8(c), a large composting facility shall pay a fee of $1,250 for its permit renewal.*

A check for $1,250 is attached.

II. *Permit Renewal Application*

1. *Page 4, Section 4.2: Provide an updated local zoning letter from City of High Point Planning & Development Department to replace the existing letter which was issued more than 10 years ago (in 1999).*

Attached is a copy of an updated zoning letter from the City.

2. *Page 4, Section 4.4: Clarify if there are seasonal variations in the incoming wastes in the facility. If so, provide a chart to show the monthly or seasonal variations of the incoming wastes.*

Certainly there are seasonal variations. As one would expect in this region, the quantity of grass clippings is high in the spring and summer months and the quantity of leaves is high in the fall and early winter months. A graph showing how these materials varied over the course of a typical year (FY 2009-10) is attached.

3. *Page 4, Section 4.4: Provide the tonnage of incinerated ash received at the facility during the FY 2008-2009.*

In 2008, the City received 714 tons of incinerator ash. In 2009, the City received 609 tons of incinerator ash. Section 4.4 has been revised to indicate these tonnages.

4. *Page 4, Section 4.4: Provide a copy of the latest analytical result of the incinerated municipal sludge ash.*

A copy of analytical testing from 2008 and 2009 is attached.

5. *Page 6, Section 7.6: Provide a copy of the chemical analyticals, nutrient levels, and pH level(s) of the "engineered soil".*

A copy of test results from a waste analysis performed by the NCDA&CS Agronomic Division is attached.

6. *Page 6, Section 8.1: Provide a preliminary engineering calculation to demonstrate that the active windrow area can accommodate the design capacity of 25,000 tpy at the proposed production pace (9-12 weeks for windrowing plus 3-4 weeks for stabilizing) and windrowing dimension.*

The City currently keeps compost in windrows for a period of about 5 months during which time most stabilization occurs. After removal of the compost from the windrow area to the final storage area, the compost remains on-site for another 1 to 3 months (during which final curing occurs). Note that time references have been corrected in the attached revised Operations Plan.

The estimated capacity of 25,000 tons per year for the facility is based on all materials received. Thus, it is not anticipated that 25,000 TPY can be turned into compost. The estimated design capacity for compost is approximately 9,185 TPY based on the attached calculations. This is about 66 percent greater than the 5,535 TPY of compost produced in FY 2008-09. The amount of wood wastes (brush and limbs) processed is more variable (dependent on periodic storm damage). This material can be ground into mulch and, thus, removed from the facility in final form much sooner.

Section 8.1 has been revised to state the approximate capacity for composting.

7. *Page 6, Section 8.2 and Appendix A: Insert the 25,000 TPY process capacity at the top/beginning of the flow diagram, and demonstrate how much end products are produced at each of the processing boxes and at the end/bottom boxes of the flow diagram.*

Per the response to Comment 6 above, it is not practical to determine the quantity of end products as the amount of incoming materials is so variable (particularly for wood wastes). The flow diagram has been revised to indicate the capacity for composting (per response to Comment 6).

8. *Page 9: Provide an update of the City's application for the facility's storm-water permit at NCDWQ, and a copy of the permit if available.*

From prior discussions with the DWM and the DWQ and per the City's meeting on-site with Corey Basinger of NCDWQ on November 30, 2010, we understand, with the consideration of the Compost Stakeholder's Group and HB 1100, that the City's best course of action is to delay the application for a NPDES permit until a final rule is developed for compost facilities. As such, the City of High Point fully intends to comply with the final version of the proposed rule and the associated compliance schedule.

Sections 3.6 and 10.4 have been revised to note this future compliance.

III. *Operations Plan*

1. *Page 4, Windrow Method: Specify the windrow dimension.*

The cross section of a typical windrow is approximately 15 feet wide at the base and 6 feet high with a top width of 1 foot. These dimensions have been revised under the section entitled "Windrow Construction" on Page 9.

2. *Page 8, Acceptable Materials: Change the word of "biodegradable" to "compostable".*

This change has been made.

3. *Pages 8-9, Preparation of Materials: Provide a typical composting mixing recipe the ICF facility utilizes to mix wood waste and yard/silvicultural wastes to achieve an ideal initial C:N ratio of 40:1 to 20:1.*

Due to seasonal variations, the City does not have a stated "recipe" for composting various materials. Instead the City grinds all materials and constructs windrows primarily of leaves and turns in grass clippings as needed to achieve necessary temperatures. During the fall and winter months, the leaves remain dormant until grass clippings become available.

The section entitled "Windrow Construction" (pages 9-13) describes the general mixing process and targets for nutrient levels, temperatures, etc.

4. *Page 10, Windrow Construction: Specify what testing procedures are used to determine proper moisture level in the windrow.*

The City monitors moisture visually and by hand. Also, while additional water could be required in the case of extended dry conditions, moisture addition is typically dependent on rainfall. Also, no water is allowed to pond in the areas between windrows.

The subsection entitled "Moisture" on page 10 has been revised to reflect this.

5. *Page 14, Odor, Dust, and Vector Control: detailed discussion in this section to address what kinds of corrective actions would be taken if an offensive odor occurs and/or crosses the property boundary.*

   The City has an odor control spray system (generator/atomizing sprayer/deodorant) already in-place that can be used in the event odors become an issue. The City has operated for about 3.5 years without need for using this system. Note that the City changed their operational process about 3.5 years ago to begin grinding all materials. This is believed to have minimized the potential for odors.

   The City utilizes a fly spray (Hitman D brand) as needed if flies are observed. The use of this spray has been less frequent since the City began grinding all materials.

   The above information has been added to the section on Odor, Dust, and Vector Control.

6. *Page 16: Clarify how an how often monitoring equipment, such as temperature probes, are calibrated at ICF.*

   The City uses analog temperature probes (Reotemp brand). This type of probe usually gives an obviously erroneous reading when not operating properly. Probes are replaced when this occurs. This information has been added to the section entitled "Equipment".

Please contact me at your earliest convenience with any questions or comments which you may have on this submittal or any further questions or comments you may have on the application.

Sincerely,
Richardson Smith Gardner & Associates, Inc.

Pieter K. Scheer, P.E.
Project Manager
pieter@rsgengineers.com

Attachments: NC DWM Letter - May 4, 2010
Zoning Consistency Letter
Graph of Materials Received - FY 2009-10
Analytical Results - Incinerator Ash (2008 & 2009)
NC DA&CS Waste Analysis Report - Engineered Soil
Windrow Area Capacity Calculation
Revised Permit Renewal Application

cc: Richard McMillan, P.E., City of High Point
Steve Pendry, City of High Point

North Carolina Department of Environment and Natural Resources
Division of Waste Management

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

May 4, 2010

Steve Pendry, Manager
City of High Point Ingleside Solid Waste Composting Facilities
3001 Ingleside Drive
High Point, NC 27265

Subject: City of High Point
Ingleside Large Type-1 Solid Waste Composting Facility
Permit Renewal Application and Operation Plan
Facility Permit No.: SWC-41-10

Dear Mr. Pendry:

The Division of Waste Management Solid Waste Section has completed its technical review of the subject Permit Renewal Application and Operation Plan. A copy of the comments resulting from the review is attached for your reference. These comments are also being sent to your engineer, Pieter K. Scheer, P.E. of Richardson Smith Gardner & Associates Engineering & Geological Services by copy of this letter. A revised Permit Application and Operation Plan of that incorporates responses to these comments should be submitted for our review and approval as soon as possible. Providing thorough and complete responses to these comments in a timely manner is necessary to avoid delays of the Division's decision on the Permit Application.

If you or your engineer have any question or need assistance in resolving the technical review issues, please contact Mr. Zi-Qiang Chen, PhD, at (919)-508-8523. Also, you may contact me at (919)-508-8508.

Sincerely,

Michael E. Scott, Supervisor
Composting & Land Application Branch

ZQC:dr

Attachment (all cc's)

cc: Pieter K. Scheer, P.E. , Richardson & Asso., 14 N Boylan Ave, Raleigh, NC 17603
Hugh Jernigan, NCDWM Field Operations Branch
Zi-Qiang Chen, Ph.D., Environmental Engineer II
DWM/SWS/CLA/PERMIT

CITY OF HIGH POINT
Ingleside Compost Facility

Technical Review Comments
for
Large Type-1 Solid Waste Composting Facility Permit Application
and the Operation Plan
Facility Permit No.: SWC-41-10

May 4, 2010

NOTE: Please provide a response to all of the comments on a "comment for comment" basis. Where appropriate, add or revise narrative in the text of the Permit Application that addresses the issues discussed in the comments. In addition, the comments and responses may be included as a part of the revised Permit Application and Operations Manual (e.g. in an appendix).

I. General

1. In accordance with NCGS 130A-295.8(c), a large composting facility shall pay a fee of $1,250 for its permit renewal.

II. Permit Renewal Application (§)

1. Page 4, §4.2: Provide an updated local zoning letter from City of High Point Planning & Development Department to replace the existing letter which was issued more than 10 years ago (in 1999).

2. Page 4, §4.4: Clarify if there are seasonal variations in the incoming wastes in the facility. If so, provide a chart to show the monthly or seasonal variations of the incoming wastes.

3. Page 4, §4.4: Provide the tonnage of incinerated ash received at the facility during the FY 2008-2009.

4. Page 4, §4.4: Provide a copy of the latest analytical result of the incinerated municipal sludge ash.

5. Page 6, §7.6: Provide a copy of the chemical analyticals, nutrient levels, and pH level(s) of the "engineered soil".

6. Page 6, §8.1: Provide a preliminary engineering calculation to demonstrate that the active windrow area can accommodate the design capacity of 25,000 tpy at the proposed production

pace (9-12 weeks for windrowing plus 3-4 weeks for stabilizing.) and windrowing dimension.

7. Page 6, §8.2, and Appendix A: Insert the 25,000 TPY process capacity at the top/beginning of the flow diagram, and demonstrate how much end products are produced at each of the processing boxes and at the end/bottom boxes of the flow diagram.

8. Page 9: Provide an update of the City's application for the facility's storm-water permit at NCDWQ, and a copy of the permit if available.

III. Operations Plan (§§)

1. Page 4, §§ Windrow Method: Specify the windrow dimension.

2. Page 8, §§ Acceptable Materials: Change the word of "biodegradable" to "compostable".

3. Pages 8-9, §§ Preparation of Materials: Provide a typical composting mixing receipt the ICF facility utilizes to mix wood wastes and yard/silvicultural wastes to achieve an ideal initial C:N ratio of 40:1 to 20:1.

4. Page 10, §§ Windrow Construction: Specify what testing procedures are used to determine proper moisture level in the windrow.

5. Page 14, §§ Odor, Dust, and Vector Control: detailed discussion in this section to address what kinds of corrective actions would be taken if an offensive odor occurs and/or crosses the property boundary.

6. Page 16: Clarify how and how often monitoring equipment, such as temperature probes, are calibrated at ICF.

RICHARDSON SMITH GARDNER & ASSOCIATES
Engineering and Geological Services

TRANSMITTAL FORM

If enclosures are not as noted or
if you require additional information,
please notify us immediately

January 24, 2011

By: US Mail [ ]
Overnight Mail [ ]
Hand [X]
Other [ ]

Mr. Michael Scott
NCDENR Division of Waste Management
401 Oberlin Road, Suite 150
Raleigh, NC 27605
(919) 508-8400

SUBJECT: **City of High Point - Ingleside Compost Facility**
Permit Renewal Application

RSG PROJECT NO: **HPOINT-09-2**

We are sending you the following items:

COPIES	ITEM	DESCRIPTION
1	Check	Review Fee (per Response to Comments Letter)
1	Letter	Response to Comments w/ Attachments (pdf copy emailed on 1/21)

These are transmitted as checked below:

[ ] For Information
[ ] As Requested
[ ] For Review and Comments
[ ] For Revision
[X] **For Approval**
[ ] Approved
[ ] Approved as Noted
[ ] Approved as Noted-Revise and Resubmit
[ ] Not Approved-Revise and Resubmit
[ ] For Record and File
[ ] Submittal
[ ] For Recording

REMARKS:

cc:

Pieter K. Scheer, P.E.

RICHARDSON SMITH GARDNER & ASSOCIATES
Engineering and Geological Services

TRANSMITTAL FORM

If enclosures are not as noted or
if you require additional information,
please notify us immediately

December 1, 2009

By: US Mail [ ]
Overnight Mail [ ]
Hand **[X]**
Other [ ]

Mr. Michael Scott
NCDENR Division of Waste Management
401 Oberlin Road, Suite 150
Raleigh, NC 27605
(919) 508-8400

SUBJECT: **City of High Point - Ingleside Compost Facility**
Permit Renewal Application

RSG PROJECT NO: **HPOINT-27**

We are sending you the following items:

COPIES	ITEM	DESCRIPTION
2	Binders	Permit Renewal Application (Includes CD with PDF Copy)

These are transmitted as checked below:

[ ] For Information
[ ] As Requested
[ ] For Review and Comments
[ ] For Revision
[X] **For Approval**
[ ] Approved
[ ] Approved as Noted
[ ] Approved as Noted-Revise and Resubmit
[ ] Not Approved-Revise and Resubmit
[ ] For Record and File
[ ] Submittal
[ ] For Recording

REMARKS:

cc: **Steve Pendry, City of High Point**

Pieter K. Scheer, P.E.

RICHARDSON SMITH GARDNER & ASSOCIATES
Engineering and Geological Services

November 30, 2009

Mr. Michael Scott, Supervisor
Composting and Land Application Branch
NC DENR Division of Waste Management
401 Oberlin Road, Suite 150
Raleigh, North Carolina 27605

RE: Permit Renewal Application
City of High Point - Ingleside Composting Facility (Permit No. 41-10)
High Point, North Carolina

Dear Mr. Scott:

On behalf of the City of High Point, Richardson Smith Gardner & Associates, Inc. (RSG) would like to submit for your review two (2) copies of a permit renewal application for the Ingleside Composting Facility.

Should you have any questions or require clarification, please contact us at your earliest convenience.

Sincerely,
Richardson Smith Gardner & Associates, Inc.

Pieter K. Scheer, P.E.
Principal, Senior Engineer

Attachment: Permit Renewal Application (x 2)

cc: Steve Pendry, City of High Point (x 2)

CITY OF HIGH POINT
INGLESIDE COMPOST FACILITY

PERMIT RENEWAL APPLICATION

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APPENDICES

CITY OF HIGH POINT
INGLESIDE COMPOST FACILITY

PERMIT RENEWAL APPLICATION

1.0 EXECUTIVE SUMMARY

The following is a Permit Renewal Application submitted on behalf of the City of High Point for continued operation of the City's existing Ingleside Compost Facility (ICF). Permitted under North Carolina Solid Waste Permit #SWC-41-10, the ICF is a Large Type 1 Solid Waste Compost Facility, located off of Ingleside Drive on the northwest side of High Point.

The ICF has been in operation since 1993. The City accepts and processes yard wastes, including grass clippings, limbs, leaves and trees at the facility to produce compost, mulch, and engineered soil. The facility has operated according to an Operations Plan, originally prepared by the City of High Point in 1992-1993. The Record of Operation indicates a good history of compliance and a consistently high quality products. The ICF is operated as a service to the public; not as a profit-making venture.

The facility meets the requirements of North Carolina Solid Waste Rules 15A NCAC 13B .1400 et. seq. The following text and supplements are organized according to the regulations to expedite review by the North Carolina Department of Environment and Natural Resources (DENR) Division of Waste Management (DWM).

2.0 GENERAL FACILITY DESCRIPTION

2.1 Requirement for Permit - .1401

This facility has been (and will continue to be) permitted and operated in accordance with North Carolina Solid Waste Rules .1402 through .1408 of 15A NCAC 13B.

2.2 General Provisions - .1402

The ICF was originally permitted to receive yard wastes generated in the City of High Point and its incorporated service area, including portions of Guilford, Randolph, Davidson, and Forsyth Counties. The facility does not accept waste water treatment sludge. The ICF is classified as a Large Type 1 facility. The finished products for distribution meet the requirements of Rule .1407.

2.3 Prohibitions - .1403

No hazardous waste or asbestos-containing materials are accepted at the ICF. In general, household wastes are not accepted. The facility keeps a container on site for trash or other non-compostable wastes that might be screened out of the finished product. These

materials are disposed of at the Kersey Valley Landfill. The waste acceptance policy and quality control process (outlined in the **Section 7.0**) ensure that the finished product meets regulatory requirements for distribution.

3.0 SITING/DESIGN CRITERIA - .1404

3.1 Floodplain - .1404 (a)(1)

The facility is not located on a floodplain (see **Figure 1** in **Appendix B**).

3.2 Buffers - .1404 (a)(2) through (5)

A site map is presented in **Appendix B**. The map clearly depicts that the ICF meets all regulatory buffer requirements, described as follows:

- Minimum 50-foot buffer from all compost areas to property lines.
- 200-foot buffer from all compost areas to residences.
- Minimum 100-foot buffer from all compost areas to water supply wells (all local residences are served by City water).
- Minimum 50-foot buffer from all compost areas to perennial streams.

3.3 Surface Waters - .1404 (a)(6)

Based on examination of watershed mapping by the DENR Division of Water Quality (DWQ)[1], the ICF is located along a headwater tributary to Rich Fork Creek, in Yadkin-Pee Dee River Subbasin 03-07-07. Rich Fork Creek merges with Abbotts Creek approximately 14 miles down stream of the site – the confluence is located below a public water supply reservoir (City of Thomasville) on Abbotts Creek. Rich Fork Creek and its tributaries are classified as Class C waters per 15A NCAC 2B .0200 provisions, based on information from the NC DWQ (Reference: Stream Index # 12-119-7 – Rich Fork from source to Abbots Creek). The ICF does not affect any public drinking water supply.

3.4 Closed Disposal Area - .1404 (a)(7)

The ICF is not located over a closed disposal facility. This site was filled using a mixture of soil and inert debris from the City's Street Department (roadway, curbing, and sidewalk demolition, etc.). A soils investigation (see **Section 5.0**) confirmed verbal reports that the site had received an overlay of compacted clayey soil, derived from a nearby construction project. Storm water runoff is managed such as to prevent erosion of surficial soils.

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[1] NC DWQ (2003), "Yadkin-Pee Dee River Basinwide Water Quality Plan", prepared by the NC DENR, Division of Water Quality, Water Quality Section, Raleigh, NC, March 2003.

3.5 Fire Equipment Access - .1404 (a)(8)

The facility layout (see **Appendix B**) depicts ample access to the compost areas (windrow areas) and finished product stockpiles for fire fighting equipment. A fire hydrant is located on the premises near the scale house.

3.6 Surface Water Discharge - .1404 (a)(9)

Materials or fill materials are prevented from discharge into waters or wetlands of the State. Thus, the potential for a violation of Section 404 of the Clean Water Act is minimal.

The ICF does not accept any raw feed stocks or produce any products which would create any non-point source pollution of waters of the State. Thus, the potential for a violation of assigned water quality standards is minimal.

Pursuant to NC Session Law 2009-322 (House Bill 1100), the City intends to comply with future National Pollutant Discharge Elimination System (NPDES) permitting requirements for the site.

3.7 Ground Water Protection - .1404 (a)(10)

Due to the classification of the facility (Type 1) and the nature of the wastes, ground water monitoring is not required at the ICF. The site does contain an asphalt-paved composting area (windrow area) for the initial material processing. The soils investigation (**Section 5.0**) indicates that most of the surface area outside the asphalt pad is underlain by a minimum of 18 inches of compacted clayey soil, which limits percolation of surface water into the subgrade. These provisions exceed the requirements for a Type 1 facility. No evidence of the seasonal high ground water table was observed during the soils investigation.

3.8 Other Design Criteria - .1404 (c)

The ICF site is completely fenced to control public access. The ICF operates under an approved Erosion and Sedimentation Control permit per NC Rule 15A NCAC 4, as enforced by the DENR Division of Land Resources (DLR). A copy of the plan approval certificate is included in **Appendix A**. There have been no reported problems with dust or fugitive emissions. Care is taken not to turn compost on windy days. The City has the ability to control odor and insects with a commercial deodorizer/insecticide. However, this has not been necessary in recent years.

4.0 APPLICATION REQUIREMENTS - .1405

4.1 Aerial Photograph - .1405 (a)(1)

An aerial photograph is presented as **Figure 2** in **Appendix B**. The photo is shown at a scale of 1 inch equals 400 feet and clearly shows property boundary and the following within 500 feet of the facility boundary: roads, homes, commercial and/or industrial buildings, water courses, and other applicable information, i.e. current zoning (Agricultural).

4.2 Zoning Requirements - .1405 (a)(2)

A letter from the City of High Point Planning Department, stating that the ICF operation is consistent with the applicable zoning of the site, is presented in **Appendix A**. The letter refers to Special Use Permit 92-9, also included in **Appendix A**, which defines the property and its approved use. These documents constitute the local government approval for the site.

4.3 Siting/Design Compliance - .1405 (a)(3)

A description of how the ICF complies with applicable siting/design criteria defined in Rule .1404 is provided by item in **Section 3.0** of this report.

4.4 Waste Types - .1405 (a)(4)(A)

Per records for July 2008 through June 2009, the waste types processed by the ICF consisted of leaves and grass (6,378 tons) and brush and limbs (7,504 tons). Based on the annual report for the fiscal year ended June 30, 2009 (**Appendix A**), the division of tonnages by month and location within the public service area (by individual County areas within the City limits) are shown in the report. There are no bulking agents or admixtures used in the compost process, with the exception that the City uses municipal sludge incinerator ash as an amendment to the stabilized compost (714 tons in 2008; 609 tons in 2009). This material will be tested as described in **Section 12.0** and added to the compost in accordance with the Operations Plan (**Appendix D**, page 5).

5.0 SOILS INFORMATION - .1405 (a)(4)(B)

A brief investigation report was prepared by G.N. Richardson & Associates in December 1998 (see **Appendix C**). That report, prepared by a North Carolina licensed professional geologist, described a soils investigation conducted at the site to characterize soil and ground water conditions at the site. The near surface soils located outside the asphalt compost processing pad were characterized in five test pits as clayey silt and silty clay, classified by Unified Soil Classification System (USCS) criteria as ML and CL, respectively. The test pits encountered relict compost at the surface at a few locations. A rock outcrop (granite bedrock) and sandy soils (SM) derived from bedrock were

encountered along the south side of the site. A majority of the active areas of the site exist on man-made embankment fill. No ground water was encountered within four feet beneath the surface.

6.0 SITE PLAN - .1405 (a)(5)

The site plan (see **Figure 1** in **Appendix B**) shows existing topographic contours and other relevant features at a scale of 1 inch equals 100 feet. Included on the drawing are the locations of surface water control devices (e.g. berms and storm drains), property lines and setback distances, existing utilities and structures, and areas for unloading, processing, active composting, curing, and storing of material. Since the last permit renewal in 2004, a new scale house and a second set of scales have been added at the facility.

7.0 OVERVIEW OF OPERATIONS - .1405 (a)(6)

7.1 Responsible Party - .1405 (a)(6)(A)

Name of Facility:	Ingleside Compost Facility
Address:	3001 Ingleside Drive
	High Point, North Carolina 27265
Phone Number:	(336) 883-8514
Responsible Parties:	Mr. Randall Lee – Composting Supervisor
	Mr. Steve Pendry – Landfill Superintendent

7.2 Site Personnel - .1405 (a)(6)(B)

Composting Supervisor:	Supervises site operations and site personnel under the direction of the Landfill Superintendent.
Scale House Operator:	Weighs, records, and directs incoming vehicles.
Equipment Operators (3):	Operates various equipment associated with composting operations.
Sanitation Worker:	Performs labor type tasks at the site.

7.3 Operation Plan - .1405 (a)(6)(C)

A complete and current Operations Plan, prepared by the City of High Point, is presented in **Appendix D**. The Operations Plan is the operational guideline for the facility, presented here for documentation and completeness of the permit renewal application. The Operations Plan is updated periodically by the City. Other than an added description related to engineered soil, only minor wording changes have been made since the last permit renewal submittal in 2004.

7.4 Adverse Weather - .1405 (a)(6)(D)

The Operations Plan (**Appendix D**, page 4) provides a description of inclement weather precautions that are applicable to the ICF. The City will mobilize additional manpower and equipment as needed to maintain access to the facility; however, it is anticipated that during periods of inclement weather the need to access the facility to receive or distribute compost and mulch materials will be limited. Under conditions of severe weather, the Operations Plan makes a provision for the facility to close.

7.5 Nuisance Control - .1405 (a)(6)(E)

The Operations Plan (**Appendix D**, page 4) provides a description of actions to eliminate nuisances, including but not limited to noise, vectors, air-borne particulates, and odors. Operations personnel are sensitive to their neighbors and have consistently maintained a good record of compliance with regulatory and public relations issues.

7.6 Product Distribution - .1405 (a)(6)(F)

The finished products (mulch, compost, and engineered soil) are distributed to the public for various uses. A majority of the material is sold to commercial landscapers and other professional users. A relative small portion of the material is given away to individuals. The materials are distributed in commercial trucks or private vehicles. There is adequate on-site space for storage of finished materials that cannot be distributed in a year's time. Finished stocks are rotated so that material does not accumulate for long periods of time.

8.0 FACILITY REPORT - .1405 (a)(7)(A)

8.1 Design Capacity - .1405 (a)(7)(A)

The ultimate design capacity of the ICF is approximately 25,000 tpy or 100 tpd (based on 250 working days per year). Of this capacity, the capacity for composting is approximately 9,000 tpy. The current utilization is approximately 14,000 tpy (56 tpd). The utilization varies slightly with public need for the services. The excess capacity is available in the event of disaster, but no plans are under consideration at present to increase the through-put of the facility.

8.2 Process Flow Diagram - .1405 (a)(7)(B)

A process flow diagram for the ICF is presented in **Appendix A**. This diagram lists the general information required for equipment and feed stocks, including typical material quantities.

8.3 Measurement and Processing - .1405 (a)(7)(C)

The facility Operations Plan (**Appendix D**, page 8) provides a complete description of procedures for weighting, depositing, and processing the incoming materials. Each incoming load shall be weighted and inspected by the scale house operator and/or the site supervisor, then directed to the appropriate receiving area by classification.

Initial processing consists of grinding or placing in windrows, as appropriate to material classification. Windrows shall be constructed on slopes to promote positive drainage. Trash and other unsuitable materials screened from the feed stocks are placed into a 40-yard roll-off box and taken to Kersey Valley Landfill for disposal.

Site operations tend to be seasonal, that is, leaves and brown stocks typically are received in the autumn, while grass clippings and green stocks are received in the spring and summer months. The windrows for compost are formed in the autumn using leaves, then grass clippings are blended into the windrows using front-end loaders and/or specialized windrow turning equipment (described elsewhere in this report). After composting for the required duration and temperature, the composted materials are stockpiled for final curing. Woody feed stocks are processed into mulch; these materials are placed directly into finished stockpiles after grinding and screening.

8.4 Process Duration - .1405 (a)(7)(D)

For composts, a minimum process duration of nine months is provided for composting and curing. Some materials may stay on site longer during the distribution phase. Woody mulch materials are processed and distributed as dictated by public use.

8.5 Material Monitoring - .1405 (a)(7)(E)

The facility Operations Plan (**Appendix D**, page 12) describes the procedure for temperature monitoring, e.g. equipment and locations. Windrow temperatures are taken daily at 100-foot spacings, using a commercially available thermometer probe.

8.6 Temperature Control - .1405 (a)(7)(F)

The facility Operations Plan (**Appendix D**, page 12) describes the procedure for temperature control, subject to daily measurement by the facility staff. The Operations Plan specifies that the compost will be maintained at a temperature of at least 131 °F (55 °C) for a minimum of three days. The plan makes a provision to turn the materials to prevent overheating and for the facility staff to troubleshoot and correct any problems that result in low temperatures.

8.7 Material Aeration - .1405 (a)(7)(G)

Materials are turned and aerated with a SCAT Model 482H compost turner. Manufacturer's specifications do not give the machine capacity, but the facility operators report that they can process (turn) 100 cubic yards of material per hour (600 to 800 c.y. per day).

8.8 Surface Water Control - .1405 (a)(7)(H)

Storm water run-on and run-off is controlled by best management practices in accordance with the approved Sedimentation and Erosion Control Plan. This consists of a system of berms, ditches, and sediment basins located as shown on the site plan (**Appendix B**).

8.9 Product Information - .1405 (a)(8)

A handbill provided by the City of High Point to its customers, which describes the product and its recommended uses, is presented in **Appendix A**.

8.10 Equipment Specifications - .1405 (a)(9)

Equipment used on the site is described in the Operations Plan (**Appendix D**, page 16). Manufacturer's specification sheets are provided for each listed piece of equipment in **Appendix A**.

9.0 OPERATIONS AND MAINTENANCE - .1405 (a)(10)

9.1 Quality Assurance Plan - .1405 (a)(10)(A)

The Operations Plan (**Appendix D**, page 8) describes the procedures for material acceptance and preparation. Windrow construction is discussed on page 9, and stabilization and curing procedures are discussed on page 13. Windrow quality control monitoring and reporting procedures are discussed on page 14. Temperature reporting procedures are discussed on page 12. Final product quality control is assured through careful attention to the material acceptance criteria and on-site processing and screening. Analytical testing of the final product is typically not required at Type 1 facilities. Record keeping and reporting requirements are discussed in **Section 12.0**.

9.2 Contingency Plan - .1405 (a)(10)(B)

The contingency plan for mechanical breakdown of equipment is to substitute equipment from another solid waste unit under the City's jurisdiction or, at the discretion of the Landfill Superintendent, activities at the ICF may be temporarily suspended (without adversely affecting long-term site operations) while equipment repairs are made.

The Operations Plan (**Appendix D**, page 18) describes the contingency plan for non-

conforming/unauthorized material. If an off-spec material can be processed into an acceptable material, that material is segregated and stored separately for later processing. All unacceptable material is rejected and haulers are directed to the Kersey Valley Landfill, located on Kivett Drive.

The facility handles no liquid wastes, eliminating the concern for spillage. A contingency for fuel spills includes calling the proper authorities to contain, report, and clean up the spill. Any compost that might be affected by a fuel spill shall be removed from the processing area and disposed off-site along with any soil or absorbent material. Contingencies for other undesirable conditions such as fire are discussed on page 18 of the Operations Plan, and for vectors and odors on pages 4 and 14 of the Plan.

9.3 Operational Compliance - .1405 (a)(10)(C)

An explanation of how the facility does (and will continue to) comply with the requirements of Rule .1406 is provided in **Section 10.0**.

10.0 OPERATIONAL REQUIREMENTS - .1406

10.1 Plan and Permit Requirements - .1406 (1)

Other than periodic upgrades and improvements to site infrastructure (see **Section 6.0**), the facility construction has been completed and no significant operational changes are planned. The Operation Plan, permit documents, and records are kept on site at all times.

10.2 Erosion Control - .1406 (2)

The site is operated in accordance with the approved Sediment and Erosion Control permit issued by DENR Division of Land Resources (DLR). Periodic inspection will be conducted by the ICF staff, e.g. after heavy rains, to verify that no erosion has taken place, and any erosion noted will be corrected.

10.3 Surface Water Diversion - .1406 (3)

Surface water is diverted from the active operational areas by way of a system of berms and ditches. All site grades promote positive drainage away from the operational areas.

10.4 Leachate - .1406 (4)

Due to the facility type (Type 1) the drainage from active composting areas and stockpiles is managed as storm water. As stated in **Section 3.6**, the City intends to comply with future National Pollutant Discharge Elimination System (NPDES) permitting requirements for the site.

10.5 Access and Security - .1406 (5)

Access is limited to the public with a fully enclosed fence and entrance gate. The site is manned full-time during normal working hours. The site is locked during non-working hours. The entrance road is paved and allows all-weather access.

10.6 Waste Acceptance - .1406 (6)

The waste acceptance criteria is detailed in the Operations Plan (**Appendix D**, page 8). The site has been successfully operated in accordance with this plan with a history of regulatory compliance.

10.7 Safety Requirements - .1406 (7)

Safety issues pertaining to the operation of the ICF are outlined in the Operations Plan (**Appendix D**, page 17). No open fires are permitted at the facility. The Operations Plan details procedures for personnel training and the proper response in the event of fire.

10.8 Sign Requirements - .1406 (8)

All required signs are posted on the premises, including the permit number, hours of operation, vehicle traffic flow, waste acceptance criteria, and emergency contact numbers.

10.9 Temperature Monitoring Requirements - .1406 (9) and (10)

Please refer to **Section 8.6**.

10.10 Miscellaneous Requirements - .1406 (14)

Finished compost and allowable uses meet the requirements of Rule .1407 (see **Section 11.0**). The compost does not contain non-compostable solid waste or unacceptable material (such materials are screened out of the finished product and disposed in an appropriate solid waste landfill).

11.0 MATERIAL CLASSIFICATION AND DISTRIBUTION - .1407

The solid waste compost and mulch produced at the Ingleside Compost Facility, a Type 1 facility, is comprised entirely of vegetative wastes (leaves, grass, limbs, small trees, stumps) which are processed according to all applicable regulatory requirements. The materials, by nature, contain minimal pathogenic organisms, are free from offensive odors, and contain no sharp objects that would be injurious to the public. The site and production process are managed under close daily supervision in order to obtain the highest quality finished product. The materials produced from a Type 1 facility do not have a regulatory requirement for analytical testing. Based on the nature of the material

and the closely controlled process of production, the finished product has historically met the requirements for distribution for a Type 1 facility.

12.0 TESTING AND REPORTING - .1408

12.1 Composite Sample - .1408 (a)

Sampling and analytical testing are generally not required for Type 1 facilities. However, testing of municipal sludge incinerator ash, which is used as an amendment to stabilized compost, is performed quarterly for total metals (including arsenic, cadmium, lead, mercury, molybdenum, nickel, and selenium) prior to shipment to the site. The results of each test must meet the criteria shown in the Operations Manual (**Appendix D**, Table 1). Also, a NC Department of Agriculture (NCDA) waste analysis (including analyses for nutrients, metals, and calcium carbonate equivalence) is performed for every 1,000 CY of ash to be delivered to the site.

12.2 Record Keeping - .1408 (b)

On-site facility records are maintained by the operator. These records include daily scale house records of incoming material and distributed finished products, as well as weekly records on temperature measurements and information on the windrows (e.g. pile dimensions, moisture, and turning frequency). A copy of the weekly operations form is presented in Operation Plan. Scale house records are kept in the facility office on site. The computerized scale house records, tabulated monthly, provide all of the following information:

- Quantity, type, and source of incoming materials.
- Test data for municipal sludge incinerator ash (if used as amendment).
- Quantity and type of material processed into compost (only one type is produced) or mulch, by product classification.
- Quantity and type of material removed for use, by product classification and market segment, or removed for disposal (all non-suitable material is disposed at the Kersey Valley Landfill).

12.3 Annual Reporting - .1408 (c)

Annual reports are prepared for each fiscal year beginning July 1 to June 30 and are submitted by the facility owner by each following August 1. The computerized scale house records are tabulated for the period for an Annual Report (see **Appendix A**), which presents the following information:

- The facility name, address, permit number.
- Total quantity in tons of wastes received from local governments of origin.
- The total quantity in tons and type of compost (one type is produced) and

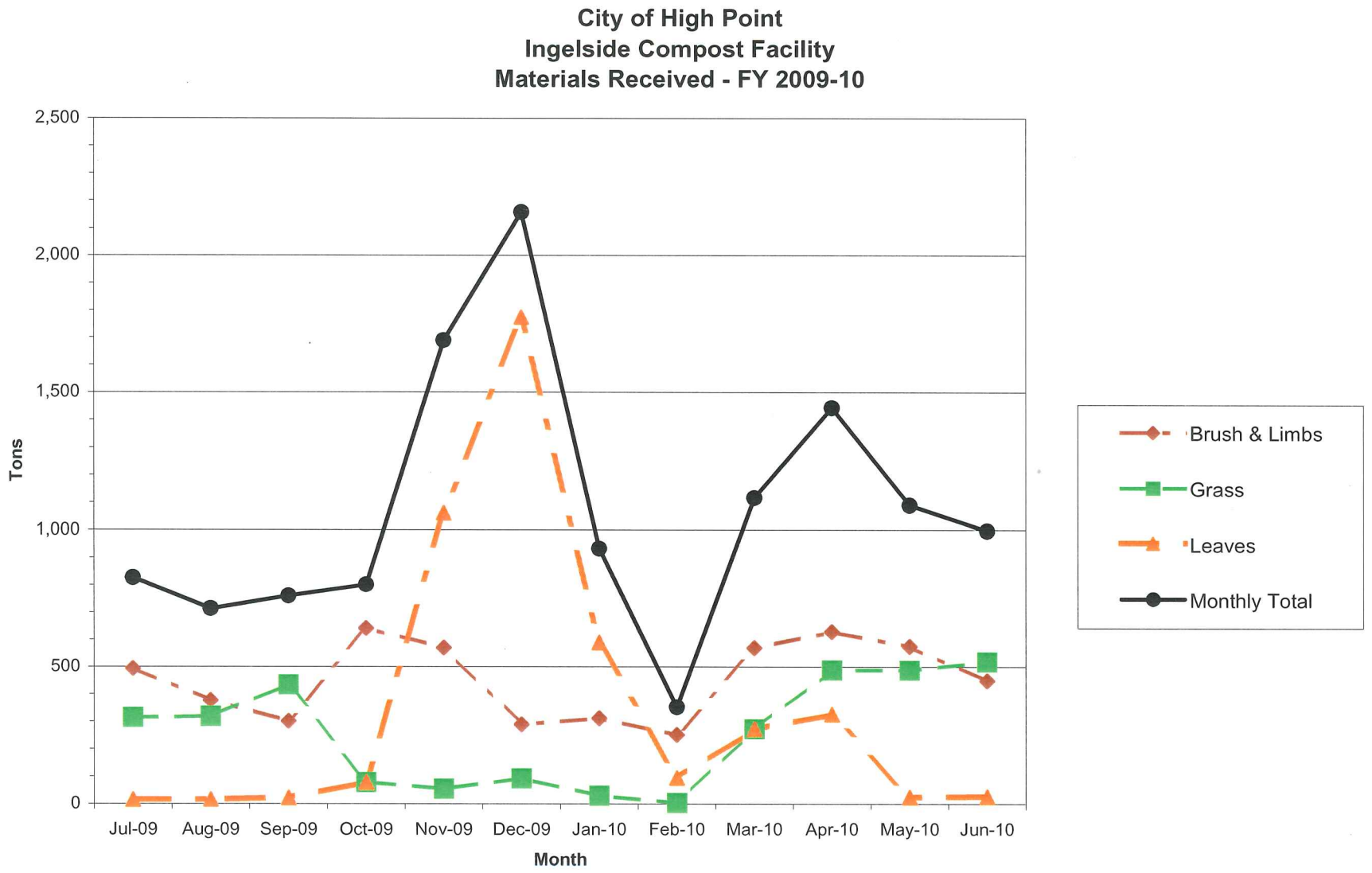
mulch processed at the facility, by product classification.

- The total quantity in tons and by type of products removed from the facility for use and the market percentages.
- Monthly temperature readings (tabulated weekly data).

Copies of the Annual Report are kept at the site. Note that there are no sludges accepted at the ICF and no analytical testing is required (except for municipal sludge incinerator ash).

12.4 Yearly Recycling Totals - .1408 (d)

Yearly totals of wastes received and composted are reported back to the local governments of origin for annual recycling reporting.


City of High Point
Ingelside Compost Facility
Materials Received - FY 2009-10
2,500
2,000
1,500
1,000
500
0
Tons
Jul-09
Aug-09
Sep-09
Oct-09
Nov-09
Dec-09
Jan-10
Feb-10
Mar-10
Apr-10
May-10
Jun-10
Month
Brush & Limbs
Grass
Leaves
Monthly Total

Ash - Impoundment - 7048 Tons (wet)

2008 ES LTMP DATA SUMMARY SHEETS

EASTSIDE WASTE WATER TREATMENT PLANT NC0024210 revised 05-15-2008

INDUSTRIAL MONTHLY ANALYSES EASTSIDE SOLID ASH

Calendar Year :	*Jan - Mar* **1st Quarter -2008**			*Apr - Jun* **2nd Quarter -2008**			*Jul - Sep* **3rd Quarter -2008**			*Oct - Dec* **4th Quarter -2008**					
Total Metals Parameters (mg/Kg)	*January*	*February*	*March*	*April*	*May*	*June*	*July*	*August*	*September*	*October*	*November*	*December*	Count :	Average :	Std. Deviation :
	1/22/2008	2/22/2008	*NO SAMPLE*	4/7/2008	5/12/2008	*NO SAMPLE*	7/14/2008	8/12/2008	9/2/2008	10/6/2008	11/6/2008	12/2/2008			
Aluminum	116000	123000		122000	116000		120000			118000	123000	114000			
Arsenic	0.86	2.67		1.39	2.9		<1.13	<.718	3.55	2.85	7.31	6.62	8	3.51875	2.303516
Barium	1260	1430		1310	1460		1410	800	1130	1120	1280	1210	10	1241	194.7334
Beryllium	<.859	<.750		0.738	0.748		0.824	0.388	<.616	1.3	<.622	<.622	5	0.7996	0.326675
Cadmium	1.36	2.12		3.51	4.69		7.12	1.81	6.43	0.398	6.29	10.6	10	4.4328	3.189583
Chromium	119	128		123	150		145	85.3	147	17.4	162	150	10	122.67	43.01364
Lead	46.8	107		116	149		239	65.6	221	15.7	138	249	10	134.71	81.2303
Mercury	0.0172	0.075		0.117	0.092		0.0564	0.0647	0.3202	0.039	0.1741	0.0995	10	0.10551	0.087164
Molybdenum								5.34	19.2				2	12.27	9.8005
Nickel	47.7	51.3		52.7	88		112	59	105	6.35	85.9	241	10	84.895	63.16363
Phosphorous tot.	120000	121000		132000	133000		138000	85900	65400	116000	13400	141000	10	106570	40550.22
Potassium tot.	8540	8640		9100	8970		9970	5890	7220	6420	10100	11600	10	8645	1748.004
Selenium								<.718	<1.23				0	#DIV/0!	#DIV/0!
Silver	70.4	89.9		45.5	36.2		56.5	24.5	51.1	43.1	52.6	40.3	10	51.01	18.41144
Sodium	2860	2710		2620	2930		2850	1750	3590	2890.00	3320	4040.00	10	2956	611.2683
Zinc	1630	1700		2310	2230		2450	1180	41.1	465.0	2550	2820	10	1737.61	926.8063
% Solids													0	#DIV/0!	#DIV/0!
% Carbon	######	40.00%		38.00%	37.00%		######	83.00%	######	36.00%	40.00%	21.00%	10.00	0.42	0.17
Chloride, tot.	<34.4	319		246	276		72.2	412	411	129	465	476	9	311.8	144.3952
Sulfate													0	#DIV/0!	#DIV/0!
													0	#DIV/0!	#DIV/0!
													0	#DIV/0!	#DIV/0!
													0	#DIV/0!	#DIV/0!
													0	#DIV/0!	#DIV/0!

Ash To Impoundment - 609.26 Tons (Wet)

2009 ES LTMP DATA SUMMARY SHEETS

EASTSIDE WASTE WATER TREATMENT PLANT NC0024210 revised 05-15-2008

INDUSTRIAL MONTHLY ANALYSES EASTSIDE SOLID ASH

Calendar Year :	*Jan - Mar* **1st Quarter -2009**			*Apr - Jun* **2nd Quarter -2009**			*Jul - Sep* **3rd Quarter -2009**			*Oct - Dec* **4th Quarter -2009**					
Total Metals Parameters (mg/Kg)	*January*	*February*	*March*	*April*	*May*	*June*	*July*	*August*	*September*	*October*	*November*	*December*	*Count :*	*Average :*	*Std. Deviation :*
	1/20/2009	*2/19/2009*	*3/24/2009*	*4/14/2009*	*5/12/2009*	*6/15/2009*									
Aluminum	123000	53200	103000	96200	115000	42400	116000		11800	111000					
Arsenic	2.08	35.7	4.17	3.19	16.8	17.3	<.992	9.93	14.1	9.99	<.137		6	13.20667	12.97239
Barium	1400	1030	1580	1390	1390	598	1112	1390	1320	1570	854		6	1231.333	358.3332
Beryllium	<.63	2.11	2.99	2.21	2.84	2.94	2.05	2.40	2.29	2.52	1.04		5	2.618	0.423048
Cadmium	11.9	4.42	6.53	5.65	3.55	5.44	3.41	9.42	5.41	3.79	2.41		6	6.248333	2.954856
Chromium	140	638	278	138	180	177	135	204	140	162	52.3		6	258.5	192.7524
Lead	168	100	141	14.2	96.1	120	109	1.55	135	90.7	54.3		6	106.55	52.58219
Mercury	0.0756	0.0524	0.547	0.2767	0.0855	0.236	.1587	.8879	.1337	.2064	.0824		6	0.2122	0.188184
Molybdenum								14.3			7.10		0	#DIV/0!	#DIV/0!
Nickel	158	248	124	56.8	80.3	65.2	57.4	91.0	61.3	75.8	31.6		6	122.05	72.65281
Phosphorous tot.	129000	64600	134000	115000	135000	47800	101000	153000	114000	126000	19000		6	104233.3	38255.65
Potassium tot.	11000	4030	15900	16700	11600	10300	6520	11800	9020	10700	10200		6	11588.33	4557.501
Selenium								<.960			<.137		0	#DIV/0!	#DIV/0!
Silver	51.3	36.1	33.2	34.4	36.1	50.5	48.9	69.1	48.6	41.9	11.4		6	40.26667	8.313042
Sodium	2650	770	4420	5250	4440	5040	3560	4330	3950	4490	2980		6	3761.667	1727.928
Zinc	2310	2100	3120	2560	2800	1170	2300	3750	2560	2730	1630		6	2343.333	677.6036
% Solids													0	#DIV/0!	#DIV/0!
% Carbon	0.64	0.32	0.33	not run	0.31	0.58	.51	1.00	.74	.59	.21		5.00	0.44	0.16
Chloride, tot.	546	243	24	511	635	874	772	1100	809	408	644		6	472.1667	299.4378
Sulfate													0	#DIV/0!	#DIV/0!
													0	#DIV/0!	#DIV/0!
													0	#DIV/0!	#DIV/0!
													0	#DIV/0!	#DIV/0!
													0	#DIV/0!	#DIV/0!

NCDA&CS Ag. ..omic Division Phone: (919)733-2655 Web site: www.ncagr.gov/agronom... **Report: W00515**

Waste Analysis Report

Grower: **City of High Point**
c/oPublic Services Dept.
PO Box 230
High Point, NC 27261

Copies to: Scheer, Pieter

Farm: CITY OF HIGH POINT

Guilford County

Received: 07/14/2010 **Completed:** 07/28/2010 **Links to Helpful Information**

Sample 1

Sample Information	Laboratory Results (parts per million unless otherwise noted)													
Sample ID: 1	*N*	*P*	*K*	*Ca*	*Mg*	*S*	*Fe*	*Mn*	*Zn*	*Cu*	*B*	*Mo*	*Cl*	*C*
	Total 5872	6709	3948	6769	1909	511	4776	385	111	53.0	25.1			731434
Waste Code:	*IN-N*													
	-NH4													
FCW	*-NO3*	*Na*	*Ni*	*Cd*	*Pb*	*Al*	*Se*	*Li*	*pH*	*SS*	*C:N*	*DM%*	*CCE%*	ALE(tons)
Description:	*OR-N*	326							6.54	40	124.56	76.97		
Composted Waste - Other	*Urea*													

Recommendations:	Nutrients Available for First Crop *lbs/ton (wet basis)*												Other Elements *lbs/ton (wet basis)*						
Application Method	*N*	*P2O5*	*K2O*	*Ca*	*Mg*	*S*	*Fe*	*Mn*	*Zn*	*Cu*	*B*	*Mo*	*Cl*	*Na*	*Ni*	*Cd*	*Pb*	*Al*	*Se*	*Li*
Broadcast	3.6	14.2	5.8	6.3	1.8	0.47	4.4	0.36	0.10	0.05	0.02			0.50						

Completed: 7/27/2010

Sample 2

Sample Information	Laboratory Results (parts per million unless otherwise noted)													
Sample ID: 2	*N*	*P*	*K*	*Ca*	*Mg*	*S*	*Fe*	*Mn*	*Zn*	*Cu*	*B*	*Mo*	*Cl*	*C*
	Total 5982	6252	3244	8216	2197	589	6642	485	125	58.0	34.2			908985
Waste Code:	*IN-N*													
	-NH4													
FCW	*-NO3*	*Na*	*Ni*	*Cd*	*Pb*	*Al*	*Se*	*Li*	*pH*	*SS*	*C:N*	*DM%*	*CCE%*	ALE(tons)
Description:	*OR-N*	310							6.5	13	151.95	72.89		
Composted Waste - Other	*Urea*													

Recommendations:	Nutrients Available for First Crop *lbs/ton (wet basis)*												Other Elements *lbs/ton (wet basis)*						
Application Method	*N*	*P2O5*	*K2O*	*Ca*	*Mg*	*S*	*Fe*	*Mn*	*Zn*	*Cu*	*B*	*Mo*	*Cl*	*Na*	*Ni*	*Cd*	*Pb*	*Al*	*Se*	*Li*
Broadcast	3.5	12.5	4.5	7.2	1.9	0.52	5.8	0.42	0.11	0.05	0.03			0.45						

North Carolina Tobacco Trust Fund Commission

Reprogramming of the laboratory-information-management system that makes this report possible is being funded through a grant from the North Carolina Tobacco Trust Fund Commission.

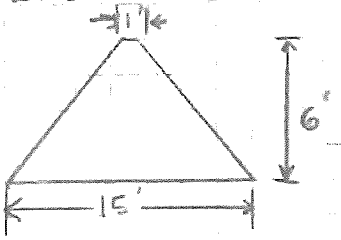
Thank you for using agronomic services to manage nutrients and safeguard environmental quality.
- Steve Troxler, Commissioner of Agriculture

PROJECT HP-ICF

SUBJECT Windrow Area Capacity Calc.

SHEET 1 OF 1
JOB NO. HPOINT-09-2
DATE 1/6/11
COMPUTED BY PES
CHECKED BY

- Given:
  - → 5 Mo. Time in Windrow
  - → Windrow X-Section:



Area = 1.78 CY/LF

  - → Spacing of Windrows @ 25' ℄ To ℄

- Capacity:

① On Asphalt Pad*: 620'L x 175'W (Allows Room For Processing)

Capacity = 6 Windrows x 600'L x 1.78 CY/LF = 6,408 CY

② Area To North of Pad*: 420'L (Avg) x 250'W

Capacity = 9 Windrows x 400'L x 1.78 CY/LF = 6,408 CY

③ Area To SW of Pad*: 300'L (Avg) x 150'W

Capacity = 5 Windrows x 280'L x 1.78 CY/LF = 2,492 CY

Total Capacity = ①+②+③ x 2 Times/Yr = 30,616 CY/Yr

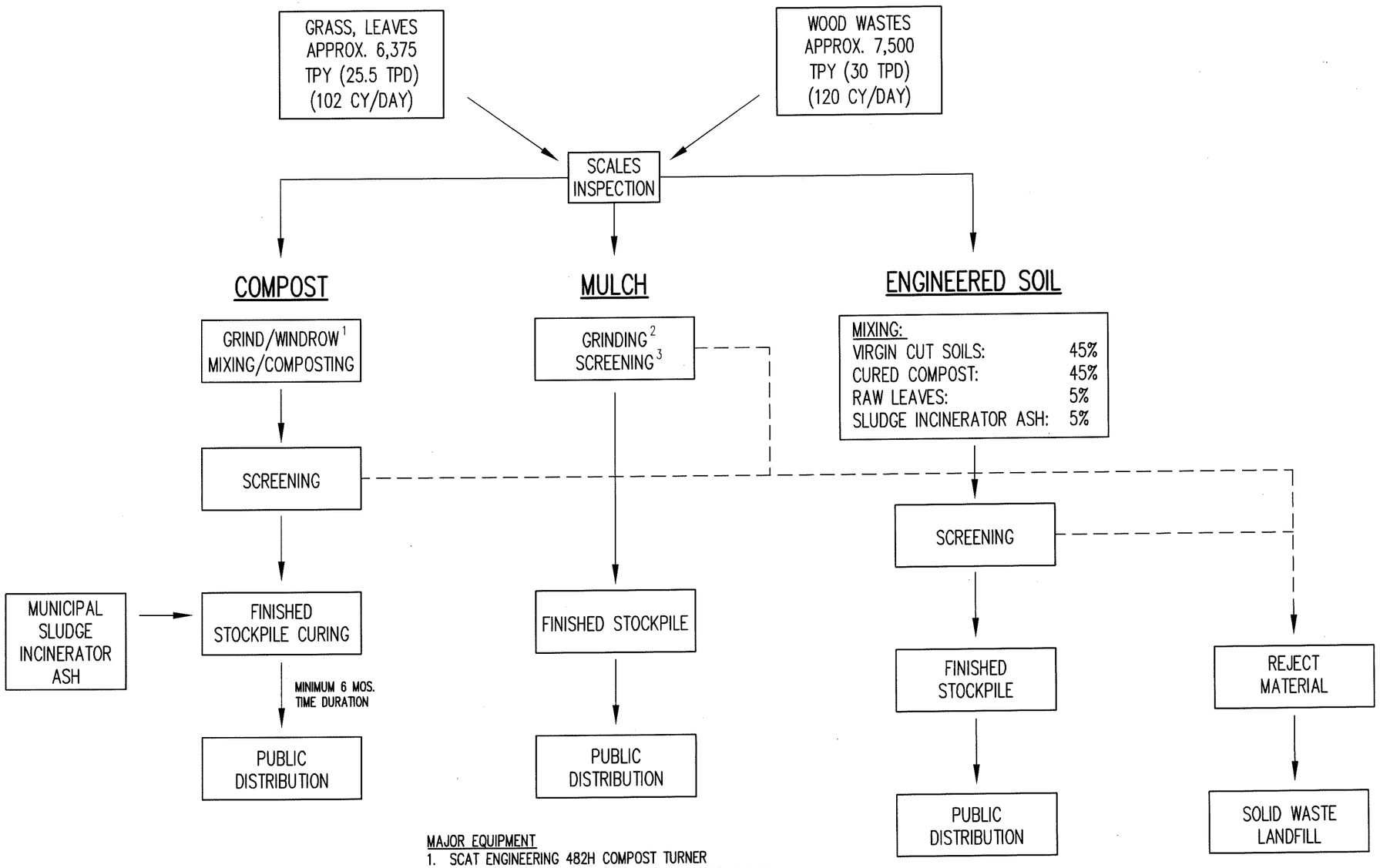
≈ 9,185 Tons/Yr (@ .3 Tons/CY)*

* Greater density of material assumed after grinding/processing

RICHARDSON SMITH GARDNER & ASSOCIATES
Engineering and Geological Services
14 N. Boylan Avenue · Raleigh, NC 27603 · Phone: 919-828-0577 · www.rsgengineers.com

Appendix A

PROCESS FLOW DIAGRAM
INGLESIDE COMPOST FACILITY
HIGH POINT, NORTH CAROLINA



MAJOR EQUIPMENT
1. SCAT ENGINEERING 482H COMPOST TURNER
2. MORBARK 1400 TUBGRINDER; MORBARK 1300B TUBGRINDER
3. WILDCAT 516 COUGAR TROMMEL SCREEN

OTHER EQUIPMENT CONSISTS OF A JOHN DEERE 624H FRONT-END LOADER; 2 CASE 621B FRONT-END LOADERS; A FORD L8000 TANDEM DUMP TRUCK; AND A SERVICE TRUCK.

NOTE: ESTIMATED DESIGN CAPACITY (ALL MATERIALS)= 25,000 TPY (100 TPD)
ESTIMATED DESIGN CAPACITY (COMPOST)= 9,000 TPY
CURRENT AVERAGE UTILIZATION = 14,000 TPY (56 TPD) (BASED ON FY 2008-09)

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, Health, 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).

INGLESIDE COMPOST FACILITY - GUILFORD

Project Name and Location

3-17-93

Date of Plan Approval

Asst Regional Engineer

Planning & Development

Development Services Division

HIGH POINT
NORTH CAROLINA'S INTERNATIONAL CITY™

January 19, 2011

Mr. Michael Scott
NC DENR Division of Waste Management
1646 Mail Service Center
Raleigh, North Carolina 27699

RE: City of High Point
Ingleside Compost Facility
Demonstration of Consistency with Local Ordinances

Dear Mr. Scott:

This letter is to advise you that the Ingleside Compost Facility was approved and established in accordance with the City of High Point's Development Ordinance. The facility received a Special Use Permit on May 21, 1992 in accordance with Development Ordinance procedures to allow a non-hazardous solid waste disposal facility in an Agricultural (AG) District. To the best of my knowledge, this facility continues to meet applicable zoning requirements.

Should you have any questions or require clarification, please contact me at your earliest convenience at (336) 883-3538.

Sincerely,
City of High Point, NC

Robert L. Robbins

Robert L. Robbins, AICP
Development Services Administrator
Department of Planning and Development

cc: Pieter Scheer, P.E., Richardson Smith Gardner & Associates

CITY OF HIGH POINT
NORTH CAROLINA

June 28, 1999

David Garrett
G. N. Richardson & Associates
425 N. Boylan Avenue
Raleigh, NC 27603

Re: Ingleside Dr. Composting Facility

Dear Mr. Garrett:

This letter will advise you that the Ingleside Composting Facility was approved and established in accordance with the City of High Point Development Ordinance. The facility received a Special Use Permit on May 21, 1992 in accordance with Development Ordinance procedures to allow a non-hazardous solid waste disposal facility in an Agricultural (AG) District. To the best of my knowledge, this facility continues to meet applicable zoning requirements.

If you have any questions please feel free to contact me at 336-883-3538.

Sincerely,

Robert L. Robbins

Robert L. Robbins, AICP
Development Administrator
Department of Planning and Development

Cc: SUP 92-9 file

CITY OF HIGH POINT
NORTH CAROLINA

SPECIAL USE PERMIT 92-9

CITY OF HIGH POINT, NORTH CAROLINA

THE HIGH POINT CITY COUNCIL, PURSUANT TO TITLE 9, CHAPTER 3 OF THE CITY CODE, APPROVED A SPECIAL USE PERMIT FOR THE FOLLOWING USE, SUBJECT TO THE CONDITION(S) LISTED BELOW ON MAY 21, 1992.

USE

To allow a nonhazardous solid waste disposal facility in an Agricultural (AG) District.

CONDITION

Development of the site shall be pursuant to Section 9-4-5(a) of the Development Ordinance and in accordance with the site plan approved by City Council.

The property is located on the west side of Ingleside Drive opposite the western terminus of West Bellevue Drive.

It is known as County Tax Map Number 299, Block Number 1, Lot Number 1.

DESCRIPTION OF PROPERTY: Being one lot totalling approximately 32.80 acres as shown on Guilford County Tax Map 229, Block 1, Lot 1. The property is located on the west side of Ingleside Drive opposite the western terminus of West Bellevue Drive.

If the property involved in this Special Use Permit is used as approved, the property described in this Special Use Permit will be subject to such conditions as imposed on said Special Use, unless subsequently changed or amended as provided for in Title 9, Chapter 3 of the City Code. The Special Use Permit and its conditions shall bind the owner(s) of the above described property and any successors in interest.

The issuance of a Special Use Permit shall not allow the development of the site for the Special Use, but shall merely authorize the filing of an application for a required building permit, site plan, subdivision or other approval required by the Technical Review Committee.

Construction of the project specified within this Permit shall begin within eighteen (18) months from the date of City Council approval or the Special Use Permit shall expire.

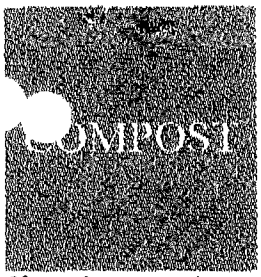
Director of Public Works — June 1, 1992
Date

Director of Planning and Development — June 1, 1992
Date

City Manager — June 2, 1992
Date

Attest: Patricia Paris Simmons
Patricia Paris Simmons
City Clerk

CITY OF HIGH POINT NORTH CAROLINA



State of North Carolina

Department of Environment and Natural Resources
Division of Waste Management

SOLID WASTE COMPOST FACILITY

Facility Annual Report

For the period of JULY 1, 2008-JUNE 30, 2009

If you have questions or require assistance in completing this report, contact your Regional Environmental Senior Specialist. According to (G.S. 130A-309.09D(b)) completed forms must be returned by August 1, 2009 and a copy of this report must be sent to the County Manager of each county from which waste was received.

Facility Name: Ingleside Composting Facility Permit: 4110 ID: PO491

Facility Website (URL):

Physical Address:		Mailing Address:	
Street 1:	3001 Ingleside Drive	Street 1:	P.O. Box 230
Street 2:		Street 2:	
City:	High Point	City:	
State:	North Carolina Zip: 27265	State:	North Carolina Zip: 27261

Facility Contact Primary:		Facility Contact Secondary:	
Name:	Steven Pendry	Name:	Randall Lee
Phone:	(336) 883-3433 Fax: (336) 883-1785	Phone:	(336) 883-8514 Fax: (335) 883-3256
Email:	steven.pendry@highpointnc.gov	Email:	randall.lee@highpointnc.gov

1. Tipping Fee: $36.00 per Ton (Attach a schedule of tipping fees if appropriate.)

2. Please attach results of monthly temperature monitoring for the period of July 1, 2008 thru June 30, 2009.

3. Please attach results of tests (Waste Analysis with metals, foreign matter and pathogens) as required in Table 3 of Rule 15A NCAC 13B .1408 for the period of July 1, 2008 thru June 30, 2009. **Current Rules state that "Compost shall be analyzed at intervals of every 20,000 tons of compost produced or every six months."** N/A

4. What type and quantity of waste was composted by your facility?

Materials COMPOSTED	Tons
Brush & Limbs	7,504.2
Grass & Leaves	6,378.45
TOTAL	13,882.65

5. What type and quantity of compost was produced by your facility?

Type of Compost PRODUCED by Product Classification	Tons
Compost	5,535.23
Mulch	5,850.79
TOTAL	11,386.02

6. What type and quantity of compost was removed or disposed by your facility?

Type of Compost REMOVED or DISPOSED by Product Classification	Tons
Compost	5,535.23
Mulch	5,850.79
TOTAL	11,386.02

7. How was the final product ultimately used? If the final product had multiple uses, please indicate approximate percentages of each.

40% - Residential 40% - Commercial 20% - Governmental

8. Indicate waste received at this compost facility during the period of July 1, 2008, through June 30, 2009. Indicate tonnage received by COUNTY of waste origin.

ALL ROWS

Tons From \Month	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Total
Davidson	0.15	0.16	1.00	0.16	7.91	2.28	2.77	2.22	0.00	0.00	0.00	0.00	16.65
Guilford	975.27	779.40	960.90	967.55	1,480.59	2,070.04	1,234.22	761.87	976.27	1,405.32	1,125.95	1,111.51	13,848.89
Forsyth	0.80	0.00	0.76	5.07	2.98	0.39	1.12	1.60	0.17	0.00	0.00	0.00	12.89
Randolph	0.16	1.86	0.09	0.00	0.00	0.00	0.03	0.00	0.08	0.00	2.00	0.00	4.22
												Grand Total	13,882.65

***According to (G.S. 130A-309.09D(b))**

This report must be sent to the Regional Environmental Senior Specialist for your area and a copy of this report must be sent to the County Manager of each county from which waste was received.

CERTIFICATION: I certify that the information provided is an accurate representation of the activity at this facility.

Signature: Steven Pendry Digitally signed by Steven Pendry DN: cn=Steven Pendry, o=City of High Point, ou=Landfill, email=steven.pendry@highpointnc.gov, c=US Date: 2009.07.28 14:13:16 -04'00' Date: July 28, 2009

Name: Steven Pendry Title: Landfill Superintendent

Phone Number: (336) 883-3433 Email: steven.pendry@highpointnc.gov

MONTHLY TEMPATURE MONITORING

DATE	# OF ROWS	AVG. TEMP
7/3/2008	8	135
7/10/2008	8	130
7/17/2008	8	130
7/24/2008	8	135
7/31/2008	8	135
8/7/2008	8	135
8/14/2008	8	130
8/20/2008	4	130
8/27/2008	4	130
9/3/2008	4	130
9/10/2008	4	135
9/17/2008	4	130
9/24/2008	4	130
10/1/2008	4	135
10/8/2008	4	135
10/15/2008	4	135
10/22/2008	4	130
10/29/2008	4	130
11/6/2008	4	130
11/13/2008	4	130
11/20/2008	4	135
11/27/2008	4	130
12/4/2008	4	130
12/11/2008	4	135
12/18/2008	4	135
12/26/2008	4	135
1/3/2009	4	130
1/8/2009	4	130
1/15/2009	4	130
1/22/2009	4	130
1/29/2009	4	135
2/5/2009	4	130
2/12/2009	4	130
2/19/2009	4	135
2/26/2009	4	135
3/7/2009	10	135
3/12/2009	10	130
3/19/2009	10	130
3/26/2009	10	130
4/2/2009	10	130
4/9/2009	10	135
4/16/2009	10	130
4/23/2009	10	130
4/30/2009	10	135
5/5/2009	10	135
5/14/2009	10	130
5/21/2009	10	130
5/30/2009	10	130
6/4/2009	8	130

CITY OF HIGH POINT
NORTH CAROLINA

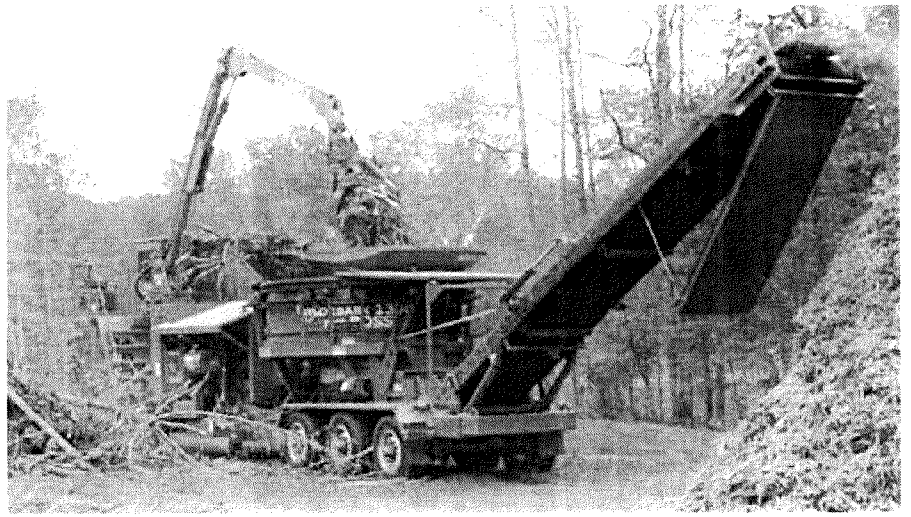
The compost and mulch produced at Ingleside Compost Facility are Type 1 facility products:

- Contain minimal pathogenic organisms
- Are free from offensive odor
- Contain no sharp particles that would cause injury to persons handling compost
- Have unrestricted applications and distributions

- Recommended uses
  - soil additives for gardens and lawns
  - use for natural areas around shrubbery and flowers
  - newer mulch should not be placed around young plants

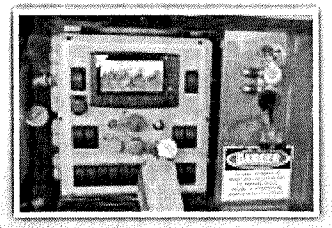
P.O. BOX 230, 211 S. HAMILTON STREET, HIGH POINT, NORTH CAROLINA 27261 FAX 910-883-3419 TDD 910-883-8517

MORbARK 1300B TUB GRINDER



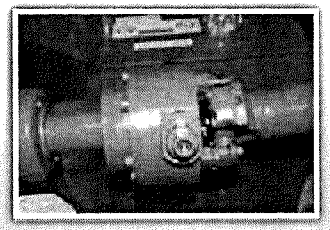
BENEFITS

- Full hydraulic tilt tub provides easy access to grates and anvil for routine maintenance
- Backed by a world class parts & service support team.
- Long lasting, durable machine that holds its value.
- Proven drive line protection system that protects against catastrophic damage from contaminants.



Morbark Integrated Control Systems

The ultimate diagnostic system; monitors hydraulic pressures, temperatures, clutch systems, tub rotation and engine efficiency while automatically adjusting to maximize performance.

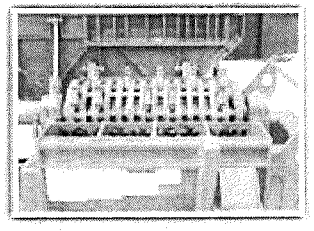


TORQUE LIMITER

The full breakaway torque limiter system protects the engine and clutch against shock and overload without stalling the enigne.

HYDRAULIC AUGERS

Quickly remove product from beneath the mill and during material surges, pressure sensors automatically slow tub rotation to prevent plugging.



HAMMERMILL

Laser-cut, factory balanced hammermills with forged hammers offer unsurpassed durability and smooth operation.

SPECIFICATIONS

GENERAL

Length (transport)	45'
Length (operating)	63'6"
Height	13'6"
Width	11'11"
Gross weight NCL	75,120 lbs.
Axle weight NCL	51,580 lbs
Tongue weight NCL	23,540 lbs.
Gross weight WCL (optional)	86,760 lbs.
Axle weight WCL (optional)	56,340 lbs
Tongue weight WCL (optional)	30,420 lbs.
Engine	CAT or Cummins
Horsepower	800 HP to 1,050 HP
Fuel capacity (tank)	505 gallons
Hydraulic oil capacity	205 gallons

Morbark Integrated Control Systems
Front hydraulic stabilizers and manual outriggers

TUB

Full hydraulic tilt
13' diameter tub opening, 10' diameter at inside base and 57" deep
Walls constructed of 3/8" thick reinforced steel plate, floor constructed of ½" thick T-1 steel
Replaceable wear strips on the tub floor
Tub supported by 16 rubber tire guide rolls, carried on a 1½" diameter chrome shaft
Hydraulic forward and reverse
Safety shut down system
Electronic RPM sensor for tub drive

HAMMERMILL AND SCREEN

31" x 64" hammermill opening
20" x 63" rotor with eight 2 1/4" heat-treated hammer retaining rods mounted on an 7" diameter rotor shaft
30 3/8" tip swing
Equipped with (28) 2" thick forged steel fixed hammers with double-edged, replaceable cutting tools
1" thick wear form steel split screens
Screening area 3,730 sq. inches

DISCHARGE SYSTEM

Two 16" diameter augers discharge onto a 40" x 31' heavy duty belt conveyor
Discharge height of 17'

OPTIONS

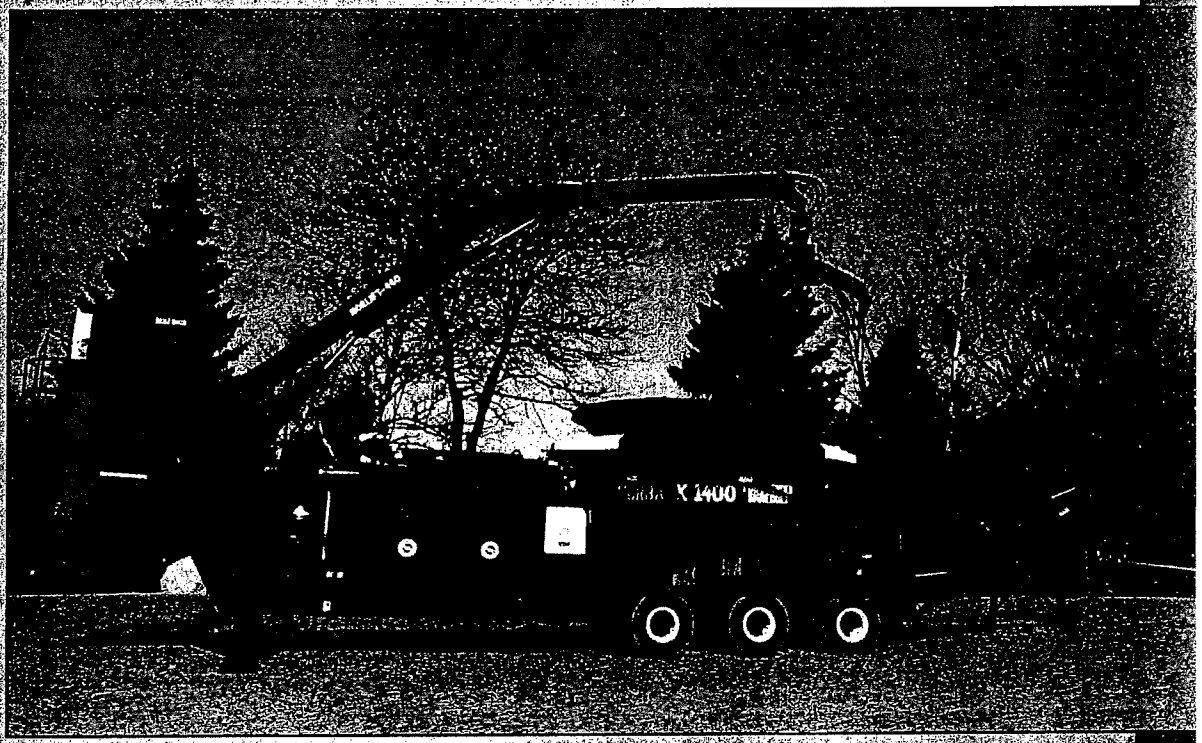
Halogen light package
Air compressor
Morbark automatic reversing fan
Wireless remote control
Electric over hydraulic power pack
Magnetized end pulley with collecting slide tray for ferrous metal extraction
Hydraulic reversing radiator fan
Hydraulic rod pusher
Dust suppression system

MORBARK, INC. WINN, MICHIGAN
800-831-0042 • 989-866-2381
www.morbark.com

Morbark Tub Grinder

Product Information

Model 1400



When the application calls for high volume grinding—and a standard 11 or 12-foot tub grinder can't meet the requirements—the Morbark Model 1400 Tub Grinder answers the call. The 1400 has the power, ruggedness and technology necessary to process wood and other organic waste at rates up to **400 cubic yards or 75 to 100 tons per hour,** depending on the type of material.

This self-contained, portable unit is fed with its own knuckleboom loader, offering 14,000 pounds of lifting power at 10'. Morbark's telescoping cab elevates to an operating height of 15'6", providing the operator with excellent visibility for material processing. Protecting the engine and clutch from shock or overload is Morbark's high torque reduction gear box with torque limiter.

The Model 1400 can also be equipped with an optional 159 horsepower auxiliary power unit, for all hydraulic functions. This option results in 800 horsepower being directly transmitted to the hammermill, resulting in even higher production.

For high volume processing of stumps, logs, brush, pallets, yard waste, demolition debris and up to 1,300 railroad ties per hour, the Morbark 1400 Tub Grinder is in a class by itself.

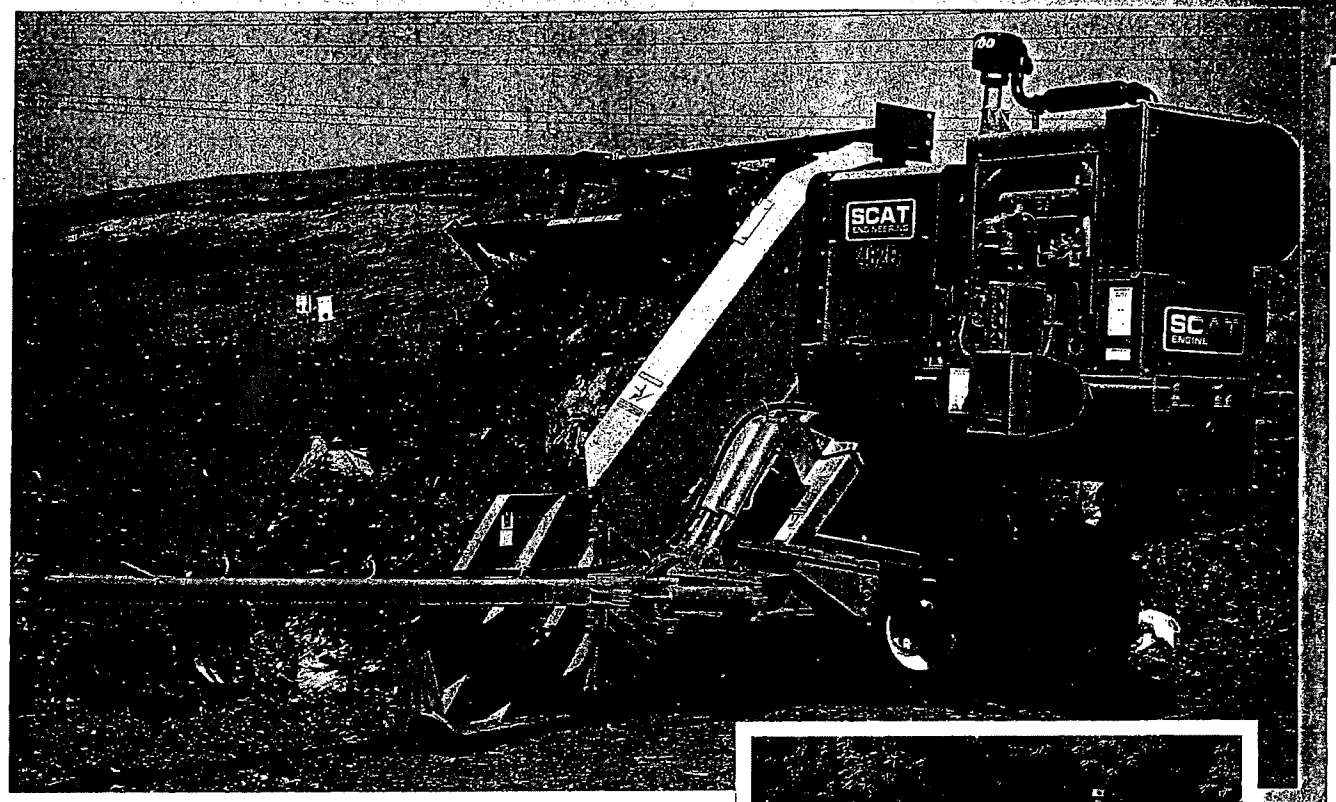
Morbark Sales Corporation

8507 S. Winn Road
P.O. Box 1000
Winn, MI 48896

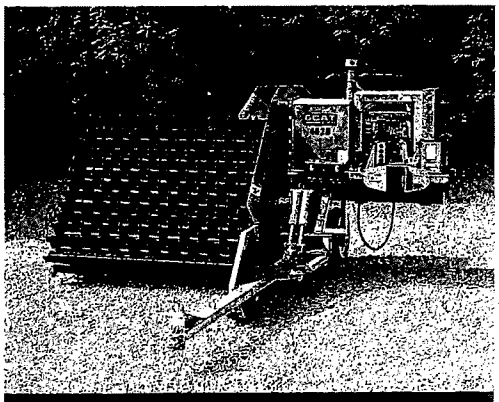
(800) 233-6065
(517) 866-2381
Fax (517) 866-2280

SCAT ENGINEERING

SCAT 482B & 483B
Tow-Type Compost and Bioremediation Turners



The unique Elevating Face allows taller windrows and *maximizes the blending of materials.*



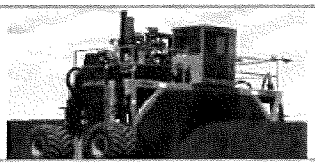
- Optimal Aeration
- Superior Mixing
- Complete Inversion
- Greater Capacity
- Accelerated Bio Reduction
- Higher Quality Compost
- Thorough Bioremediation

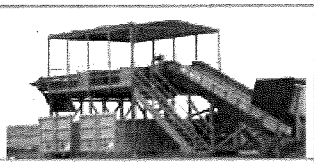
SCAT handles material with ease.
In contrast to methods which tend to compress or compact materials, SCAT's unique elevating face gently turns the material in high windrows with optimal aeration and mixing. Taller windrows together with maximum aeration and mixing result in better inner thermal currents, shorter bio reduction time, better odor control, higher quality compost, and efficient use of available space.

- Able to service multiple sites
- Minimizes compaction/compression of windrow
- Debagging Teeth and Bag-Breaking Bar optional
- Versatile and economical

SCAT Turners are easy to use and have low operating costs per cubic yard/meter. SCAT Turners help provide optimal composting and bioremediation environments.

Wildcat





> Compost Turning Equipment > Screening Equipment > Greenwaste Picking Station

516 Cougar *03/09/09 2:06:47 PM*

Home

About Us

The Equipment

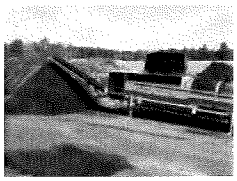
Contact Us

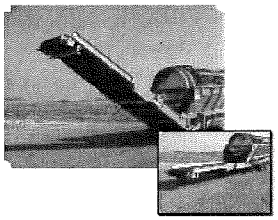
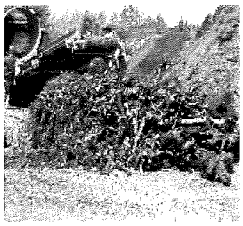
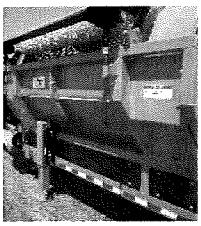
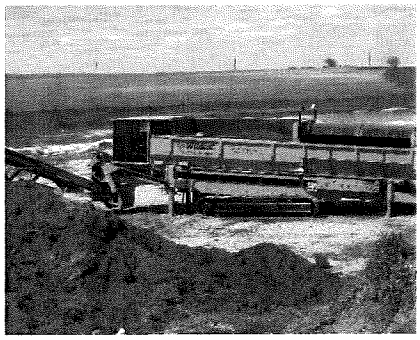
International Visitors

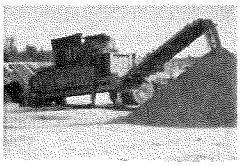
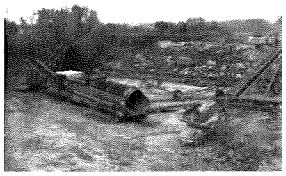
Information

516 Cougar

Click on the image for a larger view


- SPECIFICATIONS -

516 Cougar	
Capacity	Dependent upon screen panel opening
Drum size	5′ – 0" in diameter x 16′ – 0" long
Hopper capacity	5 cubic yards
Hopper loading height	9′ – 6"
Engine	65 HP diesel
Attached material stacking conveyors	Yes – fines and overs
Radial stockpiling capability	Yes - fines
Screen panel cleaning brushes	Yes

444H 544H 624H

JOHN DEERE CONSTRUCTION EQUIPMENT

Engine	444H	544H	624H
Type	John Deere PowerTech® 4045T with altitude-compensating turbocharger; meets North American EPA and CARB non-road diesel engine emission regulations effective January 1, 1997; also is certifiable to proposed E.U. (European Union) regulations, which are not yet effective	John Deere PowerTech 6068T with altitude-compensating turbocharger; meets North American EPA and CARB non-road diesel engine emission regulations effective January 1, 1997; also is certifiable to proposed E.U. (European Union) regulations, which are not yet effective	John Deere PowerTech 6068H with altitude-compensating turbocharger and aftercooler; meets North American EPA and CARB non-road diesel engine emission regulations effective January 1, 1997; also is certifiable to proposed E.U. (European Union) regulations, which are not yet effective
Rated power @ 2,200 rpm	110 SAE net hp (82 kW), 115 SAE gross hp (86 kW)	130 SAE net hp (97 kW), 138 SAE gross hp (103 kW)	160 SAE net hp (119 kW), 172 SAE gross hp (128 kW)
Cylinders	4	6	6
Displacement	276 cu. in. (4.5 L)	414 cu. in. (6.8 L)	414 cu. in. (6.8 L)
Maximum net torque	325 lb.-ft. (441 Nm) @ 1,400 rpm	440 lb.-ft. (600 Nm) @ 1,300 rpm	575 lb.-ft. (780 Nm) @ 1,400 rpm
Lubrication	pressure system with full-flow spin-on filter and cooler	pressure system with full-flow spin-on filter and cooler	pressure system with full-flow spin-on filter and cooler
Fuel consumption, typical	1.8 to 3.8 gal./hr. (7.1 to 14.4 L/h)	2.4 to 4.7 gal./hr. (8.9 to 17.8 L/h)	2.9 to 5.0 gal./hr. (10.9 to 18.9 L/h)
Cooling fan	blower type	blower type	blower type, hydraulically driven
Electrical system	24 volt with 55-amp alternator	24 volt with 55-amp alternator	24 volt with 55-amp alternator
Batteries (two 12 volt)	625 CCA; reserve capacity: 160 min.	625 CCA; reserve capacity: 160 min.	625 CCA; reserve capacity: 160 min. – standard / 950 CCA; reserve capacity: 200 min. – optional
Air cleaner	dual safety element dry type; restriction indicator for service	dual safety element dry type; restriction indicator for service	dual safety element dry type; restriction indicator for service

Transmission		444H	544H	624H
Type		single stage, single phase torque converter; countershaft-type power shift with computer control	single stage, single phase torque converter; countershaft-type power shift with computer control	single stage, single phase torque converter; countershaft-type power shift with computer control
Controls		smooth shifts under any power condition provided by computer-controlled electronic shift with individual electronic control over each clutch pack, twist-grip shift lever, quick-shift button on hydraulic lever, automatic shift feature is selectable to shift between gears 1–4 or 2–4	smooth shifts under any power condition provided by computer-controlled electronic shift with individual electronic control over each clutch pack, twist-grip shift lever, quick-shift button on hydraulic lever, automatic shift feature is selectable to shift between gears 1–4 or 2–4	smooth shifts under any power condition provided by computer-controlled electronic shift with individual electronic control over each clutch pack, twist-grip shift lever, quick-shift button on hydraulic lever, automatic shift feature is selectable to shift between gears 1–4 or 2–4
Travel speeds*	*Forward*	*Reverse*	*Forward*	*Reverse*	*Forward*	*Reverse*
Gear 1	4.6 mph (7.5 km/h)	4.9 mph (7.9 km/h)	4.3 mph (7.0 km/h)	4.6 mph (7.5 km/h)	4.8 mph (7.7 km/h)	5.0 mph (8.1 km/h)
Gear 2	7.7 mph (12.1 km/h)	8.1 mph (13.1 km/h)	7.2 mph (11.6 km/h)	7.4 mph (12.1 km/h)	7.5 mph (12.0 km/h)	8.0 mph (12.7 km/h)
Gear 3	15.5 mph (24.9 km/h)	16.3 mph (26.3 km/h)	14.3 mph (23.0 km/h)	15.5 mph (25.0 km/h)	14.0 mph (22.6 km/h)	14.9 mph (23.9 km/h)
Gear 4	24.8 mph (40.0 km/h)		25.0 mph (40.0 km/h)		24.5 mph (39.5 km/h)	

*444H equipped with 17.5-25 tires; 544H and 624H equipped with 20.5-25 tires.

Axles/Brakes	444H	544H	624H
Final drives	heavy-duty planetary, mounted inboard	heavy-duty planetary, mounted inboard	heavy-duty planetary, mounted inboard
Differentials	conventional front and rear – standard; hydraulic locking front, conventional rear – optional; dual locking front and rear – optional; limited slip front and rear – optional	conventional front and rear – standard; hydraulic locking front, conventional rear – optional; dual locking front and rear – optional; limited slip front and rear – optional	conventional front and rear – standard; hydraulic locking front, conventional rear – optional; dual locking front and rear – optional; limited slip front and rear – optional
Rear axle oscillation, stop to stop	24 degrees	28 degrees with 17.5-25 tires; 24 degrees with 20.5-25 tires	26 degrees
Maximum rise and fall, single wheel	15.1 in. (385 mm)	18.6 in. (472 mm) with 17.5-25 tires; 16.0 in. (406 mm) with 20.5-25 tires	18.2 in. (461 mm)
Brakes (conform to SAE J1473, ISO3450)			
Service brakes	inboard-mounted hydraulic wet-disc, bathed in cooling oil, long life self-adjusting	inboard-mounted hydraulic wet-disc, bathed in cooling oil, long life self-adjusting	inboard-mounted hydraulic wet-disc, bathed in cooling oil, long life self-adjusting
Parking brake	automatically spring applied, hydraulically released, wet disc bathed in cooling oil	automatically spring applied, hydraulically released, wet disc bathed in cooling oil	automatically spring applied, hydraulically released, wet disc bathed in cooling oil

Hydraulic System/Steering	444H	544H	624H
Pump (loader and steering)	variable-displacement, axial piston pump; closed-center, pressure-compensating system	variable-displacement, axial piston pump; closed-center, pressure-compensating system	variable-displacement, axial piston pump; closed-center, pressure-compensating system
Maximum flow @ 2,200 rpm	36 gpm (136 L/m) @ 1,000 psi (6895 kPa)	41 gpm (155 L/m) @ 1,000 psi (6895 kPa)	55 gpm (200 L/m) @ 1,000 psi (6895 kPa)
Pressure	loader and steering relief 3,600 psi (24 850 kPa)	loader and steering relief 3,600 psi (24 850 kPa)	loader and steering relief 3,600 psi (24 850 kPa)
Loader controls	two-function valve; single or dual lever controls; control lever lockout feature; optional third- and fourth-function valve with auxiliary lever	two-function valve; single or dual lever controls; control lever lockout feature; optional third- and fourth-function valve with auxiliary lever	two-function valve; single or dual lever controls; control lever lockout feature; optional third- and fourth-function valve with auxiliary lever
Hydraulic cycle times			
Raise	5.0 sec.	5.8 sec.	5.8 sec.
Dump	1.1 sec.	1.2 sec.	1.4 sec.
Lower	2.6 sec. (float down) / 2.8 sec. (power down)	2.9 sec. (float down) / 3.3 sec. (power down)	3.0 sec. (float down) / 3.5 sec. (power down)
Total	8.7 sec.	9.9 sec.	10.2 sec.

Hydraulic System/ Steering (continued)

	444H	544H	624H
Maximum lift capacity	*with 2.0-cu. yd. (1.5 m³) bucket with bolt-on edge*	*with 2.5-cu. yd. (1.9 m³) bucket with bolt-on edge*	*with 3.0-cu. yd. (2.3 m³) bucket with bolt-on edge*
Lift at ground level	20,964 lb. (9509 kg)	25,055 lb. (11 365 kg)	29,090 lb. (13 195 kg)
Lift at maximum height	10,783 lb. (4891 kg)	13,430 lb. (6092 kg)	17,290 lb. (7843 kg)
Steering (conforms to SAE J1511)			
Type	power, fully hydraulic	power, fully hydraulic	power, fully hydraulic
Pressure	3,600 psi (24 850 kPa) relief	3,600 psi (24 850 kPa) relief	3,600 psi (24 850 kPa) relief
Articulation angle	80-degree arc (40 degrees each direction)	80-degree arc (40 degrees each direction)	80-degree arc (40 degrees each direction)
Turning radius (measured to center-line of outside tire)	15 ft. 5 in. (4703 mm)	16 ft. 3 in. (4959 mm)	17 ft. (5187 mm)

444H Tires

Choice of	*Tread Width*	*Width Over Tires*	*Change In Vertical Height*
15.5-25, 12 PR L2	72.8 in. (1850 mm)	89.5 in. (2275 mm)	– 1.8 in. (– 46 mm)
17.5-25, 12 PR L2	72.8 in. (1850 mm)	91.7 in. (2330 mm)	0 in. (0 mm)
17.5-25, 12 PR L3	72.8 in. (1850 mm)	91.7 in. (2330 mm)	+ 0.6 in. (+ 15 mm)
17.5 R 25, GP-2B Goodyear Radial (L2 type)	72.8 in. (1850 mm)	91.6 in. (2327 mm)	+ 0.5 in. (+ 13 mm)
17.5 R 25, XTLA Michelin Radial (L2 type)	72.8 in. (1850 mm)	91.6 in. (2327 mm)	+ 0.1 in. (+ 3 mm)
17.5 R 25, XHAT Michelin Radial (L3 type)	72.8 in. (1850 mm)	91.6 in. (2327 mm)	+ 0.2 in. (+ 5 mm)

544H Tires

Choice of	*Tread Width*	*Width Over Tires*	*Change In Vertical Height*
17.5-25, 12 PR L2	76.8 in. (1950 mm)	95.7 in. (2430 mm)	– 3.0 in. (– 75 mm)
17.5-25, 12 PR L3	76.8 in. (1950 mm)	95.7 in. (2430 mm)	– 2.3 in. (– 57 mm)
17.5 R 25, GP-2B Goodyear Radial (L2 type)	76.8 in. (1950 mm)	95.6 in. (2427 mm)	– 2.1 in. (– 53 mm)
17.5 R 25, XTLA Michelin Radial (L2 type)	76.8 in. (1950 mm)	95.6 in. (2427 mm)	– 1.3 in. (– 32 mm)
17.5 R 25, XHAT Michelin Radial (L3 type)	76.8 in. (1950 mm)	95.6 in. (2427 mm)	– 1.2 in. (– 30 mm)
20.5-25, 12 PR L2	74.8 in. (1900 mm)	96.9 in. (2462 mm)	0 in. (0 mm)
20.5-25, 12 PR L3	74.8 in. (1900 mm)	96.9 in. (2462 mm)	+ 0.3 in. (+ 6 mm)
20.5 R 25, GP-2B Goodyear Radial (L2 type)	74.8 in. (1900 mm)	96.8 in. (2460 mm)	+ 0.3 in. (+ 7 mm)
20.5 R 25, XTLA Michelin Radial (L2 type)	74.8 in. (1900 mm)	96.8 in. (2460 mm)	+ 1.8 in. (+ 44 mm))
20.5 R 25, XHAT Michelin Radial (L3 type)	74.8 in. (1900 mm)	96.8 in. (2460 mm)	+ 1.7 in. (+ 42 mm)
23.1-26, 10 PR LS-2*	84.1 in. (2136 mm)	108.1 in. (2743 mm)	+ 2.2 in. (+ 55 mm)

*Requires 6-degree rear axle stops, close-mounted steps, and no fenders.

624H Tires

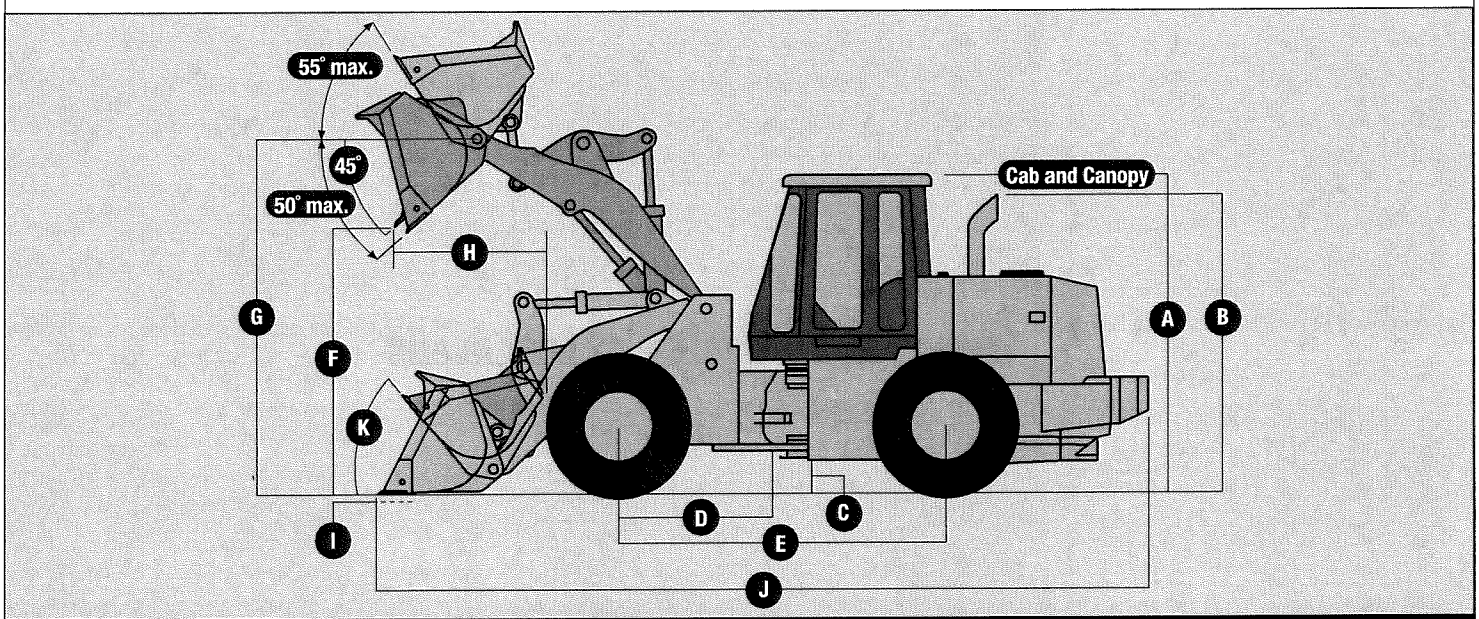
Choice of	*Tread Width*	*Width Over Tires*	*Change In Vertical Height*
17.5-25, 12 PR L2	80.7 in. (2050 mm)	99.6 in. (2530 mm)	– 2.4 in. (– 60 mm)
17.5-25, 12 PR L3	80.7 in. (2050 mm)	99.6 in. (2530 mm)	– 2.4 in. (– 60 mm)
17.5 R 25, GP-2B Goodyear Radial (L2 type)	80.7 in. (2050 mm)	99.4 in. (2525 mm)	– 2.1 in. (– 53 mm)
17.5 R 25, XTLA Michelin Radial (L2 type)	80.7 in. (2050 mm)	99.4 in. (2525 mm)	– 3.0 in. (– 77 mm)
17.5 R 25, XHAT Michelin Radial (L3 type)	80.7 in. (2050 mm)	99.4 in. (2525 mm)	– 2.7 in. (– 68 mm)
20.5-25, 12 PR L2	80.7 in. (2050 mm)	103.3 in. (2625 mm)	0 in. (0 mm)
20.5-25, 12 PR L3	80.7 in. (2050 mm)	103.3 in. (2625 mm)	0 in. (0 mm)
20.5 R 25, XTLA Michelin Radial (L2 type)	80.7 in. (2050 mm)	103.3 in. (2625 mm)	– 0.5 in. (– 14 mm)
20.5 R 25, XHAT Michelin Radial (L3 type)	80.7 in. (2050 mm)	103.7 in. (2635 mm)	– 0.2 in. (– 5 mm)

Capacities (U.S.)

	444H	544H	624H
Fuel tank (with ground level fueling)	48 gal. (180 L)	65 gal. (246 L)	70 gal. (265 L)
Cooling system	20 qt. (19 L)	24 qt. (23 L)	23 qt. (22 L)
Engine lubrication, including full-flow spin-on filter	13 qt. (12.5 L)	19 qt. (18 L)	21 qt. (20 L)
Power shift transmission, including vertical cartridge filter	13 qt. (12.5 L)	21 qt. (20 L)	29 qt. (27 L)
Differential (each axle)			
Front	16 qt. (15 L)	20 qt. (19 L)	30 qt. (28 L)
Rear	16 qt. (15 L)	20 qt. (19 L)	19 qt. (20 L)
Loader hydraulic reservoir and filters	28 gal. (106 L)	28 gal. (106 L)	31 gal. (117 L)
Parking brake	10 oz. (0.300 L)	10 oz. (0.300 L)	10 oz. (0.300 L)

Dimensions with Pin-on Type Bucket

		444H	544H	624H
A	Height to top of cab and canopy	10 ft. 3 in. (3125 mm)	10 ft. 7 in. (3230 mm)	10 ft. 10 in. (3300 mm)
B	Height to top of exhaust	10 ft. 3 in. (3120 mm)	10 ft. 6.6 in. (3215 mm)	10 ft. 10 in. (3305 mm)
C	Ground clearance	14 in. (355 mm)	16.7 in. (424 mm)	16 in. (406 mm)
D	Length from centerline to front axle	54.1 in. (1375 mm)	57.1 in. (1450 mm)	59.65 in. (1515 mm)
E	Wheelbase	108.3 in. (2750 mm)	114.2 in. (2900 mm)	119.3 in. (3030 mm)
F	Dump height	▲ (see below)	▲ (see page 17)	▲ (see page 17)
G	Height to hinge pin, fully raised	11 ft. 10 in. (3605 mm)	12 ft. 7 in. (3829 mm)	13 ft. (3961 mm)
H	Dump reach	▲▲ (see below)	▲▲ (see page 17)	▲▲ (see page 17)
I	Maximum digging depth	4.6 in. (116 mm)	1.8 in. (45 mm)	3.6 in. (92 mm)
J	Overall length	▲▲▲ (see below)	▲▲▲ (see page 17)	▲▲▲ (see page 17)
K	Maximum rollback at ground level	41 degrees	40 degrees	40 degrees



444H Pin-on Type Bucket Information

	Bucket Type/Size	*Stockpiling and General Purpose w/Bolt-on Edge*	*Stockpiling and General Purpose w/Teeth and Segments*	*Stockpiling and General Purpose w/JAGZ™*	*Excavating w/Bolt-on Edge*	*Excavating w/Teeth and Segments*
	Capacity, heaped SAE	2.5 cu. yd. (1.9 m³)	2.5 cu. yd. (1.9 m³)	2.5 cu. yd. (1.9 m³)	2.0 cu. yd. (1.5 m³)	2.0 cu. yd. (1.5 m³)
	Capacity, struck SAE	2.1 cu. yd. (1.6 m³)	2.1 cu. yd. (1.6 m³)	2.1 cu. yd. (1.6 m³)	1.6 cu. yd. (1.2 m³)	1.6 cu. yd. (1.2 m³)
	Bucket width	95.3 in. (2420 mm)	95.3 in. (2420 mm)	95.3 in. (2420 mm)	95.3 in. (2420 mm)	95.3 in. (2420 mm)
	Breakout force, SAE J732C	16,952 lb. (7689 kg)	16,952 lb. (7689 kg)	16,642 lb. (7549 kg)	20,021 lb. (9081 kg)	20,021 lb. (9081 kg)
	Tipping load, straight	16,021 lb. (7267 kg)	15,913 lb. (7218 kg)	15,796 lb. (7165 kg)	16,338 lb. (7411 kg)	16,232 lb. (7363 kg)
	Tipping load, 40-degree full turn, SAE	13,605 lb. (6171 kg)	13,395 lb. (6076 kg)	13,395 lb. (6076 kg)	13,900 lb. (6305 kg)	13,796 lb. (6258 kg)
	Reach, 45-degree dump, 7-ft. (2.13 m) clearance	58.2 in. (1478 mm)	59.7 in. (1518 mm)	58.4 in. (1484 mm)	56.2 in. (1428 mm)	58.0 in. (1473 mm)
▲▲	Reach, 45-degree dump, full height	43.1 in. (1095 mm)	46.7 in. (1185 mm)	43.5 in. (1105 mm)	38.8 in. (985 mm)	42.3 in. (1075 mm)
▲	Dump clearance, 45 degree, full height	103.9 in. (2638 mm)	100.5 in. (2553 mm)	103.5 in. (2630 mm)	108.2 in. (2748 mm)	104.8 in. (2663 mm)
▲▲▲	Overall length, bucket on ground	22 ft. 1 in. (6730 mm)	22 ft. 6 in. (6860 mm)	22 ft. 1 in. (6743 mm)	21 ft. 6 in. (6563 mm)	22 ft. (6693 mm)
	Loader clearance circle, bucket in carry position	36 ft. (10 983 mm)	36 ft. 3 in. (11 061 mm)	36 ft. 1 in. (10 991 mm)	35 ft. 9 in. (10 887 mm)	36 ft. (10 961 mm)
	Operating weight	21,457 lb. (9733 kg)	21,546 lb. (9773 kg)	21,585 lb. (9791 kg)	21,283 lb. (9654 kg)	21,365 lb. (9691 kg)

Loader operating information is based on machine with all standard equipment; 17.5-25, 12 PR L2 tires; 840-lb. (382 kg) optional counterweight; ROPS cab; 175-lb. (79 kg) operator; and full fuel tank. This information is affected by tire size, ballast, and different attachments.

444H Adjustments to Operating Weights with Pin-on Buckets

Adjustments to operating weights and tipping loads for 2.5-cu.-yd. (1.9 m³) material-handling bucket with bolt-on cutting edge

Add (+) or deduct (–) lb. (kg) as indicated for loaders with	*Operating Weight*	*Tipping Load, Straight*	*Tipping Load, 40-Degree Full Turn, SAE*
15.5-25, 12 PR L2 tires	– 375 lb. (– 170 kg)	– 216 lb. (– 98 kg)	– 187 lb. (– 85 kg)
17.5-25, 12 PR L3 tires	+ 154 lb. (+ 70 kg)	+ 88 lb. (+ 40 kg)	+ 77 lb. (+ 35 kg)
17.5-25, GP-2B L2 Goodyear Radial	+ 256 lb. (+ 116 kg)	+ 148 lb. (+ 67 kg)	+ 128 lb. (+ 58 kg)
17.5-25, XTLA L2 Michelin Radial	+ 93 lb. (+ 42 kg)	+ 53 lb. (+ 24 kg)	+ 46 lb. (+ 21 kg)
17.5-25, XHAT L3 Michelin Radial	+ 269 lb. (+ 122 kg)	+ 154 lb. (+ 70 kg)	+ 134 lb. (+ 61 kg)
$CaCl_2$ in 17.5-25 rear tires*	+ 1,179 lb. (+ 535 kg)	+ 1,358 lb. (+ 616 kg)	+ 1,173 lb. (+ 532 kg)
Optional counterweight removed*	– 840 lb. (– 382 kg)	– 1,515 lb. (– 687 kg)	– 1,246 lb. (– 565 kg)

*Optional counterweight not to be used when $CaCl_2$ or other ballast is used in rear tires.

Appendix B

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REFERENCES

1. PROPERTY LINES, STREAMS, ROADS, AND OTHER SITE FEATURES WERE OBTAINED FROM THE CITY OF HIGH POINT PLANIMETRIC SURVEY, DATED DECEMBER, 2004, SHEETS NO. 6891.01, AND 6892.03.
2. AERIAL PHOTOGRAPHY PROVIDED BY THE CITY OF HIGH POINT GIS DEPARTMENT AND WAS COMPILED IN FEBRUARY/MARCH 2008.
3. THE CITY OF HIGH POINT GIS DATA FILES ARE PROVIDED FOR PUBLIC USE. NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE REGARDING THE ACCURACY, QUALITY, PERFORMANCE, OR UTILITY OF THE DATA.

TITLE:	DRAWN BY:	CHECKED BY:	SCALE:	FIGURE NO.
SITE PHOTO	W.R.B.	P.K.S.	AS NOTED	2
	DATE:	PROJECT NO.	FILE NAME	
	Nov. 2009	HPOINT 09-2	HP-B0323	

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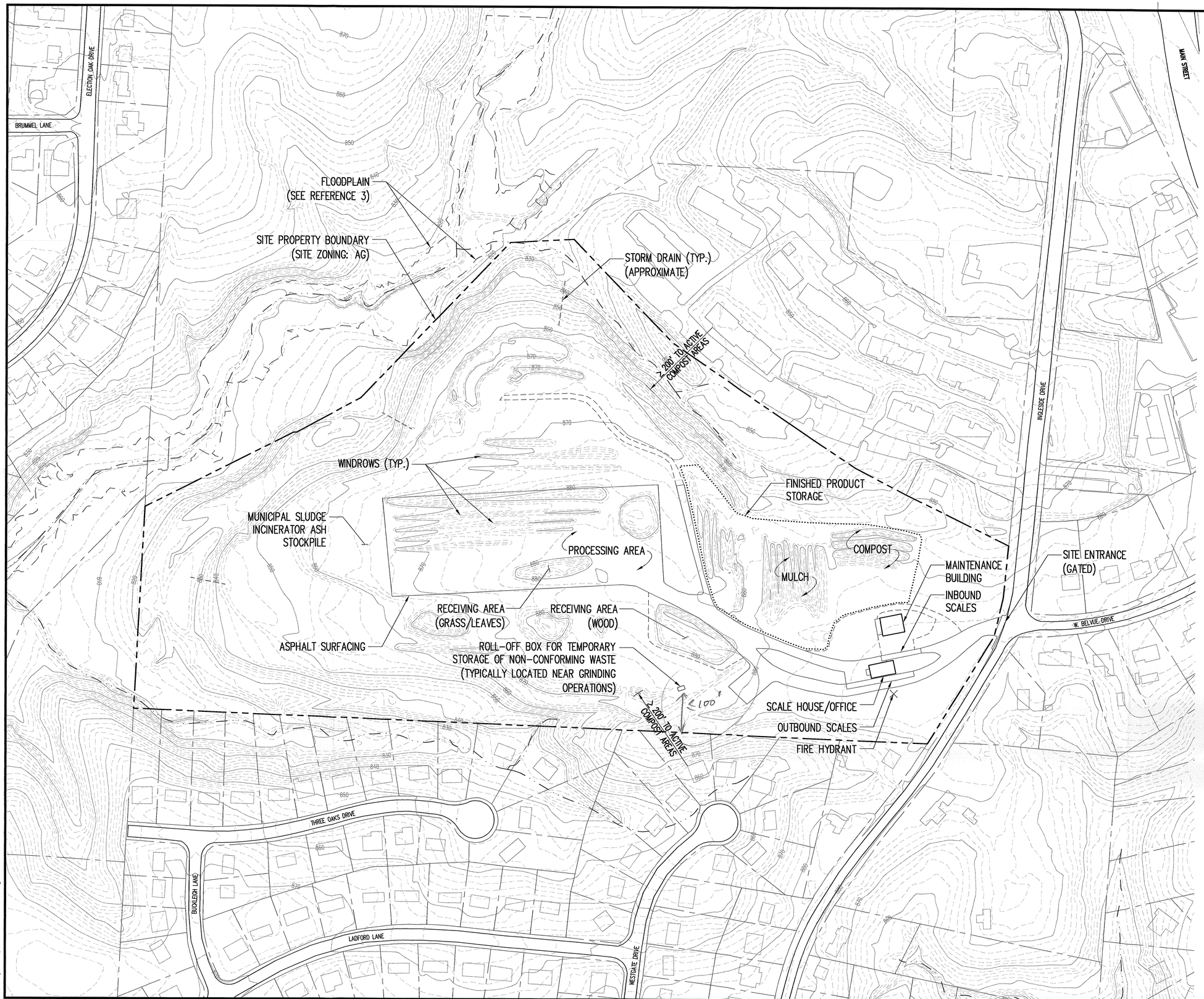

SITE ADDRESS
3001 INGLESIDE DRIVE
HIGH POINT, NC 27265

LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SITE PROPERTY BOUNDARY
- ADJACENT PROPERTY BONDARY
- STREAM/POND/RIVER
- PAVED ROAD
- UNPAVED ROAD
- FEMA FLOODPLAIN BOUNDARY
- STORAGE AREA BOUNDARY

REFERENCES

1. EXISTING TOPOGRAPHY SHOWN OBTAINED FROM THE CITY OF HIGH POINT 2003 GIS SURVEY, AND IS BASED ON THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM AND 1983 NORTH AMERICAN DATUM.
2. PROPERTY LINES, STREAMS, ROADS, AND OTHER SITE FEATURES WERE OBTAINED FROM THE CITY OF HIGH POINT PLANIMETRIC SURVEY, DATED DECEMBER, 2004, SHEETS NO. 6891.01, AND 6892.03.
3. FLOODPLAIN INFORMATION OBTAINED FROM FLOODPLAIN SURVEY CREATED BY THE CITY OF HIGH POINT, DATED OCTOBER 6, 2009.

0 100' 200' 300'
1" = 100'

NO.	REVISION	DATE

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SEAL

SEAL

PROJECT TITLE:
THE CITY OF HIGH POINT
INGLESIDE COMPOST FACILITY
INGLESIDE DRIVE
HIGH POINT, NORTH CAROLINA

DRAWING TITLE:
SITE PLAN

DESIGNED BY: P.K.S.	DRAWN BY: W.R.B.
CHECKED BY:	PROJECT NO.: HPOINT 09-2
SCALE: AS SHOWN	DATE: NOV. 2009
FILE NAME: HP-D0321	
SHEET NO.	DRAWING NO. FIG. 1

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Appendix C

G.N. RICHARDSON & ASSOCIATES
Engineering and Geological Services

December 15, 1998

Mr. Duane Jarman
Solid Waste Manager
Department of Public Services
P.O. Box 230
High Point, North Carolina 27261

RE: Report of Site Evaluation
Ingleside Composting Facility

Dear Duane:

G.N. Richardson & Associates (GNRA) is pleased to present this report of a site evaluation performed on December 9, 1998 at the referenced site. The evaluation consisted of a site reconnaissance and test pit investigation to characterize subsurface conditions, in partial fulfillment of NC DENR Division of Waste Management (NC DWM) requirements for a permit renewal application. This evaluation was performed at your request and was assisted by Mr. Steve Pendry and Mr. James Hussey of the City of High Point. This report describes the findings of our site evaluation and draws specific conclusions regarding facility capacity, as well as soil and ground water conditions at the site.

Project Description

The site is a Type 1 Composting Facility, as defined by North Carolina solid waste rule 15A NCAC 13B .1405 et seq. The facility is owned and operated by the City of High Point for the exclusive use of the City and its constituents. The facility accepts only yard wastes, pursuant to its permit, which was observed to comprise leaves, limbs, some larger wood debris, grass clippings and other vegetative debris that is considered to be yard wastes. There is an on-site scales, with a certified operator, and a full-time crew and supervisor. Mr. Pendry estimated that the facility receives approximately 10,000 tons of yard wastes annually (average, last 3 years).

Mr. Hussey described the overall material handling process. Woody vegetative debris, received all year long, are ground or shredded as needed prior to stockpiling as wood mulch. Leaves are received by the facility in the autumn months, comprising the chief carbon source. The leaves are stored in windrows on an asphaltic concrete composting pad, which measures approximately 500 by 175 feet. The windrows are turned periodically, as needed determined by temperature measurement — typically every week or two during the winter season, more often in the warmer seasons.

In the spring and summer months, grass clippings provide the chief nitrogen source, which is added to the windrows and blended as needed based on temperature. The compost typically matures in a few weeks following introduction of nitrogen sources, and the mature compost is screened (using the City's equipment) and stockpiled until sold to the public. The stock pile area has much more potential storage area than is typically required.

The entire site covers approximately 14 acres, with an active working area of about 5 acres, including the asphaltic concrete windrow pad. The concrete is supported on a soil embankment. The facility was constructed about 5 years ago. The site is located on a relatively broad ridge top, with drainage divided to the west (primary drainage direction for the active composting/storage areas) and toward the north east (mowed area north of scale house). Traffic access is from the east via Bellevue Street, crossing Ingleside Drive at the gate). The entire site is fenced. Surface water drainage is good, with very little surface ponding, despite the 0.8 inches of rain that fell overnight prior to the site visit. Sedimentation and erosion control features appear to be functional.

Original site preparation required minor grade cuts to the eastern side of the site, where natural rock exposures were noted, and embankment fills estimated to vary to 12 feet in thickness to the west side of the property. Much of the fill was brought in during construction of the Wal-Mart on U.S. 311, according to Mr. Pendry, including a layer of reddish clayey soils that reportedly "capped" the entire embankment area prior to construction of the composting facility. These soils were encountered in some of the test pits, described later.

Facility Capacity

Based on the facility operations descriptions provided by the site managers, a full autumn season's leaves can be stored on the asphaltic concrete pad, followed by a full spring/summer season's grass and other vegetative debris above the leaves. After composting (and associated bulk volume reduction), the stockpiles provide in excess of a full year's storage of finished compost. This provides, at a minimum, two year's operating capacity at the estimated 10,000 tpy intake. However, there are unused portions of the site within the 50-foot buffers that could be utilized for composting and/or storage, if needed, and ample space for storing completed compost adjacent to the asphaltic concrete pad. In short, the facility has more than sufficient space and buffer for the current operations.

Soil and Ground Water

Five (5) test pits were dug on the premises with a rubber-tire backhoe, as shown on the attached site map. Three pits (TP-1, -2 and -3) were dug near the asphaltic concrete pad, in the active composting and storage areas, underlain by man-made embankment. Two others (TP-4 and -5) were dug in the eastern areas, underlain by natural ground. The test pits were extended to depths of 4 to 6 feet, except where asphaltic concrete debris (in the embankment fill) or bedrock resulted in refusal conditions. Representative samples of the various soils were taken for visual identification per the Unified Soil Classification System and further evaluation, if needed. Table 1 presents a summary of conditions encountered at each test pit location.

Near the asphaltic concrete pad, test pits encountered a layered mix of organic soils (silty clay mixed with composted materials and/or gravel), stiff orange clayey silt (imported borrow) and a dry gravelly silt (resembling crusher run). The clayey soils, found in a 3 to 6+ foot thick horizon, were moist and very plastic, owing to the high clay content (estimated at 30 to 40 percent) and the presence of abundant mica. The plasticity is generally an indication of a high field capacity

(moisture retention) and a low permeability. The embankment soils appeared to be well compacted.

There were no saturated zones encountered within the soil embankment, except that the surficial soils were wet from the previous night's precipitation. There was no indication of ground water movement within the upper 4 to 6 feet beneath the asphaltic concrete pad. The test pits in the central and west portions of the site did not encounter natural soils, due to depth of the embankment, but past experience suggests that permanent ground water levels are deeper than the embankment section.

To the east of the asphaltic concrete pad, test pits encountered tan slightly clayey silty fine to coarse sands, derived from a parent bedrock exposed near one of the test pits (TP-4). The natural soils were dry to slightly moist and showed no residual texture or staining that would suggest the presence of shallow ground water. These soils exhibited slight to moderate plasticity, indicating a rather high (estimated 15 to 20 percent) clay content and a moderately high field capacity.

The asphaltic concrete pad and clayey fill soils observed near the pad limit surface water infiltration. Much of the site is graded and compacted, or covered with pavements. Based on topographic relationships and the test pit observations, ground water recharge from the active composting and storage areas is minimal. Ground water levels across the site are probably in excess of 20 feet, including both the active composting and storage areas and the undeveloped areas to the east.

Summary of Findings

- The site appears to be well managed, with adequate surface grades and storm water management features to minimize surface ponding.
- The active composting occurs on an asphaltic concrete pad, which is supported on a man-made embankment fill, with fill depths varying to an estimated 12 feet along the west side of the active area.
- The embankment fill was capped with a 2 to 3 foot thickness of compacted clayey silt during construction of the composting facility.
- The clayey horizon, in conjunction with the pavements and other hardened surfaces on the site, is believed to provide a barrier against downward migration of water.
- Drainage within active areas is to the west.
- The overall site is underlain by stable soils derived from a granitic bedrock.
- None of the excavated soils showed signs of ground water movement. The soils were generally slightly moist to dry, except in the upper few inches beneath the surface.

- No ground water or saturated zones were encountered within 4 to 6 feet beneath the ground surface.

- Based on topographic relationships and subsurface conditions encountered in the test pits, ground water depths are estimated to be in excess of 20 feet.

- At the estimated 10,000 tpy intake, there is more than ample developed space to conduct site operations, with at least 2+ years of available material processing and storage capacity.

- This estimated facility capacity discounts potential undeveloped areas and public demand for the finished compost.

Closing

GNRA appreciates the opportunity to be of continued service to the City of High Point. If you should have further questions, or if we may be of further service, please contact us at your convenience.

Very Truly Tours,
G.N. Richardson & Associates

G. David Garrett, P.G.
Vice President, Senior Geologist
N.C. Geology License No. 983

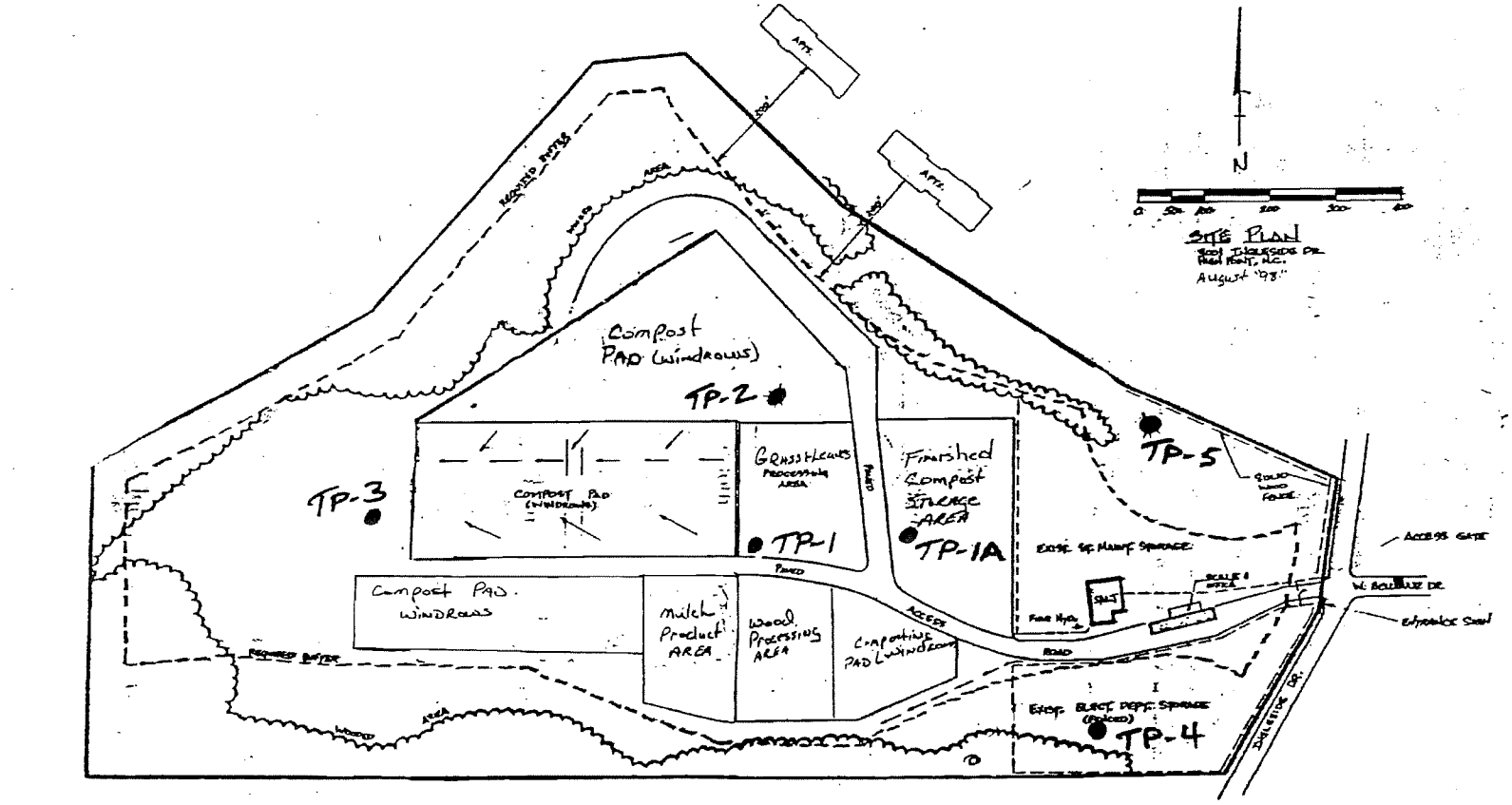
Table 1
Summary of Test Pit Data

TP-1	Southeast corner of asphaltic concrete pad
0"	Gravel and old compost
0 - 24"	Mixed clayey silt and gravelly silty fine sand — fill
	No water, difficult digging conditions due to relatively dense fill, no sample
TP-1A	Next to finished stockpile
0 - 29"	Old compost, clay, gravel
29 - 60"	Stiff orange-red micaceous clayey silt (CH-MH) — fill, sample taken
60+"	Dense gray-green gravelly fine sand with silt (SM, GM) — fill, sample taken
	No water, fill had some wood and concrete debris, appeared well compacted
TP-2	Northeast corner of asphaltic concrete pad
0 - 24"	Dense gravelly sand (SM) with old compost at surface — fill
	No water, difficult digging, no sample
TP-3	West side of asphaltic concrete pad, 150 feet from NW corner
0- 24"	Old compost, clay and gravel
24 - 72"	Stiff slightly fine sandy, clayey silt with mica (ML-MH) — fill, sample taken
	No water, uniform material, moderately well compacted, fill height estimated to be 10 - 12 feet at northwest corner
TP-4	Southeast side of property, about 200 feet south of scale house
0"	Surficial grass, area likely has been graded
0 - 24"	Dense, dry, tan slightly clayey silty fine sand with rock fragments (SM) — sample
	Difficult digging, refusal on bedrock (granite outcrop 45 feet west), no water, area high on slope with fairly good drainage (ground water several feet deep)

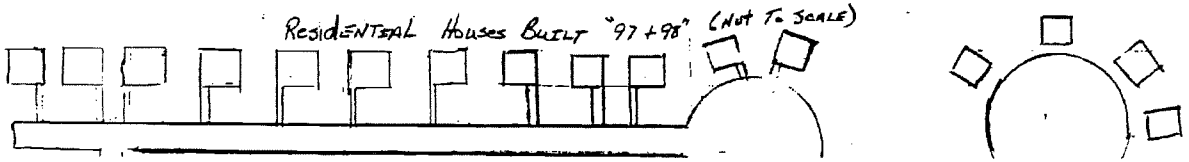
TP-5	Northeast side of property, 300 feet north of scale house
0"	Surficial grass, little to no grading
0 - 36"	Medium stiff, tan-white, very slightly moist, slightly clayey silty fine sand
	No water, no staining or residual texture, area high on slope with good drainage

INGLESIDE COMPOST FACILITY

PUBLIC SERVICES DEPARTMENT



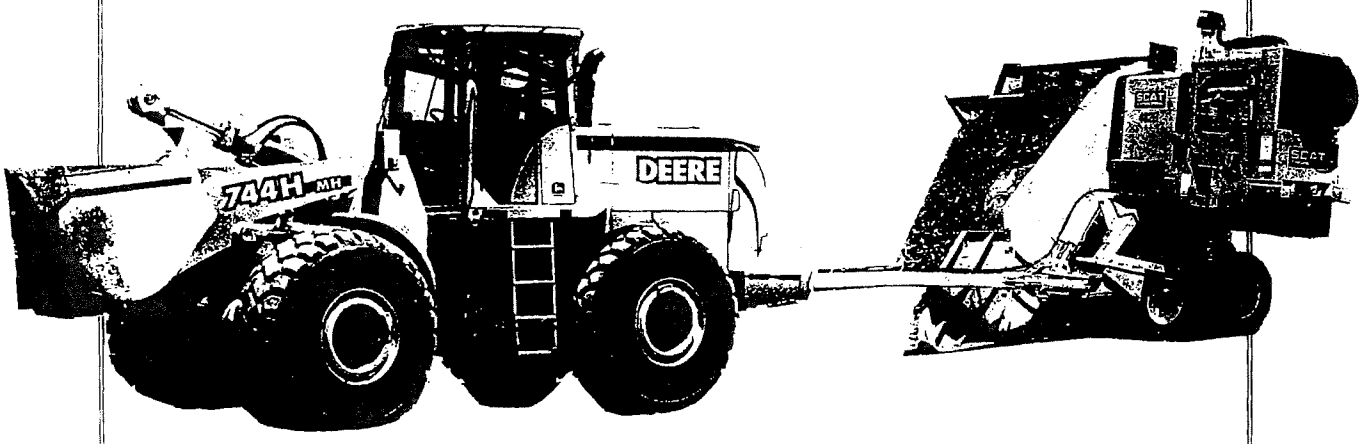
Residential Houses Built '97 + '98 (Not To Scale)



Appendix D

OPERATIONS PLAN FOR THE INGLESIDE COMPOST FACILITY

CITY OF HIGH POINT
NORTH CAROLINA



INGLESIDE COMPOST FACILITY
OPERATIONS PLAN (Revised: January 2011)

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DESCRIPTION OF OPERATIONS

NAME OF FACILITY
Ingleside Compost Facility (ICF)

ADDRESS
3001 Ingleside Dr.
High Point, NC 27265

RESPONSIBLE PERSONS
Mr. Randall Lee (Composting Supervisor)
Mr. Steve Pendry (Landfill Superintendent)

PHONE NUMBER
(336) 883-8514

SITE PERSONNEL

Composting Supervisor
Supervises site operations and site personnel under the direction of the Landfill Superintendent.

Scale House Operator/Attendant
Weighs, records, and directs incoming vehicles.

(3) Landfill Equipment Operators I
Operates various equipment associated with composting operations.

Sanitation Worker
Performs labor type tasks at the site.

SCHEDULED HOURS OPEN TO THE PUBLIC

Monday - Friday	9:00 am - 4:00 pm
Saturday	9:00 am - 1:00 pm
Sunday	closed

GENERAL OPERATIONS PLAN

The Ingleside Compost Facility (ICF) is designed to be a large Type 1 composting facility. The overall operational goal is to compliment the integrated solid waste management plan instituted by the City of High Point. This plan is designed to meet or exceed the State of North Carolina Solid Waste Management Rules and Solid Waste Laws, Section .1400, and aid in conserving the environmental resources available to the City of High Point residents and corporate business interest. This will be accomplished by the removal, processing, use and sale of the organic portion of the municipal waste stream commonly referred to as "Wood and Yard" waste.

It is the intent of the ICF to accept all yard waste and acceptable wood from residential and commercial enterprises for recycling. This will encourage the use of the facility and minimize illegal disposal of materials. The City collection vehicles designated for yard waste collection, leaf collection, organic construction debris collection, etc. will also deliver acceptable materials to the ICF.

RECEIVING

All vehicles entering the facility will be weighed and recorded according to the type of material. The scale house attendant will then instruct the vehicle driver to the appropriate off-loading area (i.e. wood processing area, grass and leave processing area, etc). The scale house attendant will notify the appropriate ICF employee to allow inspection of the materials as they are being off-loaded. The visual inspection insures received materials are compatible with the intent and goals of the ICF. Those materials not acceptable at the ICF will be handled appropriately as outlined.

For the grass and leaves processing area, bagged material will be placed on the west end of the pad and loose and/or ground material will be placed at the east end.

PREPARATION AREA

The receiving areas will be that portion of the ICF so designated (see Site Plan in Appendix B of the Permit Renewal application) for the off-loading of incoming materials and temporary storage of said materials. The processing areas will be used for the appropriate processing of the materials (i.e. grinding of wood, de-bagging of leaves and grass, separation of

large wood items, etc.). These areas will be designed and maintained to allow easy access and use in various weather conditions to facilitate the consistent use of the ICF.

INCLEMENT WEATHER PRECAUTIONS

During wind, heavy rain, snow, freezing or other adverse conditions appropriate changes will be made. Receiving and preparation areas will be made as accessible as possible to incoming vehicles. Appropriate fences and boundaries will be installed to secure materials. All other operations will cease if necessary. If the situation warrants it, the facility will be closed.

ACTIONS TO ELIMINATE NUISANCES

Since the opening of ICF, several actions have become established in our normal operating procedures to eliminate possible nuisances to the surrounding area. These include:

- construction of earthen berms which are approximately 8-10' high;
- site is enclosed by 6' high chain-link fence with 2' of barbed wire;
- 6' wooden fence on eastern boundary of site;
- portable litter fences - used as needed around working areas; and
- deodorizer and insect control (sprayed when necessary).

Furthermore, the site is elevated higher than the surrounding area. Therefore, water run-on is minimal. Water run-off is controlled by the use of perimeter drainage measures.

WINDROW METHOD

The composting technology employed at the ICF is open "windrow". The windrows will be constructed on the designated windrow areas. The windrows will be constructed using layered feedstocks, as materials are available. The height and width of the windrows will be determined by the mechanical design of the machinery used for the turning process.

STABILIZATION

The stabilizing of the compost product is achieved through a process which allows for the gradual reduction of microbial activity in the presence of moisture and aeration. This stabilizing usually requires three to four weeks and may be performed in the original windrow placement.

CURING, SCREENING, QUALITY CONTROL

This stage of the composting process requires the movement of the stabilized compost to the final storage area. The compost product will go through a screening process for the removal of large particles and improve the consistency and quality of the final product. Screening may occur as the compost is transferred from the windrow to the final storage area. If compost is transferred to the final storage without screening, final screening will occur prior to transport of compost for final use.

Screened material is typically placed on berms around the perimeter of the site. Periodically, these berms are removed, rescreened, and replaced.

COMPOST AMENDMENT

The City may add municipal sludge incinerator ash from their East Side Wastewater Treatment Plant sludge incinerator as an amendment to the stabilized compost and to engineered soil. The incinerator ash will be tested quarterly for total metals (including arsenic, cadmium, lead, mercury, molybdenum, nickel, and selenium) prior to shipment to the site and must meet the criteria shown in Table 1. Should quarterly testing show the concentration of one or more metals in excess of that listed in Table 1, then the ash will not be accepted. Also, a NC Department of Agriculture (NCDA) waste analysis (including analyses for nutrients, metals, and calcium carbonate equivalence) will be performed for every 1,000 CY of ash to be delivered to the site to guide the quantity of ash to be added to the compost. Note that values for copper and zinc (and cadmium, lead, molybdenum, and nickel if reported) as reported in the waste analysis must meet the criteria shown in Table 1.

Municipal sludge incinerator ash will either be temporarily stockpiled on-site (see Site Plan in Appendix B of the Permit Renewal application) or be mixed directly with the stabilized compost or engineered soil upon delivery to the site. The mix ratio for amendment of compost will be guided by the results of the waste analysis. If the ash should have a significant

neutralizing value, as determined by the calcium-carbonate equivalence test, the ash will be mixed with the compost only in such quantity as necessary to optimize the pH.

If stockpiled on-site, ash stockpiles will be protected from runoff by placing straw bales, mounded compost, silt fence, or other suitable device just downslope of each stockpile. Additionally, the City will spray the surface of each stockpile as required to control dust generation. In no case will the City stockpile more ash than is anticipated to be used in a two (2) month time frame and will not exceed 5,000 CY at any time. Stockpile quantities will be guided by the results of the NCDA waste analysis.

STORAGE, TRANSPORTATION

In the final storage area, compost will be stockpiled and final curing of the product may occur. The storage area will be maintained to allow easy access and movement of equipment for screening and loading of materials for transporting to end-users. Trucks arriving at the ICF to load compost will weigh-in at the scales. The scale operator will give direction to the final storage area and notify the ICF staff of the need to load the customer. The loaded vehicle will then exit across the scales so materials may be recorded by weight.

USE AND MARKETABILITY OF COMPOST

It is the intent of the City of High Point to continue to develop products at the ICF which will have the ability to be used at parks, golf courses, road right-of-ways and beautification projects. In addition, commercial landscapers and private citizens purchase the compost as a soil amendment. Numerous studies conducted in North Carolina and the U.S. have proven the excellence of compost materials in the following uses: soil amendments are tilled into the soil to help retain the particle moisture, enhance soil drainage, improve nutrient transfer to plants, and enable deep root penetration resulting in healthier plants; soil mulch applied to the top of the soil to help control weeds, protect plant roots, and prevent soil from drying. Compost may also be used to help replace topsoil and aid in the prevention of erosion. The bulk application of compost in agricultural uses has proven to be an effective, economically viable method of improving nutrient depleted soils while reducing the need for commercial fertilizers.

The key to successful marketing will be the perception and acceptance of the product by the public. With good ICF public relations, education and marketing expertise, the compost

product should continue to have readily available markets within the Piedmont/Triad metro in governmental, commercial, agricultural, and private applications.

OTHER PRODUCTS

In addition to compost, mulch and engineered soil are also produced at the ICF. Mulch will be produced by grinding and screening wood wastes. Engineered soil will be produced using the following typical mixture:

Virgin Cut Soils:	45%
Cured Compost:	45%
Raw Leaves:	5%
Municipal Sludge Incinerator Ash:	5%.

This mixture will be screened to create the finished product.

COMPOSTING PROCEDURES

The purpose of this section is to establish the procedures for producing compost at the ICF. These procedures may be refined or modified as experience is gained in the composting process.

ACCEPTABLE MATERIALS

The ICF is designed as a wood and yard waste composting facility. Materials accepted at the ICF from the public (commercial & private) include:

- untreated, unpainted, and unglued wood waste;
- yard waste (leaves, grass, brush, limbs);
- silvicultural waste; and
- other compostable waste determined as suitable for the composting process by authorized personnel and by Section .1400 of the Solid Waste Management Rules of North Carolina.

After weighing in, the acceptable materials will be off loaded at the appropriate location as determined by the ICF Staff (receiving area, windrow area, over-flow area). Each load will be examined for contaminants and non-conforming or unauthorized material. The ICF Staff will be responsible for the coordination of removal of these products. Acceptable materials may be expanded as knowledge, technology, and expertise allow processing of these materials.

PREPARATION OF MATERIALS

The preparation of materials will consist of grinding/mulching of wood waste, brush, leaves, etc., and also the debagging of leaves and grass. This preparation will be performed at the designated areas. The ICF staff will be responsible for preparation of the material in a manner suitable for application as feedstock in the windrow area. The ICF staff will be responsible for the "timely" processing and transfer of material from the processing area to the windrow area.

Grass clippings will be incorporated into windrows and turned within 48 hours of on-site arrival. This will prevent odors and insure space availability at the receiving and processing

areas for incoming materials.

WINDROW CONSTRUCTION

The windrows will be constructed in the designated areas (see Site Plan in Appendix B of the Permit Renewal application). The finished dimension of the windrows will be approximately 15 feet wide by 6 feet high with a top width of 1 foot. The height and width of the windrows will be determined by the mechanical design of the machinery used for the turning process. The windrows will be constructed using layered feedstocks as materials are available. The materials may be placed in the original windrow by one of the following methods:

- Dumping bed or eject bed trucks may off-load the first layer of feedstock (leaves, wood chips, grass, etc.) in the windrow in a contiguous length dumping method. This method will be done at the direction and supervision of the ICF staff.
- Materials may be moved from the receiving or processing area and placed in the windrows by a front-end loader.

The original 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. The second layer of feedstock may be placed on the windrow by dumping material from a truck onto the original layer, if the layer is less than 18 inches in depth. The preferred method is to place the second layer of feedstock on the windrow with a front end loader. The feedstock for the subsequent layers will be placed by a front-end loader.

The various feedstocks for the second and subsequent layers may be moved to the windrow area from the processing area by dump truck or front end loader. The feedstocks may be dumped next to the windrow under construction to allow easy front-end loader application to the windrow. During the layering of the feedstocks it is permissible to have a "mixing" of feedstocks in the windrow. The front-end loader, while placing feedstocks in the appropriate quantities, will be used to accomplish the desired windrow shape. During the layering of the feedstocks it is desirable to check and adjust the moisture of the windrow. This will assure a proper moisture level throughout the windrow during it's construction.

Moisture

The percentage of water in the composting material is a vital element in achieving the desired aerobic composting results. The bacteria required in the aerobic process need adequate quantities of moisture, oxygen, and nutrients to accomplish particle decomposition. The initial formation of the windrow should strive to achieve a 60% moisture to 40% solid ratio. Moisture addition is typically handled through rainfall alone. However, additional water could be required during extended dry periods. As the composting process begins, the initial turning and temperature rise will create a substantial loss of moisture. After this initial loss of moisture, the desired moisture content should be approximately 50% until initial stabilization of the material begins. A 40% moisture to 60% solid ratio is optimum during the stabilization and curing stages. The moisture content during the composting cycle is critical to producing a satisfactory final product. Excessive water will cause undesirable odors. Insufficient water will slow the decomposing process by "drying" of the bacteria prior to the final energy release of the process. The ICF staff has established good operating and inspection procedures to insure proper moisture. The exposed windrows may allow rain to penetrate and change the moisture content. The ICF staff should be aware of current weather conditions and forecast weather when determining the necessity of moisture addition to the windrows (i.e. whether windrows need to be turned or not). Generally, the shape of the windrows will help limit excessive moisture penetration by shedding the rain. The grade of the pad will allow rapid drainage of the composting area. Free moisture on the compost pad should not be allowed to occur. The ICF staff will be responsible for proper drainage of the compost pad.

Oxygen

The composting process is best in the aerobic state – in the presence of oxygen. While decomposition will occur in the anaerobic (without oxygen) state, it is much slower and is normally associated with odor problems. The windrows should be formed without mechanical compaction. This will automatically leave voids in the materials allowing the area required for oxygen. The windrow should be turned periodically to "fluff" and mix the composting material. This will allow a more consistent availability of oxygen for microbial activity. While oxygen is necessary for aerobic composting, too much oxygen (turning too frequently) will slow down the metabolic process by allowing the heat formed in the pile to escape also causing excess moisture

evaporation.

Nutrients

Wood and yard wastes have the nutrients of nitrogen, phosphorus and potassium of which nitrogen is the key element in the composting process. The carbon to nitrogen ratio must take into account the difference between decomposable carbon and total carbon. Different feedstocks will have various levels of decomposable carbon. Normally, during windrow construction, the layering of feedstocks will be designed to allot the proper carbon to nitrogen ratio. This ratio should ideally be in the 20:1 to 35:1 range. The average carbon to nitrogen ratios for specific materials are as follows:

Materials	C:N Ratio
Wood Chips	800:1
Saw Dust	400:1
Straw	100:1
Leaves (dry)	90:1
Leaves (fresh)	40:1
Grass	20:1

The on-site construction of windrows should have goals of 20-35:1 ratios at the beginning of the composting process. The cured product may see reductions to 10-15:1 through carbon released during the decomposing process. The ICF staff should analyze incoming materials to determine the availability of low C:N ratio materials to be mixed. The use of partially decomposed or composted materials as a layered feedstock is permissible. This material would have a lower C:N ratio and would act as an inoculate and help reduce the C:N ratio of higher feed stocks. (Example: materials in the middle of the composting process 3 - 6 weeks, may be layered into a new windrow of leaves and woodchips to provide a lower C:N ratio and aid in achieving the desired decomposition rate.)

Other nutrients, such as phosphorus and potassium, are normally not a limiting factor in wood and yard composting activities.

pH

pH is the measure of acidity/alkalinity. The correct pH balance plays another critical role in the composting process. The pH balance affects the quantity of nutrients available to support the microbial activity. The overall metabolic rate may be affected and the heavy metal solubility is reduced if the correct pH balance is not maintained. It has been found through various programs and tests that a pH level in the 6 to 8 range (neutral) is the desired level for the composting process. Lime as an additive to the feedstock is recommended as necessary to increase pH levels. When used lime will be spread on top of windrows and turned in with the compost turner.

It is of paramount importance to monitor temperature, nutrient levels, etc. The monitoring procedures will be performed by the ICF staff.

Physical Properties

The physical properties include particle size, temperature and their relation during the composting process. The role of particle size affects the rate of decomposition. The smaller particle size allows more surface area for microbial activity which results in a rapid decomposition rate and a natural volume reduction. The small particle size must be balanced by the need to have voids (airspace) available between particles for oxygen to the microorganisms. This often results in the blending of feedstocks to insure a good mix of small particles and larger "bulking" particles to maximize oxygen availability and microbial activity.

All microorganisms have an optimum temperature range. The ideal range for the decomposition process is 131 to 145 degrees Fahrenheit for several consecutive days. (Minimum of 3 days). It is also necessary to insure that all portions of the compost are exposed to this temperature for the minimum number of days to insure the pathogen destruction that must occur to have a quality compost.

Temperature is also a key element to internal windrow activity. If microbial activity is so great that temperatures rise above 150 degrees, this results in destruction of the microorganisms and the retarding or stopping of the microbial activity prior to the complete aerobic decomposition of the feedstocks. If the temperatures do not exceed 131 degrees, the microbial activity is not sufficient and the ICF staff will troubleshoot and correct the cause of the low temperature.

Temperatures will be taken daily (M-F) while actively composting with a compost thermometer approximately 50-60 feet apart. When temperatures reach a sustained 131 degrees for three days, windrows will be turned with the compost turner.

The ICF staff will be responsible for mixing feedstocks to achieve the blend of properly sized material and will be responsible for the testing of windrows to insure temperatures are met.

COMPOST STABILIZING AND CURING

The stabilizing and curing of compost are two separate steps which may take place at different locations at the facility.

Stabilizing is the gradual reduction of microbial activity while in the presence of oxygen and moisture. This microbial activity reduction results from the completion of the decomposition of the mixed feedstocks. The stabilizing process will be done by combining windrows of similar feedstock age. This will maximize the utilization of the compost pad. The ICF staff should record when windrows are combined and keep appropriate records of materials. Stabilizing of the compost usually begins 9 to 12 weeks after windrow construction. Stabilizing is characterized by a substantial drop in temperature after the active composting period. The windrow will also visually be smaller with a distinct particle size reduction. The ICF staff will use their discretion on stabilizing periods (normally 3 - 4 weeks) and combining of windrows. Typically, compost remains in windrows for approximately 5 months.

The final curing period of the compost will be accomplished in the final storage area (typically a 1 to 3 month period between windrowing and distribution). The ICF staff will determine the appropriate time to transfer the compost to the final storage area. Screening to achieve correct particle size and compost quality should occur at this point if the ICF staff determines work conditions are appropriate. The curing process allows for "piling" of materials. The process is characterized by low temperatures and low microbial activity. Some further decomposition of cellulose and lignin may occur during curing.

COMPOST SCREENING, AMENDMENT, AND STORAGE

Screening of the material should occur before transfer from the windrow to the final storage area or prior to off site shipping. The market and end use will have a direct effect on final product size. The screening is the sifting of the compost through a screen to remove large

particles and improve the quality and consistency of the compost. Typical screen sizes range from .25 inches to 1.0 inches and are interchangeable. Often, the larger screened particles will have a market allowing this larger material to be the final product. Large material may also be reintroduced as feedstock (the bulking agent) in new windrow construction.

Compost amendment with municipal sludge incinerator ash (if used) is also done just prior to or upon transfer of the compost to the final storage area (see Compost Amendment, p. 5, for a description of the amendment process).

WINDROW REPORT, SAMPLING, QUALITY CONTROL

The composting process is a natural biological process. A composting program may have various degrees of success when compared to the goals and objectives desired. To insure a successful composting program, a systematic approach to recording and reporting will be employed. The ICF staff will be the responsible party for recording information for each windrow constructed. The windrow report will contain the following: the amounts and types of feedstocks, percentage of moisture at windrow construction and subsequent applications, the initial temperature of the windrow, periodic temperature of windrow, approximate distance between testing points, date of each turning of windrow, date when windrows are combined, comments section for general notes on processing, weather, etc.

The compost will have unrestricted applications and distribution provided that it contains no pathogenic organisms, is free from offensive odor, and has no sharp particles which could cause injury to persons handling the compost.

The ICF staff should maintain a daily calendar where notations of weather conditions may be recorded. This information will be used in comparing and analyzing windrow reports for processing rates, volume reduction, and compost suitability.

The ICF staff will be the responsible party for achieving and maintaining Quality Controls in the composting process. The success of the composting program is directly related to the quality of the final product. The ICF staff should seek the advice and input of Public Services staff and independent experts when areas of concern develop with regards to quality control of the compost product.

ODOR, DUST, AND VECTOR CONTROL

The ICF is intended to be a positive, environmentally friendly waste disposal alternative. The ICF will be operated utilizing procedures which will minimize odor, dust, and vectors.

Odor control is of paramount importance for favorable acceptance and good public relations with users of the facility and surrounding neighbors.

Grass clippings may present the most consistent problem of minimizing odor at the ICF. Grass clippings begin the decomposition process quickly and will go "anaerobic" quite easily. Odors are often released during mixing or turning of the windrow. Several factors should be incorporated to help negate the odor problem:

- Grass will be processed and turned within 48 hours of arrival at the receiving area;
- Windrows should be well aerated;
- The ICF staff should be knowledgeable of "aerobic" and "anaerobic" characteristics of windrow composting;
- Wind should be minimal or blowing away from neighbors when compost turning occurs (when feasible); and
- Existing natural buffers will be maintained around the facility to help minimize the effect on neighbors.

When areas in the windrows are deemed to be in the "anaerobic" state, an acidic condition occurs in the compost. Often, the application of lime will aid in the neutralizing of the acidic condition and be effective in odor control (see pH, p. 11). Additionally, the ICF staff will use an existing odor control spray system (generator/atomizing sprayer/deodorant) if necessary to control odors.

The ICF will be regularly patrolled for trash, wind blown debris, etc. These materials will be placed in the appropriate area or containers for proper disposal. It will be the responsibility of the ICF staff to minimize any problems in this area. Additionally, the ICF staff will utilize a commercial spray if necessary for the control of flies or other insects. The ICF staff will maintain proper drainage and minimize standing water at the ICF to reduce the possibility of vector problems.

EQUIPMENT

The primary equipment required at the ICF and their general uses are listed below:

- Tubgrinders: used for grinding of bulk wood, limbs, etc.
  May also be used to reduce particle size of feedstocks.
- Front-End Loaders: used to transport, move materials, load trucks, mix feedstocks, and form windrows.
- Dump Truck: used to transport feedstocks from mixing area to windrows and compost from windrows to final storage area.
- Compost Turning Machine: used to turn, mix, mulch, and form the windrows of feedstocks.
- Screening Machine: used to screen stabilized compost for product particle sizing, quality, and consistency.
- Compost Thermometer: used to determine temperatures in the windrows, stabilizing piles, and curing piles. Note that analog thermometers are typically used at the facility. These thermometers will be replaced when obvious erroneous readings occur.

STORM WATER CONTROL

The ICF will be operated and maintained to provide optimum drainage for all areas of the facility and to comply with applicable regulations.

SECURITY AND NON-CONFORMING MATERIALS

The ICF is intended for use by the public, commercial and governmental bodies for recycling of organic waste. Due to the use of the ICF by diverse groups, safety is of paramount importance. The implementation of the following guidelines should minimize incidents and allow ICF personnel suitable methods for reaction to any occurrences.

SECURITY

The ICF is designed to be a restricted access facility. As a restricted access facility there are posted hours of operation. The various parties will be allowed to use the facility during the posted hours and at other times mutually agreed by City of High Point Public Services staff.

To prevent access during non-operational hours, fencing at all areas of access will be installed, maintained, and used by the ICF personnel. Fencing should be adequate to control automobile, motorcycles, etc. as well as capable of deterring foot traffic. Security of the facility will be aided by strategic placement of lights to restrict theft and miscellaneous nuisance behavior.

If it is deemed in the best interest of the City, a security guard may be located at the ICF during non-operational hours.

SAFETY

The safety of personnel and users at the ICF is of paramount importance. The categories of safety include: Human, Equipment, and Environmental.

Human safety: encompasses all people working, delivering materials, or receiving finished product at the ICF. The ICF operation will be conducted in compliance with the applicable safety mandates. All appropriate telephone numbers of emergency agencies should be prominently displayed and all ICF staff will be familiar with said numbers and location of telephones. Guidelines will be utilized to insure proper response and reporting in the event of injury.

Equipment safety: It is the intent of the City of High Point to acquire adequate equipment to accomplish the goals and objectives of the ICF. As such, all equipment will be used in the manner for which it was intended. The ICF staff will take all necessary steps to maintain equipment in a safe and operational condition. The staff should be familiar with and follow all

manufacturers' recommendations in the use and maintenance of the equipment.

Environmental safety: The ICF is designed to be an environmentally friendly yard waste facility. As such, the ICF is designed to generate products which will compliment our environment by replacing lost soil components. The layout and operation of the facility will control the by-products of the composting process to insure the environmental compatibility of the ICF.

FIRE

The natural process of composting is employed at the ICF. The process develops internal heat to aid in the natural decomposition process. When heat is in the presence of various flammable feedstocks, there is the potential for occasional fires.

The ICF personnel will be trained in elementary, on-site fire reaction procedures. The ICF personnel will have on-site accessible equipment to aid in the early suppression of fire. This equipment will include but not be limited to: fire extinguishers, fire hoses for the on-site fire hydrant, and hand shovels.

The ICF operation will allow access and movement of emergency fire fighting equipment at all times. The ICF management will arrange fire drills to test ICF personnel on proper response. Any and all occurrences of fire will be recorded and analyzed by City of High Point staff and procedures established to prevent the reoccurrence of similar circumstances. Fire will be reported to the State of North Carolina as required by the permit (41-10-yw).

NON-CONFORMING/UNAUTHORIZED MATERIALS

It is not the intent of the ICF to accept any materials not in the "Acceptable Material" category. Loads will be inspected by ICF personnel prior to and during off loading to insure acceptable material types. Any non-conforming/unauthorized materials will not be allowed to off-load. Any materials found during off-loading will be reloaded into the delivery vehicle by the driver of the vehicle. ICF personnel will be knowledgeable of approved disposal options for various non-conforming/unauthorized materials. Drivers with said materials will be directed to appropriate disposal locations. Prior to the vehicle exiting the ICF with non-conforming/unauthorized material, the vehicle should weigh at the ICF scale house to insure accurate weights of incoming materials.

In the event small quantities of non-conforming/unauthorized waste are found in the receiving/processing area, these materials will be separated by the ICF staff. A location has been established for temporary storage of these materials (40 c.y. roll-off box). ICF personnel will be responsible for the loading and transporting of said materials to the Kersey Valley Landfill for disposal. Weight and material reports will be kept of all such disposal loads to facilitate accurate analysis of the ICF program.

OFF-SPECIFICATION MATERIALS

Due to the mixing of various feedstocks during the windrow construction and varying sizes and decomposition rates, the final compost product is expected to have large and small particles. Screening of the final product will allow size separation according to screen dimensions. Materials too large for use as a soil amendment, mulch, or other suitable application, will be classified as "Off Specification" material. Final compost materials which do not meet the conditions for unrestricted application will also be considered "Off Specification" material. These "Off Specification" materials will be handled as follows:

- If the Off Spec. material is suitable for use as a feedstock (bulking agent) it may be reintroduced in new windrow construction. Records of such use will be included on the windrow report.
- If the Off Spec. material is not suitable for use as described above, and no alternative use is available, the Off Spec. material will be disposed of in the same manner as described for non-conforming/unauthorized materials. Detail reports of weights, materials, and reason for disposal will be kept by the ICF staff.

SUMMARY

It is the intent of this Operations Plan to provide the basic information required to operate the ICF. While many operational problems and situations have been addressed, not every circumstance can be listed. The plan is designed to allow amending and expansion as day to day operations and experience are realized. All changes or additions to the Operations Plan will be done by Public Services staff with appropriate consultation if required.

The ICF is a positive method of recycling yard and wood waste generated in the City of High Point area. The ICF may address future growth by expanding the acceptable materials to include other biodegradable organic matter which would produce a marketable final product.

The composting of biodegradable organic matter is given priority on the EPA hierarchy of waste management methods. The ICF will allow the City of High Point a complimentary program to aid in the overall waste reduction goals as established in the Solid Waste Management Plan adopted by the City of High Point City Council.

TABLE 1: INCINERATOR ASH QUALITY REQUIREMENTS[1]

POLLUTANT	CONCENTRATION (mg/kg) (See Note 2)
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Molybdenum	75 (See Note 3)
Nickel	420
Selenium	100
Zinc	2,800

Notes:

1. Reference: Table 3 of 40 CFR 503.13 (Pollutant Limits For Sludge - Average Concentration).
2. Concentrations shown are on a dry weight basis.
3. Molybdenum concentration is not listed in Table 3 of 40 CFR 503.13. Concentration shown is from Table 1 of 40 CFR 503.13 (Ceiling Concentration).

CITY OF HIGH POINT
INGLESIDE COMPOST FACILITY
Weekly Status Report Date: ________________

1. Windrow Formation

Row: ___ Length _____ Height ______ Width _____
Primary Materials ____________________
Temperature: Mon_________Tue_________Wed_________Thur_________Fri_________
Moisture: Mon_________Tue_________Wed_________Thur_________Fri_________
Turned: _________ Misc.____

Row: ___ Length _____ Height ______ Width _____
Primary Materials ____________________
Temperature: Mon_________Tue_________Wed_________Thur_________Fri_________
Moisture: Mon_________Tue_________Wed_________Thur_________Fri_________
Turned: _________ Misc.____

Row: ___ Length _____ Height _____ Width _____
Primary Materials ____________________
Temperature: Mon_________Tue_________Wed_________Thur_________Fri_________
Moisture: Mon_________Tue_________Wed_________Thur_________Fri_________
Turned: _________ Misc.____

Row: ___ Length _____ Height _____ Width _____
Primary Materials ____________________
Temperature: Mon_________Tue_________Wed_________Thur_________Fri_________
Moisture: Mon_________Tue_________Wed_________Thur_________Fri_________
Turned: _________ Misc.____