

March 14, 2011

Scanned By	Date	DOC ID	Permit
Backus	04/04/2011	13303	41-03

Ms. Patricia Backus, P.E.
North Carolina Department of
Environment and Natural Resources
401 Oberlin Rd
Raleigh, NC 27605

RE: Application for Continued Operation – Response to Comments
City of Greensboro, White Street Construction and Demolition Landfill (C&DLF, Phase II)
Guilford County, Permit No. 41-03
HDR Project No. 06770-67286-018

Dear Ms. Backus:

HDR Engineering Inc. of the Carolinas (HDR), on behalf of the City of Greensboro Environmental Services Department is hereby submitting the following responses to your comments in the October 29, 2010 letter from the Solid Waste Section. The following documents from the original permit have been updated or added in response to your comments in the October 29, 2010 letter.

- Operation Plan
- Closure Plan
- Post Closure Plan
- Closure-Post Closure Cost Estimate
- Appendix C: Hazardous Materials Contingency Plan
- Drawing CD-77B
- Drawing CD-78B
- Drawing C-06

To aid in your review, we have structured this response letter to closely match the order of your questions and comments. When appropriate, responses have been provided immediately after the question or comment. A copy of each revised document is included in the enclosed permit amendment for your review and approval. In addition, a revised copy of each updated document is provided with tracked changes for your ease in reviewing the specific revisions that have been made.

Operations Plan

Rule .0547(4)(b) requires the application to contain an operations plan in accordance with Rule .0542, including a five-year phase of development and a waste acceptance plan in accordance with the existing permit.

1. Section 1.0 Introduction – In the previous permit it was stated that land-clearing debris, inert debris, and asphalt were approved in addition to C&D waste. Therefore, you may state that it “has” been approved rather than it “may” be approved.

The text in Section 1.0 has been edited to reflect change.

2. *Fig. 2 – The sign must also list municipal waste as an excluded waste. [Rule .0542(j)(6)]*

The City will modify the sign in Figure 2 so that it identifies municipal solid waste as an excluded waste.

3. *Drawing CD-77B – Please provide a legend to indicate what the different line styles represent.*

Drawing CD-77B has been revised to include a legend.

4. *Drawing CD-78B – Please provide a legend to indicate what the different line styles represent. It also does not appear to illustrate the difference between current waste placement and closed MSW as stated in Section 10.0 of the Operation Plan.*

Drawing CD-78B has been revised to include a legend. The extents of the closed MSW landfill, the limits of C&D landfill, and the approximate area of the active C&D waste placement have been included. Section 10.0 of the Operation Plan has been revised too.

5. *A cross-section drawing relating to the fill plan should also be provided.*

Drawing C-06 Fill Plan has been provided.

6. *Estimates of volume and weight for waste and cover and of remaining airspace should be included based on the fill plans.*

Estimates of volume and density are included on drawing C-06.

7. *Six inches of earthen material is required for the conditions listed in Section 12.1. Please specify this in the plan.*

Section 12.1 has been revised to include this requirement.

8. *Intermediate cover must be applied on areas which will not have waste on them for three months or more rather than twelve months. Please make this correction. [Rule .0542(f)(2)]*

Section 12.2 has been corrected to state three months duration.

9. *The Operation Plan should also specifically address disease vector control. [Rule .0542(h)].*

Section 13.0, Vector Control, has been added to the Operation Plan. Subsequent sections have been renumbered accordingly.

10. *In Section 13.3, please include the specific reporting requirements listed in Rule .1626 (4)(c) (ii) and (iii) for when methane gas levels exceed the limits.*

Please note: this is now Section 14. The specific reporting requirements listed in Rule .1626 have been added to Section 14.3.

11. *Section 14 – The content of the written notification for fires and explosions is more specific in Rule .0542 than in Rule .1626. Please include the content requirements in the last paragraph.*

Please note: this is now Section 15. Content requirements of written notification have been added to the last paragraph of this section.

12. *In Section 18.0, NPDES stands for National Pollutant Discharge Elimination System.*

Please note: this is now Section 19.0. Reference to the NPDES has been corrected.

13. *Please update the phone number for the Winston Salem office in the Hazardous Materials Contingency Plan in Appendix C. It should be 336-771-5000.*

This phone number has been updated. In addition, to several other updates.

14. *Record keeping (Section 22.0) should also include any cost estimates and financial assurance documentation required under Rule .0546. [Rule .0542(n)]*

Please note: this is now Section 23.0 Item 18 for cost estimates and financial assurance documentation has been added to the record keeping list.

15. *In addition, I reviewed your permit issued May 25, 2006, for permitted solid wastes. Please note that we no longer use the term “C&D like waste” because there is not a statutory or regulatory definition. Waste from a manufacturer is industrial solid waste and must not be disposed in a C&DLF unit unless a demonstration has been made and approved by the Division. [Rule .0542(e)(4)] If you have a specific waste stream that was accepted under the term, please provide specific information on the waste and source and it may be included as an exception.*

The City of Greensboro does not currently accept waste from a manufacturer at the Phase II C&D landfill. The City of Greensboro would seek to have a demonstration and approval by the Division in accordance with Rule .0542(e)(4) if a source of industrial solid waste wishes to dispose at the landfill.

Closure and Post-Closure Plan

Rule .0547(4)(d) requires the application include a closure and post-closure plan in accordance with Rule .1627. In accordance with this rule, the owner or operator must develop specific plans under Rule .1629. Construction requirements for the cap system must incorporate specific requirements from Rule .1624.

16. *In the second paragraph of the 1.0 Closure section, it is stated that closure will proceed and continue in compliance with Rule .543. The correct Rule is .1627. Please correct the title also.*

Reference to Rule .543 has been corrected to reflect Rule .1627.

17. *The closure plan did not address the time requirements to begin and complete closure activities stated in Rule .1627(c)(5) and (6).*

The closure plan has been revised to include the time requirements stated in Rule .1627.

18. *The closure plan did not include all of the minimum content requirements listed in Rule .1629(b).*

The closure plan has been revised to include the requirements listed in Rule .1629(b).

19. *The closure plan did not include the design and construction requirements. The closure plan stated that "a cap system will be designed". You may submit the original closure plan for this section.*

The closure plan has been revised to include the 18 inches of earthen material with a permeability of 1×10^{-5} cm/sec and 6 inches of earthen material for the erosion layer.

20. *The post closure plan did not include all of the minimum content requirements listed in Rule .1629(c).*

The post closure plan has been revised to include the requirements listed in Rule .1629(c).
If you have any questions regarding this Permit Application, please do not hesitate to call me at (704) 338-6843.

Sincerely,

HDR Engineering, Inc. of the Carolinas

Michael D. Plummer, PE
Project Manager

MDP/elh

Enclosures

cc: Dale Wyrick, P.E., City of Greensboro (w/o enclosures)
Gail Hay, P.E., City of Greensboro (with enclosures)
Joe Readling, P.E., HDR Engineering (w/o enclosures)



Scanned By	Date	DOC ID	Permit
Backus	10/29/2010	11973	41-03



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

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

October 29, 2010

Ms. Jeryl W. Covington, P.E., Director
Environmental Services Department
P.O. Box 3136
Greensboro, NC 27402-3136

Re: Application for Continued Operation
City of Greensboro, White Street Construction and Demolition Landfill (C&DLF)
Guilford County, Permit No. 41-03, Document ID No. 11973

Dear Ms. Covington:

This letter is a revision of the letter issued on December 4, 2008, (DIN 6334) concerning the application submitted for the continued operation of the City of Greensboro, White Street C&DLF, Permit 41-03 per 15A NCAC 13B .0547.

Since then, the Corrective Action Plan and Water Quality Monitoring Plan have been approved. This letter addresses the remainder of the requirements of Rule .0547.

Operations Plan

Rule .0547(4)(b) requires the application to contain an operations plan in accordance with Rule .0542, including a five-year phase of development and a waste acceptance plan in accordance with the existing permit.

1. Section 1.0 Introduction – In the previous permit it was stated that land-clearing debris, inert debris, and asphalt were approved in addition to C&D waste. Therefore, you may state that it “has” been approved rather than it “may” be approved.
2. Fig. 2 – The sign must also list municipal waste as an excluded waste. [Rule .0542(j)(6)]
3. Drawing CD-77B – Please provide a legend to indicate what the different line styles represent.
4. Drawing CD-78B – Please provide a legend to indicate what the different line styles represent. It also does not appear to illustrate the difference between current waste placement and closed MSW as stated in Section 10.0 of the Operation Plan.
5. A cross-section drawing relating to the fill plan should also be provided.

6. Estimates of volume and weight for waste and cover and of remaining airspace should be included based on the fill plans.
7. Six inches of earthen material is required for the conditions listed in Section 12.1. Please specify this in the plan.
8. Intermediate cover must be applied on areas which will not have waste on them for three months or more rather than twelve months. Please make this correction. [Rule .0542 (f)((2)]
9. The Operation Plan should also specifically address disease vector control. [Rule .0542(h)].
10. In Section 13.3, please include the specific reporting requirements listed in Rule .1626 (4)(c) (ii) and (iii) for when methane gas levels exceed the limits.
11. Section 14 – The content of the written notification for fires and explosions is more specific in Rule .0542 than in Rule .1626. Please include the content requirements in the last paragraph.
12. In Section 18.0, NPDES stands for National Pollutant Discharge Elimination System.
13. Please update the phone number for the Winston Salem office in the Hazardous Materials Contingency Plan in Appendix C. It should be 336-771-5000.
14. Record keeping (Section 22.0) should also include any cost estimates and financial assurance documentation required under Rule .0546. [Rule .0542(n)]
15. In addition, I reviewed your permit issued May 25, 2006, for permitted solid wastes. Please note that we no longer use the term “C&D like waste” because there is not a statutory or regulatory definition. Waste from a manufacturer is industrial solid waste and must not be disposed in a C&DLF unit unless a demonstration has been made and approved by the Division. [Rule .0542(e)(4)] If you have a specific waste stream that was accepted under the term, please provide specific information on the waste and source and it may be included as an exception.

Closure and Post-Closure Plan

Rule .0547(4)(d) requires the application include a closure and post-closure plan in accordance with Rule .1627. In accordance with this rule, the owner or operator must develop specific plans under Rule .1629. Construction requirements for the cap system must incorporate specific requirements from Rule .1624.

16. In the second paragraph of the 1.0 Closure section, it is stated that closure will proceed and continue in compliance with Rule .543. The correct Rule is .1627. Please correct the title also.
17. The closure plan did not address the time requirements to begin and complete closure activities stated in Rule .1627(c)(5) and (6).

Ms. Jeryl W. Covington, P.E.

October 29, 2010

Page 3

18. The closure plan did not include all of the minimum content requirements listed in Rule .1629(b).
19. The closure plan did not include the design and construction requirements. The closure plan stated that "a cap system will be designed". You may submit the original closure plan for this section.
20. The post closure plan did not include all of the minimum content requirements listed in Rule .1629(b).

An invoice will be sent to you for the permit fee. The fee will be for a permit amendment of a C&DLF receiving 100,000 tons per year or less. Please follow the directions on the invoice for payment so that it is properly credited.

If you have any questions, please contact me at (919) 508-8520 or by email at pat.backus@ncdenr.gov.

Sincerely,



Patricia Backus, P.E.
Environmental Engineer
Solid Waste Section

cc: Ed Mussler, DWM
Hugh Jernigan, DWM

Jason Watkins, DWM
Jeff Skabo, DWM

.0542 Operational Plan

1.0 Introduction

The purpose of this section is to identify protocols for the overall operation and maintenance of the White Street Landfill Construction and Demolition Debris disposal Facility. This plan has been prepared in accordance with North Carolina Department of Environment and Natural Resources (NCDENR) rules. Detailed drawings for each phase of the landfill's development from existing conditions to final contours are presented in the Operational Drawings Section. By definition, the construction and demolition debris waste stream is originated solely from the construction, demolition, and remodeling or repair operations on pavement, buildings or other structures. In addition, the NCDENR Division of Waste Management (DWM) may have approved other inert wastes (such as land clearing debris, but not yard waste) if they can be demonstrated to be inert through the toxicity characteristic leaching procedure. The current waste screening program will continue to be utilized by the Landfill staff for determination of accurate disposal areas and the prevention of prohibited wastes as described in Rule .542 (e).

The City of Greensboro proposes to continue operation of the current construction and demolition disposal site as previously approved and permitted May 25, 2006 (Permit #41-03). The proposed disposal area continues to operate within the area of the facility known as Phase II which is a closed MSWLF unit subject to the appropriate section of the .1600 rules (Map-Drawing CD-77B). Regulatory closure of Phase II has been previously certified as closed in accordance with promulgated guidelines.

2.0 Personnel Structure

Responsibility for overall facility management and operation rests with the Solid Waste Disposal Manager.

Solid Waste Disposal Manager
(336) 373-2489
2503 White Street
Greensboro, NC 27405

This individual is designated as the contact person for regulatory compliance, and is responsible for ensuring adequate personnel and equipment in order to operate the facility in compliance with approved permit documents and the North Carolina Solid Waste Management Rules.

Landfill supervisory staff includes the Solid Waste Disposal Manager, the Landfill Supervisor, the Environmental Compliance Supervisor, the Yard Waste and Compost Supervisor, and the Scalehouse Supervisor. In addition to the supervisory staff, the landfill now operates with six full time heavy equipment operators, two full time heavy equipment mechanics, two full time maintenance workers, two full time heavy equipment operators at the yard waste and compost site, one landfill technician, and two full time scale operators.

3.0 Personnel Certifications and Training

The Solid Waste Disposal Manager maintains certifications as a Manager of Landfill Operations (MOLO), a Construction and Demolition Debris Manager, and a Transfer Station Manager as issued by the Solid Waste Association of North America (SWANA).

The Landfill Supervisor maintains certification as a MOLO.

In compliance with North Carolina GS 130-309.25, all heavy equipment operators and the landfill technician maintain certification as Landfill Operation Specialists as issued by the North Carolina Chapter of SWANA (NCSWANA). These staff members are then continuously recertified through on-site training as well as through industry and NCSWANA events. All training records are available at the scalehouse.

Personnel trained in landfill operations are on duty at all times while the facility is open for public use and at all times during active waste management operations.

4.0 Hours of Operation

The Landfill is open for operation between the hours of 7:00AM and 4:50 PM, Monday through Friday and from 7:00 AM to 1:00 PM on Saturday. The Landfill is closed on Sundays except where prior permission has been granted to receive wastes for special instances such as a natural disaster. The observed holidays are New Year's Day, Martin Luther King Jr. Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. The sign giving the hours of operation for the landfill is shown in Figure 1.



Figure 1.



Figure. 2

5.0 Equipment Requirements

The landfill will utilize three compactors of the 100,000 lb class (Cat 836) and 2 bulldozers of the 85,000 (Cat D-8). The landfill will utilize a Cat D-6 LGP bulldozer for soil placement in the routine covering of the waste. Also available for operational and compliance activities are a Cat 14-G motorgrader and 3500 gallon water truck. A full inventory list of current equipment is presented in Appendix A, Table 1.

6.0 Inclement weather Operations

During periods of heavy rainfall or other adverse weather conditions, the working face of the waste disposal area will be kept as close as possible to the landfill service roads while allowing for safe and orderly dumping from the haulers. The waste will be covered in compliance with applicable regulations.

7.0 Traffic Routing

An entrance sign is posted on the front gate stating operating hours only as well as emergency contact information (Figure 1). An additional sign is also posted immediately inside the front gate stating facility name, permit number and operating hours (Figure -2). Signs are posted at regular intervals along the landfill access roads indicating speed limit and directions to the applicable disposal area (Figure- 3).



Figure- 3

All trucks entering the landfill are required to weigh in at one of two scales at the scalehouse. The scales are operated by North Carolina Department of Agriculture Certified Weigh masters. The scales are calibrated and cleaned on a regular basis. Automobiles and pickup trucks are also required to weigh in.

The roads that allow access to the site and to monitoring locations are of all weather construction and maintained in good condition.

8.0 Litter Control

Litter control is a prime requisite in the proper operation of the **L**andfill. In order to effectively control litter and windblown debris, the working face is kept as small as possible and waste is compacted as soon as possible after unloading. Cover material is applied at least once weekly and when the working face exceeds one-half acre. Cover is available daily and will be placed at more frequent intervals if necessary to control blowing litter. Temporary litter fences will be installed downwind of and in close proximity to the working face to prevent windblown debris. The disposal area as well as the landfill property and the streets feeding into the landfill are inspected and any fugitive debris is removed on a daily basis.

9.0 Odor, Noise, and Dust Control

Odors which emanate from the management of construction and demolition debris wastes are generally limited to within a short distance of the working face. The covering of the wastes as required prevents odors from becoming a nuisance.

The access road from the scalehouse to the waste disposal unit is paved. All other service and operating roads on the operating landfill unit are graded and maintained with stone as necessary to maintain smooth, well-drained surfaces. During dry conditions, operating roads will be sprayed with water to control dust issues. The paved access roads are washed periodically to maintain an overall neat appearance of the **L**andfill.



Noise resulting from landfill equipment is limited to the period of time during operating hours. To further reduce the possibility of noise nuisance, a vegetative buffer of coniferous and deciduous trees and other vegetation is maintained between the operating areas and other areas not designated for landfill operations. All landfill equipment is equipped with mufflers or similar noise-dampening devices. The on-site landfill maintenance facility maintains all landfill equipment in top operating condition further eliminating potential noise nuisances from equipment operations.

10.0 Waste Placement

Waste will only be disposed of inside the area labeled limits of ~~the area labeled~~ C&D Landfill waste as shown on Drawing CD-77B. Drawing CD-77B also indicates the buffers as maintained. The existing contours of the current waste placement operation as well as closed MSW areas are identified on Drawing CD-78B. Waste is to be placed vertically over existing construction and debris material and closed MSW areas. The removal of solid waste from the C&D landfill is prohibited.

Solid waste unloading at the landfill is controlled to prevent disposal in locations other than those permitted. Such control is also used to confine the working face to a minimum width, facilitating a safe and efficient operation. The waste shall be managed in the smallest area (working face) feasible. Upon dumping, the waste will be spread and compacted as densely as practical into cells utilizing a minimum of four passes over the waste with a D-8 size bulldozer (not less than 85,000 lbs) or an 836 size compactor (not less than 100,000 lbs).

The fill sequence using multiple lifts allows filling to occur uniformly across the site (Drawings C-01 through C-~~05~~06 as prepared by HDR Engineering). This provides for elimination of depression areas and facilitates proper storm water movement and management. Waste disposal activities will progress in approximately 10 foot lifts across the landfill footprint as shown on ~~are currently being conducted in the northeast corner of the fill area~~ (Drawing CD-78B). ~~Once this area is complete, the waste disposal activities will turn and progress southward to the southwest corner of the footprint.~~

11.0 Asbestos

The White Street Landfill does not accept asbestos. Asbestos is listed as a banned material on the signage in ~~Fig.~~Figure 2 and staff is trained to detect and prevent disposal through the waste screening program.

12.0 Cover Requirements

A significant volume of soil is required to provide adequate cover and allow for safe and efficient waste disposal operations. In order to provide for these requirements, the landfill maintains a large permitted borrow area (Drawing CD-77B). The landfill also maintains a stockpile for soil that is brought to the landfill from outside sources (Drawing CD-77B). These outside soil sources must be approved by staff prior to being brought to the landfill.

12.1 Weekly Cover

In compliance with the latest rules as promulgated regarding management of construction and demolition debris waste, the waste will be covered with six inches of earthen material at least once per week or when the working face exceeds one-half acre. The landfill will also have available daily, if needed, cover material to apply in times of adverse weather conditions. At this time, the landfill will be utilizing earthen material from the above described soil sources to cover the waste. This material has been demonstrated to control odors, vectors, blowing litter, and fires.

12.2 Intermediate Cover

Intermediate cover consisting of a total of 12 inches of earthen material is applied to all areas which will not have any waste placement occurring for a period of ~~12~~3 months or more. Areas which have received intermediate cover are graded to facilitate proper drainage and to prevent any ponding of water. Once proper grading and drainage has been achieved, temporary vegetative grass cover will be planted. Any erosion or damage to the intermediate cover is repaired on a routine basis.

13.0 Vector Control

The City will prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment. For purposes of this item, "disease vectors" means any rodents, flies, mosquitoes, or other animals or insects, capable of transmitting disease to humans. Vectors are generally attracted by opportunities for food and shelter. C&D waste is not a food source for many vectors. Vectors seeking shelter in the waste mass can be discouraged by covering of the waste and proper grading to prevent ponding of water. If vectors become a problem, a licensed exterminator or other legal means of control shall be implemented.

~~13~~14.0 Explosive Gases Control

With the construction and demolition disposal operations occurring on top of a closed MSW facility, the landfill monitors for migration of explosive gases. A gas monitoring system has been constructed along the east side of the landfill which abuts Rankin Mill Road. All buildings and enclosed structures on the landfill are monitored as part of the routine methane monitoring program (Drawing CD-79B). Routine monitoring for gas migration is performed in accordance with ~~R~~Rule .1626 part (4)(b) on a quarterly basis to ensure that the following compliance levels for methane concentration are not exceeded: 1) the concentration of methane gas generated by the facility does not exceed 25% of the lower explosive limit (LEL) for methane gas in facility structures (1.25% methane; 2) the concentration of methane gas migrating from the landfill does not exceed the LEL for methane at the facility property boundary (5% methane).

Routine monitoring for gas migration will be performed on a quarterly basis to ensure that the following compliance levels for methane concentration are not exceeded.

- The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit (LEL) for methane in facility structures (1.25 percent methane).
- The concentration of methane gas migrating from the Landfill does not exceed the LEL for methane at the facility property boundary (5 percent methane).

The monitoring device that will be used will be a combustible gas indicator (CGI).

If concentrations are measured at greater than 25 percent of the LEL for methane in facility structures, then the landfill must immediately take all necessary steps to ensure protection of human health and shall notify the NCDENR-DWM. Within seven days of detection, the methane gas levels detected and a description of the steps taken to protect human health shall be placed in the operating record. Within 60 days of detection, a remediation plan describing the nature and extent of the problem and the proposed remedy for methane gas releases shall be placed in the operating record, the remediation plan shall be implemented, and the NCDENR-DWM shall be notified.

Additional gas probes may be installed as required. They will be installed in a similar manner as the existing gas probes.

1314.1 Perimeter Explosive Gas Monitoring Well Placement

According to Rule .1624 (4), soil, hydrogeologic and hydraulic conditions, and proximity of structures and property boundaries should be considered when locating gas monitoring wells and determining monitoring frequency.

Landfill structures consist of the Administration Building, Compliance and Compost Operations Office, Maintenance Shop, Phase II LFG blower building, equipment and maintenance shed at the Compost site, and the Operations Building. The landfill also operates a landfill gas collection system on Phase II and Phase III. The Phase II system is comprised of approximately 99 vertical extraction wells, a main header pipe, condensate traps and collection system, and a blower station as shown on the as-built survey of the landfill gas system labeled Drawing No. 1.

The Phase II area of the landfill is bounded on the north and west sides by North Buffalo Creek, on the east by Rankin Mill Road, and on the south by landfill property. North Buffalo Creek will act as an impermeable barrier between the landfill and adjoining properties on the north side of the creek. Four locations labeled Surface Monitoring Points have been identified on the southern bank of North Buffalo Creek and are monitored as part of the quarterly landfill gas monitoring program.

It will be necessary to monitor gas migration along the landfill property line at Rankin Mill Road, and the church property on Rankin Mill Road. As shown on Drawing CD-79B six wells are located along Rankin Mill Road and two wells are located near the church property. Permanently mounted gas monitors have been placed in the Administration Building, Compliance and Compost Operations Office, Maintenance Shop, Phase II LFG blower building, and the

Operations ~~Office~~Building. These structures are also monitored during the quarterly monitoring event.

1314.2 Well Construction

All of the methane monitoring wells were constructed of 2-inch PVC pipe placed in a 6-inch diameter bore hole. The screened interval ranged from 5-10 feet, terminating just above the seasonally high water table or at auger refusal. A sand filter pack was placed around the screen and ~~will~~extends 2 feet above the top of the screen. A bentonite seal was placed above the filter pack. The 2-inch casing pipe is protected by a 4-inch square steel outer casing with a locking steel cover. The outer casing is embedded in a 2'x2'x4" concrete pad.

1314.3 Methane Monitoring Program

The City of Greensboro will continue to conduct routine methane monitoring events on a quarterly basis to ensure that methane concentrations do not exceed the following compliance levels~~25% of the lower explosive limit (LEL) in facility structures or 100% of the LEL at property boundaries~~, as required in Rule 1626 (4).

- The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit (LEL) for methane in facility structures
- The concentration of methane gas migrating from the Landfill does not exceed the LEL for methane at the facility property boundary).

Methane wells and locations along North Buffalo Creek will continue to be monitored quarterly as part of the program. The monitoring device that will be used will be a combustible gas indicator (CGI).

If concentrations are measured at greater than 25 percent of the LEL for methane in facility structures, then the landfill must immediately take all necessary steps to ensure protection of human health and shall notify the NCDENR-DWM. Within seven days of detection, the methane gas levels detected and a description of the steps taken to protect human health shall be placed in the operating record. Within 60 days of detection, a remediation plan describing the nature and extent of the problem and the proposed remedy for methane gas releases shall be placed in the operating record, the remediation plan shall be implemented, and the NCDENR-DWM shall be notified.

Additional gas probes may be installed as required. They will be installed in a similar manner as the existing gas probes

1314.4 Sampling Procedures

The monitoring device that will be used during each quarterly monitoring event will be a portable combustible gas indicator. This is equipped with a flexible hose and rigid probe. Calibration of the instrument will be performed in accordance with the manufacturer's specifications.

Personnel designated to perform the monitoring program will be trained in the operation, maintenance, and calibration of the monitoring equipment. The following operating procedures and safety precautions will be adhered to by all personnel when monitoring for methane gas:

1. At least two people should be present at all times when monitoring for explosive gases.
2. At a minimum, safety glasses, gloves, work boots, will be worn. Other appropriate personal protective equipment will be worn as needed.
3. Smoking and open flames are strictly prohibited at all times during the monitoring event.
4. Fire extinguishers will be readily available when performing the monitoring event.
5. Personnel performing the monitoring event will have the City radio readily available which has direct access to emergency personnel.

1314.5 Emergency Response Plan

In the event gas levels are detected that exceed allowable limits, the emergency response plan will be as follows:

1. For 100% LEL at landfill boundaries less than 250 feet from structures:
 - a. Greensboro Fire Department and Hazardous Material Team will be notified.
 - b. Implement procedures as outlined in Rule 1624 (4).
2. For 100% LEL at landfill boundaries where the distance is greater than 250 feet from structures:
 - a. Notify the Division.
3. For structures detection levels greater than 25% LEL:
 - a. Evacuate the structure immediately.
 - b. Notify Greensboro Fire Department and Hazardous Material Team.

1415.0 Prevention of Fires

In accordance with the Clean Air Act, open burning is prohibited at this site, unless approved by the Division for the infrequent burning of land clearing debris as generated from natural disasters or emergency clean-up operations. In order to control accidental fires occurring at the site, the following preventative measures have been taken:

1. The Scale Attendants and equipment operators screen incoming waste loads for signs of hot loads such as smoke, steam, or heat being released from the waste. If evidence of a hot load is detected, the hauler is diverted to the paved road directly east of the scalehouse. This prevents the

load from entering the disposal unit and provides a safe area for emergency crews to manage the situation.

2. As described in the City of Greensboro Smoking Policy, smoking is confined to designated areas only. Smoking is not allowed within the footprint of the disposal unit, in any of the landfill equipment, or the landfill buildings. Smoking is also disallowed at the fuel dispensing station, in the vicinity of any of the landfill gas collection system structures or facilities or other fire sensitive area.
3. Motorized equipment is not parked near fuel dispensing stations longer than necessary for refueling.
4. Fuel spills are reported immediately and contained by berming the area and cleaned up immediately using an approved absorbent material.
5. Landfill equipment does not remain on the active disposal area of the site overnight.
6. Landfill equipment is washed routinely and kept free of ignitable debris.
7. Landfill equipment is maintained through a rigorous on-site routine preventative maintenance program to ensure integrity of all operating systems and fluid conveyance lines.
8. Dead trees, brush, or vegetation, adjacent to the landfill are removed immediately, and grass and weeds are routinely mowed so that brush fires cannot spread to the landfill. The landfill employs several types of large bush-hog and lawn type mowers to accomplish this task.

In the event of a fire, the Greensboro Fire Department is notified immediately. Fires and explosions that occur at the C&D Landfill will be verbally communicated to the Division within 24 hours and followed by written communication within 15 days. Written notification will include the suspected cause of fire or explosion, the response taken to manage the incident, and the action(s) to be taken to prevent the future occurrence of fire or explosion.

1516.0 Waste Screening Program

In order to assure that prohibited wastes are not entering the landfill facility, a Waste Screening Program has been implemented at the landfill. Waste received at the scalehouse and wastes taken to the working face are inspected by trained personnel.

1516.1 Waste Receiving and Inspection

All vehicles (customers and visitors) must stop at the scalehouse. All refuse containing vehicles are weighed and their load assessed. All visitors must report in the scalehouse and sign in. The scale attendant requests from the driver of the refuse containing vehicle a brief description of the waste to ensure that unacceptable wastes are not allowed in the landfill. The scale attendant then requests from the driver the following information to document all inspections:

- Date and time
- Source and type of wastes
- Hauling company, vehicle and driver identification
- Net weight of load

The landfill will notify the Division within 24 hours of attempted disposal of any waste the C&D landfill is not permitted to receive, including waste from outside its service area.

1516.2 Waste Screening

Each day, haulers are subject to being screened as part of the ~~W~~waste ~~S~~creening program. The current waste screening program will continue to be utilized by the ~~L~~andfill staff for determination of accurate disposal areas and the prevention of prohibited wastes as described in Rule .542 (e).

Waste Screening Program

1. The scale attendants utilize a computer based random number generator to determine the vehicles to be screened that day.
2. The scale attendants notify the landfill technician when the incoming loads are five loads away from the number that has been selected for screening.
3. Once the incoming load has been selected, the scale attendant informs the hauler that the load will be inspected, collects the name of the waste generator, the origin of the waste, the type of waste, and the weight of the waste. The truck is then directed to the correct disposal area.
4. Upon arrival at the disposal site, the waste hauler is directed where to deposit the load for inspection. The waste will be deposited in an area separate and away from the working face of the disposal area. The waste hauler then presents the weigh ticket to the inspector who records the ticket number, waste hauler information, date, and time.
5. The inspector will examine the load. The inspector will verify the waste complies with all items on the ~~WASTE SCREENING~~Waste Screening Inspection ~~F~~Form (Appendix B, Form 1). The inspector will also include a brief description of the waste on the form.
6. The driver must remain with the waste until is determined by the inspectors that it is acceptable for disposal. If it deemed acceptable, the driver and truck may be released. The waste material is then moved to the working face for disposal. The inspection area is cleaned and prepared to receive another load.
7. If through the normal procedures of the ~~W~~waste ~~S~~creening ~~P~~rogram or regular daily operations, a hauler has been identified as routinely bringing prohibited wastes for disposal, that hauler will be subject to daily screening in addition to the random load(s) as selected for that day.

Any prohibited wastes detected through this program are recorded on the Waste Screening ~~h~~insp~~e~~iction ~~f~~or~~m~~ and the incident is described in detail on the Report of Attempted Disposal of Hazardous or Prohibited Waste form (Appendix B, Form 2). If unacceptable wastes are found, the load will be isolated and secured. The Solid Waste Disposal Manager will then notify the Waste Management Specialist of NCDENR within 24 hours of attempted disposal.

All Waste Screening ~~h~~insp~~e~~iction ~~f~~or~~m~~s, hauler information, reports of attempted disposal of prohibited wastes, and records of disposition of rejected wastes are maintained in the operating record in the scalehouse. These records are routinely archived electronically and also stored on media and secured in the records storage room in the Operations Building 2503 –B.

~~16~~17.0 Hazardous Waste Contingency Plan

In the event that identifiable hazardous waste or waste of questionable character is discovered at the landfill, whether through the ~~W~~orst ~~S~~uccessful screening program or normal operations, the Hazardous ~~Waste~~Materials Contingency Plan (Appendix C) shall be instituted immediately.

~~17~~18.0 Access Control

Entry to the site is limited to landfill personnel, approved waste haulers, and properly identified persons whose entry is authorized by the site management and properly logged in. The City reserves the right to restrict access to the site. The landfill routinely performs public information tours and educational of the facility for civic groups and local grade schools and universities. These tours are conducted with a landfill staff member present at all times. Visitors may be allowed near the active area only when accompanied by one of the landfill staff.

As shown in ~~Figure-~~ 1, a sign is posted at the entrance of the landfill stating the facility name, permit number, operating hours, and prohibited wastes. As shown in ~~Figure-~~ 3, there is additional signage posted periodically throughout the landfill to direct traffic flow and to provide information on the location of appropriate disposal sites.

The facility is surrounded on the west, southwest, south, southeast and eastern sides by means of a chain link fence. All gates in this fence network are secured with locks and chains preventing vehicular access and illegal dumping. As stated in landfill property deeds, the northern and northwestern property line of the landfill facility is the center of North Buffalo Creek. This creek, being a natural barrier also prohibits vehicular access and illegal dumping.

~~18~~19.0 Drainage, Sedimentation and Erosion Control

The landfill facility has an extensive network of sedimentation and erosion control devices to restrict sediments being carried from the site. The landfill facility has developed a Storm Water Pollution and Prevention Plan (SWPPP, ~~Map~~-Drawing CD-80B) to further manage runoff and protect the integrity of North Buffalo Creek. Sediment basins also prevent the discharge of pollutants into the waters of the United States, including wetlands that violate any requirements of the Clean Water Act, including but not limited to ~~Non-Pollution~~National Pollutant Discharge Elimination System (NPDES) requirements. In

Areas which will not have additional waste placed on them for three months or more, but where final termination of disposal operations has not occurred, vegetative cover will be present to prevent on-site erosion. Drainage channels, benches, and other features will have appropriate control devices installed. Where needed, down slope drains will be constructed of 15” corrugated plastic pipe. All devices are routinely inspected and repairs are made as necessary and as soon as possible after detection.

No solid waste will be disposed of in standing water and surface water will be diverted away from the active face. In addition, surface water will not be impounded over or in waste.

1920.0 Water Protection

The landfill has a comprehensive surface and groundwater monitoring program (Drawing CD-81B) to provide early detection information to allow for the prevention of pollution to groundwater. This program is also comprised of a Groundwater Monitoring Plan prepared by S&ME, project number 1584-98-081 which is included herewith and made a part thereof and is included in Appendix D.

2021.0 Maintenance

2021.1 Repair of Security Control Devices

Should the routine inspection process note any deficiencies in any of the security and access control devices, maintenance and repair will be performed as necessary. Locks, vehicular gates, and fencing will be replaced if functioning improperly. Warning and information signs will be kept legible at all times and will be replaced if damaged by inclement weather or vandalism.

2021.2 Erosion Damage Repair

Should the routine inspection process note any evidence of erosion in any areas of the final cap system, maintenance, repair, and reseeded will be performed as necessary and as soon as possible after detection. Excessive slopes will be flattened if possible by adding clean fill material. If necessary, erosion control fabrics will be used to expedite re-vegetation of slopes and to secure topsoil in place.

2021.3 Correction of Settlement, Subsidence, and Displacement

Minimum slopes of 5% will be maintained after settlement in order to prevent ponding and allow for proper drainage while preventing infiltration. If vertical or horizontal displacement occurs due to differential settlement, cracks will be filled with appropriate material and final cover will be reestablished.

2021.4 Repair of Run-On/Run-Off Control Structures

All terraces, swales, and perimeter channels will be repaired, cleaned, or realigned to maintain original conditions and performance. Any culverts, pipe, or other control device that becomes damaged will be repaired or replaced.

2122.0 Benchmarks

The Landfill has a comprehensive horizontal and vertical control benchmark network (Drawing CD-82B). This network is based on NAD 83 and NAVD 88. In addition to the on-site benchmarks, the landfill facility has one NCGS control point (57W-200) on site and five points on the west, south and east sides of the facility.



Typical benchmark signage



Brass COG Monument

2223.0 Record Keeping

The City of Greensboro maintains detailed records of all activities relating to the landfill. These records are kept on site. The records, generated electronically and hard copy are maintained electronically in the Administration **b**Building and archived on readily accessible media in the records storage room in the Operations **b**Building (2503 B). The records generated, maintained and available upon request by the Division are as follows:

1. Waste Screening Inspection Forms records
2. Waste determination records
3. Amounts of waste received
4. Gas monitoring results
5. Financial assurance
6. Any demonstration, certification, finding, monitoring, testing, or analytical data required by Rules .1630 thru .1637
7. Any monitoring, testing, or analytical data as required by rule .1627.
8. Employee training records
9. Manager's certifications

10. Landfill specialist certifications
11. Reports of attempts at disposal of prohibited wastes
12. Facility inspections
13. Notation of date and time of cover placement
14. Notation of date of approval and name of Division personnel who approved burning (if applicable)
15. Approved Operation and Engineering Plan
16. Current permit to construct and permit to operate
17. Approved Monitoring Plan
18. Any cost estimates and financial assurance documentation required by Rule .0546.

.1627~~0543~~ Closure Plans

The following closure and post closure plans for the White Street Landfill Phase II have been prepared in accordance with Rule .1627 for MSW landfills as required by Rule .0547(4)(d) governing existing C&D landfill units constructed on top of closed MSW landfills.

1.0 Closure

In accordance with the Division's policy, and upon achievement of the final design and approved contours, the City of Greensboro proposes to construct the regulatory cap system over the construction and demolition debris landfill area. Prior to the placement of the final cap, the City of Greensboro will verify that fill area slopes constructed within the disposal area meet the approved slope requirements. The City will construct the areas such that post-settlement slopes of a minimum of 5 percent to a maximum of 25 percent can be achieved. Additionally, final contours will be established to enhance drainage from the construction and demolition debris fill areas to reduce the potential for infiltration into the waste mass. It is estimated that the total landfill operating volume at completion will be 2,315,800 cubic yards. The maximum area requiring a cap at any one time is approximately 64 acres.

A gas collection system will be installed under the cap to allow movement of gas generated from the completed fill area to the gas management area.

Commencement of closure activities will begin as required in accordance with ~~rule .543~~ Rule .1627 as promulgated. Once begun, closure will proceed and continue in compliance with ~~rule .543~~ Rule .1627.

A sign indicating the anticipated date of the final waste acceptance into the construction and demolition debris disposal unit as well as anticipated closure will be conspicuously posted at the facility at least 30 days in advance. The City of Greensboro may employ other avenues and devices to notify the public of the planned closure. These may include advertising in the local print media, advertising on local television, mailing to regular account customers, and notices on the City of Greensboro cable television channel. Prior to beginning closure of the unit, or portions thereof, the ~~d~~Division will be notified that intent to close has been placed in the operating record.

The closure will begin after completion of a portion of the final grades but no later than 30 days after the final receipt of waste. The design of the landfill in combination with the maintenance plan should assure a fairly uncomplicated closure period. The closure of the entire unit, or portions thereof, will be completed within 180 days unless an extension has been requested and received due to changes in the anticipated schedule.

The~~A~~ cap system ~~will be~~ designed will be ~~and~~ constructed atin accordance with Rule .1624(b)(8),(9), and (15) to minimize infiltration and erosion ~~least to the current minimum standards~~. The proposed cap system will minimize infiltration with the use of a low-permeability barrier that contains a minimum 18 inches of earthen material. The proposed permeability barrier will be less than or equal to the permeability of any base liner system or in-situ subsoils underlying the landfill, or a permeability

specified for the final cover in the effective permit, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less. Additionally, erosion of the cap system will be minimized with the placement of at least ~~18-6~~ inches of earthen material that is capable of sustaining native plant growth. This layer will assist in the reduction of root penetration and protect the low permeability barrier layer.

The construction of the regulatory cap system ~~will~~ is anticipated to utilize borrow material from on-site landfill sources that satisfy the permeability requirements. Off-site materials that satisfy the permeability requirements will supplement volume differentials. In order to assure that the material meets the established criteria, the material will be tested prior to use and after placement. ~~The low permeability layer of 18 inches will be placed in 6 inch lifts and compacted to 0-5% of optimum moisture to a 95% Standard Proctor density of greater. Soil testing will be performed on this material during placement. A minimum of one sample per 2 acres will be retrieved and analyzed for percent fines, water content, compaction and soil description. Permeability testing will be performed at a minimum of one per 5 acres. Testing requirements will be outlined in the final closure plan. Construction methods for the compacted clay liner shall be based upon the type and quality of the borrow source and shall be verified in the field by constructing test pad(s). A professional engineer licensed in the state of North Carolina shall certify that the compacted clay liner installation conforms with the plans approved by the NC DENR Division of Waste Management.~~

The material ~~for the 18 inch~~ of the erosion layer will be selected considering: soil type, nutrient levels, pH, erodibility, and other factors. Finished sideslopes shall be stable and configured to adequately control erosion and run-off. The final cover will be graded, seeded, and stabilized. All cover material will be free of putrescible material, solid waste, construction waste debris, vegetation, and rocks, frozen soil and other deleterious materials. ~~Vegetation for the 18 inch erosion layer will be selected considering: locally adapted grasses resistant to drought or temperature extremes, shallow root systems which will not disrupt the low permeability layer, ability to thrive in low nutrient soil while developing and maintaining growth and developing and sound root system to resist erosion.~~ The vegetation should be selected based upon:

- Species of grasses which are locally adapted and resistant to drought or temperature extremes;
- Having roots which will not disrupt the low permeability layer;
- Ability to thrive in low nutrient soil and develop a good stand to resist erosion;
- Survive and function with little or no maintenance.

The cap will be mowed on a routine basis to ensure growth of large, deep-rooted vegetation does not occur.

2.0 Closure Verification

The following procedures will be implemented following closure of the construction and demolition debris disposal unit in Phase II.:

1. A Construction Quality Assurance (CQA) report shall be submitted to the Division. The report shall describe the observations and tests used before, during, and upon completion of cap construction to ensure that the construction materials meet the design specifications and the construction and certification requirements. The CQA report shall contain as built drawings.
 2. A signed certification from an independent registered professional engineer verifying that closure has been completed in accordance with the closure plan will be submitted to the Division.
 3. At least one sign notifying all persons of the closing of the disposal unit and that wastes are no longer accepted there will be posted. Suitable barriers will be installed and maintained to ensure against further waste disposal.
 4. Within 90 days, a survey plat, compliant with G.S. 47-30 will be prepared by a professional land surveyor registered in the ~~S~~state of North Carolina. The plat shall be placed in the operating record of the facility.
 5. A notation shall be recorded on the facility deed (or deeds) notifying the public that the land has been used as a solid waste management disposal facility and that future use is restricted under paragraph (8) of Rule.1627. A copy of the deed notation as recorded shall be filed with the operating record.
- ~~5.6.~~ Following closure the Division will be notified that a certification, signed by the project engineer verifying that the closure has been completed in accordance with the closure plan, and has been placed in the operating record.

3.0 Post Closure Plan

This post-closure plan has been developed to outline steps to be taken to ensure environmental soundness of the landfill during its post-closure care period. The post-closure care period will last at least 30 years after closure completion and at a minimum will consist of the following:

1. Maintaining integrity and effectiveness of the final cover system.
2. Continued implementation of the approved groundwater monitoring plan through routine groundwater and surface water monitoring events.
3. Maintaining and operating a landfill gas control system and routine landfill gas monitoring events.
4. Maintaining surface run-on and run off controls.

3.1 Post Closure Monitoring Plan

The closed unit will be monitored for a minimum of 30 years. A series of inspections shall be scheduled to ensure the integrity and effectiveness of the cap system, storm water management system, groundwater monitoring system, gas collection and control system, and to protect human

health and the environment. Inspections will be conducted utilizing the Post-Closure inspection Checklist as exhibited in Appendix E. No wastes will remain exposed after the closure of the disposal unit. Access to the closed site by the public or domestic livestock will not pose a health hazard. After official closure of the disposal unit has occurred, the area will be maintained with grass vegetation.

3.2 Closed Unit Monitoring and Inspections

Routine monitoring and inspections of the closed disposal unit will occur on a quarterly and semi-annual basis. All inspections records, reports and actions taken will be filed with and made a part of the operating record of the facility.

Quarterly inspections of the closed site will include examination of the security of control devices for signs of deterioration or vandalism to ensure access to the facility is limited to authorized persons. The previous disposal area will be checked to ensure the integrity of the final cover system is maintained, erosion damage is repaired, vegetative cover persists, and that cover settlement, subsidence and displacement are minimal. Drainage ditches, channels and other control devices will be cleared and repairs made as necessary. Benchmark integrity will be noted and maintained.

Semi-annual inspections will include drainage of the final cover system, settlement, subsidence and displacement. Semi-annual inspections will also include the semi-annual groundwater and surface water monitoring event as well as the landfill gas collection and control system.

In addition to the routine inspection program, landfill staff, during the normal course of the workday, will note and report any deficiencies in the operations and effectiveness of the entire landfill facility. These deficiencies ~~are~~ will then be repaired and corrected as necessary.

3.3 Post Closure Contact

All correspondence and questions concerning the post-closure care of the unit should be directed to:

Environmental Services Director
City of Greensboro
P.O. Box 3136
Greensboro, NC 27402-3136
(336) 373-7658

3.4 Description of Use

After filling operations cease at Phase II of the White Street Sanitary Landfill and the unit is officially closed in accordance with the Plan, the area will be allowed to return to its natural vegetative state.

3.5 Engineering Certification

Based on the City's monitoring reports and an engineer's quarterly site visits, annual certifications by the engineer will be placed in the operating record. They will certify that the closure plan has been followed, noting discrepancies along with the corrective actions undertaken. At the end of the post closure period, the individual certifications will be compiled into a final document and forwarded to the Division.

4.0 Maintenance

4.1 Repair of Security Control Devices

Should the routine inspection process note any deficiencies in any of the security and access control devices, maintenance and repair will be performed as necessary. Locks, vehicular gates, and fencing will be replaced if functioning improperly. Warning and information signs will be kept legible at all times and will be replaced if damaged by inclement weather or vandalism.

4.2 Erosion Damage Repair

Should the routine inspection process note any evidence of erosion in any areas of the final cap system, maintenance, repair and reseeded will be performed as necessary and as soon as possible after detection. Excessive slopes will be flattened if possible by adding clean fill material. If necessary, erosion control fabrics will be used to expedite re-vegetation of slopes and to secure topsoil in place.

4.3 Correction of Settlement, Subsidence, and Displacement

Minimum slopes of 5% will be maintained after settlement in order to prevent ponding and allow for proper drainage while preventing infiltration. If vertical or horizontal displacement occurs due to differential settlement, cracks will be filled with appropriate material and final cover will be re-established.

4.4 Repair of Run-On/Run-Off Control Structures

All terraces, swales, and perimeter channels will be repaired, cleaned, or realigned to maintain original conditions and performance. Any culverts, pipe, or other control device that becomes damaged will be repaired or replaced.

4.5 Gas Collection System

The landfill gas collection system is anticipated to be maintained by the City or a third party. Proper operation of the systems will be verified through testing at the landfill gas monitoring wells and probes.

If methane gas recovery wells do not function as a result of irregular settlement, accumulation of liquids (condensate, leachate, water), binding or corrosion, replacement wells can be installed if necessary.

HAZARDOUS MATERIALS CONTINGENCY PLAN

This plan is developed to meet the requirements of the North Carolina Administrative Code 13B.1626 (1) (f) (iv). The White Street Sanitary Landfill does not accept any liquid or hazardous waste. Active measures are taken to insure that hazardous materials do not enter the landfill. These include signage, customer screening, radiation scanning and load inspections.

This plan establishes procedures that must be taken to minimize hazards to human health and the environment caused by sudden, non-sudden, or unplanned explosion, fire, discovery, or release of an unknown or hazardous material to the air, soil, surface water, or ground water.

1. Facility Identifications and General Information

- Owner/Operator: The City of Greensboro
Department of Environmental Services
Division of Solid Waste Management
White Street Sanitary Landfill
- Location: 2503 White Street
Greensboro, North Carolina 27405
- Mailing Address: PO Box 3136
Greensboro, NC 27402-3136
- Telephone: (336) 373-7658 (Administration Office)
(336) ~~373-7661~~ 412-3959 (Landfill Operations)
(336) ~~430-3445~~ 587-3445 (Landfill Operations Cell Phone)

a. Facility Type:

This site is a Solid Waste Management Disposal facility comprised of the following operations: (a) MSWLF disposal sites (active and closed), (b) construction and demolition debris landfill, (c) Yard Waste composting facility, (d) Heavy equipment maintenance garage, (e) Automated fuel dispensing station, (f) three administrative office buildings, (g) equipment and material storage facility, (h) two phase Landfill gas systems.

The White Street Sanitary Landfill is not a RCRA Hazardous Waste generator or disposer. Any hazardous materials encounter on this site will be as a result of an attempt to improperly dispose of materials banned from this site or materials exempt from regulation.

b. Personnel Training

Facility personnel are properly instructed in the operation and maintenance of all equipment used to prevent discharges from the site. Personnel receive training upon employment and annual refreshers. The Contingency Plan is reviewed and updated annually

2. Emergency Coordinators

~~D. Scott Bost Home Phone Cell Phone
Acting Solid Waste Disposal Manager 336 373 1051 336 430 6171
Landfill Operations Supervisor
605 Magnolia Street
Greensboro, NC 27401~~

~~Secondary Emergency Coordinators~~

~~Rob Rash
Yard Waste Supervisor (336) 442-4776~~

~~Lewis Walker Cell Phone
Environmental Compliance Specialist (336) 383-6534
Dewayne Wheeler Cell Phone
Landfill Environmental Compliance 336 383 6534~~

~~Greg Thomasson 336 430 6546
Technical and Planning Support Manager~~

<u>Primary Emergency Coordinator</u>		<u>Business Phone</u>	<u>Cellular</u>
<u>Solid Waste Disposal Manager 814 Olive St Greensboro, NC 27401</u>		<u>(336) 373-7656</u>	

<u>Secondary Emergency Coordinators</u>		<u>Business Phone</u>	<u>Cellular</u>
<u>Operations Supervisor 711 N. Church Street Greensboro, NC 27401</u>		<u>(336) 412-3959</u>	<u>(336) 587-3445</u>
<u>Environmental Compliance Specialist 2310 1D Bellemeade St. High Point, NC 27263</u>		<u>(336) 373-7662</u>	<u>(336) 254-8096</u>
<u>Composting Facility Supervisor 5594 Wild Turkey Road Whitsett, NC 27377</u>		<u>(336) 373-7659</u>	<u>(336) 442-4776</u>

3. Emergency Phone Numbers

~~Fire and/or Hazmat 911 or 373-2222~~

~~Police 911 or 373-2222~~

~~Emergency Medical Service 911~~

~~Emergency Management (Greensboro/Guilford Co.) 336-373-2278~~

~~Emergency Management Operations (800) 858-0368
NCDENR~~

~~Division of Solid Waste Management 336-771-4631
NCDENR – Winston-Salem 336-771-5000~~

~~National Response Center (800) 424-8802~~

<u>Fire and/or Hazmat</u>	<u>911 or 373-2222</u>
<u>Police</u>	<u>911 or 373-2222</u>
<u>Emergency Medical Service</u>	<u>911</u>
<u>Emergency Management (Greensboro/Guilford Co.)</u>	<u>336-373-2278 or 336-574-4082</u>
<u>Emergency Management Operations (NCDENR)</u>	<u>(800) 858-0368</u>
<u>NCDENR DWM (Winston-Salem Regional Office)</u>	<u>336-771-5000</u>
<u>NC Department of Labor – OSHA</u>	<u>(919) 779-8560 or 1-800-625-2267</u>
<u>CHEMTREC</u>	<u>(800) 262-8200</u>
<u>National Response Center</u>	<u>(800) 424-8802 or 202-267-2675</u>
<u>Medical Services (City of Greensboro)</u>	<u>336-373-2412</u>
<u>Moses Cone Hospital (Emergency Department)</u>	<u>336-832-8040</u>

4. Emergency Response Procedures

In the event that hazardous or suspicious materials are detected at the landfill, the following steps will be taken:

NOTIFICATION:

The individual discovering the situation will immediately notify the Administrative Building. The operator receiving the call will immediately notify the Emergency Coordinator.

The **e**Emergency Coordinator shall assess the situation and take action as necessary. In the event of an actual emergency situation, the Emergency Coordinator must immediately take the following steps:

1. Notify all landfill personnel.

2. Evacuate personnel and customers to a safe location, as appropriate.
3. Require transporter to remain at facility, as appropriate.
4. Implement the appropriate action plan (see appendix).
5. Notify Greensboro Fire Department ~~and/or~~ Hazmat Team if appropriate.
6. ~~As soon as possible, n~~Notify NCDENR ~~Division of Solid Waste Management~~DWM, Solid Waste Section.
7. If the Emergency Coordinator has determined that the facility has had a release, fire or explosion that could threaten human health, or the environment, outside the facility, then the NCDENR Emergency Management Center (800-858-0368) and the National Response Center (800-424-8802) must be notified and the report ~~shall~~should include the following information ~~as follows~~:
 - a. Name and telephone number of reporter
 - b. Name and address of facility
 - c. Time and type of incident (release, fire, etc.)
 - d. Name and quantity of material involved
 - e. The extent of injuries, if any
 - f. Possible hazards to human health, or the environment, outside the facility
 - g. Corrective actions taken or planned

5. Follow-up

The Emergency Coordinator will ensure that, after a hazardous materials emergency has occurred, all recovered waste, contaminated soil and water will be disposed of in accordance with EPA guidelines.

The Emergency Coordinator will see that all materials used in the containment or cleanup are replaced in a timely manner.

The Emergency Coordinator will also ensure that an investigation be conducted to determine the cause of the incident and the steps will be taken to prevent its reoccurrence.

~~Within five days of the incident, the Emergency Coordinator must submit a written report to the Division of Waste Management (Appendix B, Form 2)~~

The Emergency Coordinator shall notify NCDENR within 24 hours of an attempted disposal of any waste the landfill is not permitted to receive, including waste from outside the area the landfill is permitted to serve. Within five days of the incident, the Emergency Coordinator must submit a written report to the NCDENR, DWM, Solid Waste Section. The report must include the following:

- a. The name, address, and telephone number of the facility
- b. The name, address and telephone number of the transporter
- c. The name address and telephone number of the waste generator
- d. When the incident took place

- e. Who was responsible for responding the incident (Hazmat Team, Environmental Clean-up contractor, etc.)
- f. The response actions taken
- g. The extent of human injuries caused by the incident
- h. An assessment of harm to both human health and environment
- i. The amount of materials recovered and disposed of the incident
- j. Additionally, the report should contain documentation of calls of notification to the state or EPA as appropriate.
- k. Note preventative measures, if any, and historical incidents at the site.

6. Appendix

Hazardous or Suspect Materials Action Plan

1. ~~Then~~†The employee ~~that~~who discovers the hazardous or suspect waste shall see that all personnel, customers and visitors are evacuated a safe distance upwind from the affected area.
2. The employee will then notify the Emergency Coordinator. The Emergency Coordinator will notify the emergency team.
3. The Emergency Coordinator shall assess the situation and determine if an emergency exists and then select the appropriate action.
4. The transporter of the material will be instructed to remain on the landfill ~~facility~~.
5. If the Emergency Coordinator determines that an ~~actual~~emergency ~~situation~~ exists, the Greensboro Police/Fire communications shall be notified and request a response from the Hazmat Team.
6. Lead operators will be responsible for a roll call in their area, as well as accounting for customers and visitors. The lead operators will report personnel status to the Landfill Supervisor immediately. If anyone is injured and unable to evacuate him or herself from the hazard area, this shall be reported immediately. In order to prevent additional casualties, rescue of any injured persons from the affected area will be the responsibility of Fire and/or EMS personnel and will not be attempted by landfill personnel.
7. Due to the landfill waste disposal activities being considered an essential and critical function of the City of Greensboro, should a spill or release of material occur, interrupting the normal operation of the landfill disposal activities, a secondary disposal area will be opened as soon as possible to allow disposal operations to continue. Selection of an alternative disposal area will be based on permitted area available, distance from affected area, wind direction and any other factors that may influence continued safe operation.

8. Containment and clean up of hazardous materials shall be the responsibility of Greensboro Fire Department/Hazmat and the owner of the material. Landfill personnel are not trained to attempt containment or cleanup of hazardous materials.

Radiation Emergency Action Plan

1. If the radiation detectors located on either Scale 1 or Scale 2 goes to alarm mode (>1000 cpm) the scale operator will instruct the driver to turn off all unnecessary electrical components on his vehicle. If the detector continues to alarm, the driver will be instructed to move his vehicle to the paved road leading to the Operations Building. Once the driver has moved his vehicle to the road and parked it halfway between the scalehouse and the Operations building, he/she will secure the vehicle, abandon the vehicle, and report to the scalehouse.
2. The scale operator shall notify the Emergency Coordinator.
3. All personnel will be kept a safe distance from the vehicle.
4. The Emergency Coordinator will notify GFD/Hazmat (373-2222), Greensboro/Guilford County Emergency Management (373-2278), ~~NCDENR-SWM Division~~, and NCDENR Emergency Management (800-858-0368).
5. Containment, cleanup and removal of material shall be the responsibility of GFD/Hazmat and the owner of the material.

.0542 Operational Plan

1.0 Introduction

The purpose of this section is to identify protocols for the overall operation and maintenance of the White Street Landfill Construction and Demolition Debris disposal facility. This plan has been prepared in accordance with North Carolina Department of Environment and Natural Resources (NCDENR) rules. Detailed drawings for each phase of the landfill's development from existing conditions to final contours are presented in the Operational Drawings Section. By definition, the construction and demolition debris waste stream is originated solely from construction, demolition, and remodeling or repair operations on pavement, buildings or other structures. In addition, the NCDENR Division of Waste Management (DWM) has approved other inert wastes (such as land clearing debris, but not yard waste) if they can be demonstrated to be inert through the toxicity characteristic leaching procedure. The current waste screening program will continue to be utilized by the landfill staff for determination of accurate disposal areas and the prevention of prohibited wastes as described in Rule .542 (e).

The City of Greensboro proposes to continue operation of the current construction and demolition disposal site as previously approved and permitted May 25, 2006 (Permit #41-03). The proposed disposal area continues to operate within the area of the facility known as Phase II which is a closed MSWLF unit subject to the appropriate section of the .1600 rules (Drawing CD-77B). Regulatory closure of Phase II has been previously certified as closed in accordance with promulgated guidelines.

2.0 Personnel Structure

Responsibility for overall facility management and operation rests with the Solid Waste Disposal Manager.

Solid Waste Disposal Manager
(336) 373-2489
2503 White Street
Greensboro, NC 27405

This individual is designated as the contact person for regulatory compliance, and is responsible for ensuring adequate personnel and equipment in order to operate the facility in compliance with approved permit documents and the North Carolina Solid Waste Management Rules.

Landfill supervisory staff includes the Solid Waste Disposal Manager, the Landfill Supervisor, the Environmental Compliance Supervisor, the Yard Waste and Compost Supervisor, and the Scalehouse Supervisor. In addition to the supervisory staff, the landfill now operates with six full time heavy equipment operators, two full time heavy equipment mechanics, two full time maintenance workers, two full time heavy equipment operators at the yard waste and compost site, one landfill technician, and two full time scale operators.

3.0 Personnel Certifications and Training

The Solid Waste Disposal Manager maintains certifications as a Manager of Landfill Operations (MOLO), a Construction and Demolition Debris Manager, and a Transfer Station Manager as issued by the Solid Waste Association of North America (SWANA).

The Landfill Supervisor maintains certification as a MOLO.

In compliance with North Carolina GS 130-309.25, all heavy equipment operators and the landfill technician maintain certification as Landfill Operation Specialists as issued by the North Carolina Chapter of SWANA (NCSWANA). These staff members are then continuously recertified through on-site training as well as through industry and NCSWANA events. All training records are available at the scalehouse.

Personnel trained in landfill operations are on duty at all times while the facility is open for public use and at all times during active waste management operations.

4.0 Hours of Operation

The landfill is open for operation between the hours of 7:00AM and 4:50 PM, Monday through Friday and from 7:00 AM to 1:00 PM on Saturday. The landfill is closed on Sundays except where prior permission has been granted to receive wastes for special instances such as a natural disaster. The observed holidays are New Year's Day, Martin Luther King Jr. Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. The sign giving the hours of operation for the landfill is shown in Figure 1.



Figure 1.



Figure. 2

5.0 Equipment Requirements

The landfill will utilize three compactors of the 100,000 lb class (Cat 836) and 2 bulldozers of the 85,000 (Cat D-8). The landfill will utilize a Cat D-6 LGP bulldozer for soil placement in the routine covering of the waste. Also available for operational and compliance activities are a Cat 14-G motorgrader and 3500 gallon water truck. A full inventory list of current equipment is presented in Appendix A, Table 1.

6.0 Inclement weather Operations

During periods of heavy rainfall or other adverse weather conditions, the working face of the waste disposal area will be kept as close as possible to the landfill service roads while allowing for safe and orderly dumping from the haulers. The waste will be covered in compliance with applicable regulations.

7.0 Traffic Routing

An entrance sign is posted on the front gate stating operating hours only as well as emergency contact information (Figure 1). An additional sign is also posted immediately inside the front gate stating facility name, permit number and operating hours (Figure 2). Signs are posted at regular intervals along the landfill access roads indicating speed limit and directions to the applicable disposal area (Figure 3).



Figure 3

All trucks entering the landfill are required to weigh in at one of two scales at the scalehouse. The scales are operated by North Carolina Department of Agriculture Certified Weigh masters. The scales are calibrated and cleaned on a regular basis. Automobiles and pickup trucks are also required to weigh in.

The roads that allow access to the site and to monitoring locations are of all weather construction and maintained in good condition.

8.0 Litter Control

Litter control is a prime requisite in the proper operation of the landfill. In order to effectively control litter and windblown debris, the working face is kept as small as possible and waste is compacted as soon as possible after unloading. Cover material is applied at least once weekly and when the working face exceeds one-half acre. Cover is available daily and will be placed at more frequent intervals if necessary to control blowing litter. Temporary litter fences will be installed downwind of and in close proximity to the working face to prevent windblown debris. The disposal area as well as the landfill property and the streets feeding into the landfill are inspected and any fugitive debris is removed on a daily basis.

9.0 Odor, Noise, and Dust Control

Odors which emanate from the management of construction and demolition debris wastes are generally limited to within a short distance of the working face. The covering of the wastes as required prevents odors from becoming a nuisance.

The access road from the scalehouse to the waste disposal unit is paved. All other service and operating roads on the operating landfill unit are graded and maintained with stone as necessary to maintain smooth, well-drained surfaces. During dry conditions, operating roads will be sprayed with water to control dust issues. The paved access roads are washed periodically to maintain an overall neat appearance of the landfill.



Noise resulting from landfill equipment is limited to the period of time during operating hours. To further reduce the possibility of noise nuisance, a vegetative buffer of coniferous and deciduous trees and other vegetation is maintained between the operating areas and other areas not designated for landfill operations. All landfill equipment is equipped with mufflers or similar noise-dampening devices. The on-site landfill maintenance facility maintains all landfill equipment in top operating condition further eliminating potential noise nuisances from equipment operations.

10.0 Waste Placement

Waste will only be disposed of inside the area labeled limits of C&D waste as shown on Drawing CD-77B. Drawing CD-77B also indicates the buffers as maintained. The existing contours of the current waste placement operation as well as closed MSW areas are identified on Drawing CD-78B. Waste is to be placed vertically over existing construction and debris material and closed MSW areas. The removal of solid waste from the C&D landfill is prohibited.

Solid waste unloading at the landfill is controlled to prevent disposal in locations other than those permitted. Such control is also used to confine the working face to a minimum width, facilitating a safe and efficient operation. The waste shall be managed in the smallest area (working face) feasible. Upon dumping, the waste will be spread and compacted as densely as practical into cells utilizing a minimum of four passes over the waste with a D-8 size bulldozer (not less than 85,000 lbs) or an 836 size compactor (not less than 100,000 lbs).

The fill sequence using multiple lifts allows filling to occur uniformly across the site (Drawings C-01 through C-06as prepared by HDR Engineering). This provides for elimination of depression areas and facilitates proper storm water movement and management. Waste disposal activities will progress in approximately 10 foot lifts across the landfill footprint as shown on (Drawing CD-78B).

11.0 Asbestos

The White Street Landfill does not accept asbestos. Asbestos is listed as a banned material on the signage in Figure 2 and staff is trained to detect and prevent disposal through the waste screening program.

12.0 Cover Requirements

A significant volume of soil is required to provide adequate cover and allow for safe and efficient waste disposal operations. In order to provide for these requirements, the landfill maintains a large permitted borrow area (Drawing CD-77B). The landfill also maintains a stockpile for soil that is brought to the landfill from outside sources (Drawing CD-77B). These outside soil sources must be approved by staff prior to being brought to the landfill.

12.1 Weekly Cover

In compliance with the latest rules as promulgated regarding management of construction and demolition debris waste, the waste will be covered with six inches of earthen material at least

once per week or when the working face exceeds one-half acre. The landfill will also have available daily, if needed, cover material to apply in times of adverse weather conditions. At this time, the landfill will be utilizing earthen material from the above described soil sources to cover the waste. This material has been demonstrated to control odors, vectors, blowing litter, and fires.

12.2 Intermediate Cover

Intermediate cover consisting of a total of 12 inches of earthen material is applied to all areas which will not have any waste placement occurring for a period of 3 months or more. Areas which have received intermediate cover are graded to facilitate proper drainage and to prevent any ponding of water. Once proper grading and drainage has been achieved, temporary vegetative grass cover will be planted. Any erosion or damage to the intermediate cover is repaired on a routine basis.

13.0 Vector Control

The City will prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment. For purposes of this item, "disease vectors" means any rodents, flies, mosquitoes, or other animals or insects, capable of transmitting disease to humans. Vectors are generally attracted by opportunities for food and shelter. C&D waste is not a food source for many vectors. Vectors seeking shelter in the waste mass can be discouraged by covering of the waste and proper grading to prevent ponding of water. If vectors become a problem, a licensed exterminator or other legal means of control shall be implemented.

14.0 Explosive Gases Control

With the construction and demolition disposal operations occurring on top of a closed MSW facility, the landfill monitors for migration of explosive gases. A gas monitoring system has been constructed along the east side of the landfill which abuts Rankin Mill Road. All buildings and enclosed structures on the landfill are monitored as part of the routine methane monitoring program (Drawing CD-79B). Routine monitoring for gas migration is performed in accordance with Rule .1626 part (4)(b) on a quarterly basis to ensure that the following compliance levels for methane concentration are not exceeded: 1) the concentration of methane gas generated by the facility does not exceed 25% of the lower explosive limit (LEL) for methane gas in facility structures (1.25% methane; 2) the concentration of methane gas migrating from the landfill does not exceed the LEL for methane at the facility property boundary (5% methane).

Routine monitoring for gas migration will be performed on a quarterly basis to ensure that the following compliance levels for methane concentration are not exceeded.

- The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit (LEL) for methane in facility structures (1.25 percent methane).
- The concentration of methane gas migrating from the Landfill does not exceed the LEL for methane at the facility property boundary (5 percent methane).

The monitoring device that will be used will be a combustible gas indicator (CGI).

If concentrations are measured at greater than 25 percent of the LEL for methane in facility structures, then the landfill must immediately take all necessary steps to ensure protection of human health and shall notify the NCDENR-DWM. Within seven days of detection, the methane gas levels detected and a description of the steps taken to protect human health shall be placed in the operating record. Within 60 days of detection, a remediation plan describing the nature and extent of the problem and the proposed remedy for methane gas releases shall be placed in the operating record, the remediation plan shall be implemented, and the NCDENR-DWM shall be notified.

Additional gas probes may be installed as required. They will be installed in a similar manner as the existing gas probes.

14.1 Perimeter Explosive Gas Monitoring Well Placement

According to Rule .1624 (4), soil, hydrogeologic and hydraulic conditions, and proximity of structures and property boundaries should be considered when locating gas monitoring wells and determining monitoring frequency.

Landfill structures consist of the Administration Building, Compliance and Compost Operations Office, Maintenance Shop, Phase II LFG blower building, equipment and maintenance shed at the compost site, and the Operations Building. The landfill also operates a landfill gas collection system on Phase II and Phase III. The Phase II system is comprised of approximately 99 vertical extraction wells, a main header pipe, condensate traps and collection system, and a blower station as shown on the as-built survey of the landfill gas system labeled Drawing No. 1.

The Phase II area of the landfill is bounded on the north and west sides by North Buffalo Creek, on the east by Rankin Mill Road, and on the south by landfill property. North Buffalo Creek will act as an impermeable barrier between the landfill and adjoining properties on the north side of the creek. Four locations labeled Surface Monitoring Points have been identified on the southern bank of North Buffalo Creek and are monitored as part of the quarterly landfill gas monitoring program.

It will be necessary to monitor gas migration along the landfill property line at Rankin Mill Road, and the church property on Rankin Mill Road. As shown on Drawing CD-79B six wells are located along Rankin Mill Road and two wells are located near the church property. Permanently mounted gas monitors have been placed in the Administration Building, Compliance and Compost Operations Office, Maintenance Shop, Phase II LFG blower building, and the Operations Building. These structures are also monitored during the quarterly monitoring event.

14.2 Well Construction

All of the methane monitoring wells were constructed of 2-inch PVC pipe placed in a 6-inch diameter bore hole. The screened interval ranged from 5-10 feet, terminating just above the seasonally high water table or at auger refusal. A sand filter pack was placed around the screen

and extends 2 feet above the top of the screen. A bentonite seal was placed above the filter pack. The 2-inch casing pipe is protected by a 4-inch square steel outer casing with a locking steel cover. The outer casing is embedded in a 2'x2'x4" concrete pad.

14.3 Methane Monitoring Program

The City of Greensboro will continue to conduct routine methane monitoring events on a quarterly basis to ensure that methane concentrations do not exceed the following compliance levels as required in Rule .1626 (4).

- The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit (LEL) for methane in facility structures
- The concentration of methane gas migrating from the Landfill does not exceed the LEL for methane at the facility property boundary).

Methane wells and locations along North Buffalo Creek will continue to be monitored quarterly as part of the program. The monitoring device that will be used will be a combustible gas indicator (CGI).

If concentrations are measured at greater than 25 percent of the LEL for methane in facility structures, then the landfill must immediately take all necessary steps to ensure protection of human health and shall notify the NCDENR-DWM. Within seven days of detection, the methane gas levels detected and a description of the steps taken to protect human health shall be placed in the operating record. Within 60 days of detection, a remediation plan describing the nature and extent of the problem and the proposed remedy for methane gas releases shall be placed in the operating record, the remediation plan shall be implemented, and the NCDENR-DWM shall be notified.

Additional gas probes may be installed as required. They will be installed in a similar manner as the existing gas probes

14.4 Sampling Procedures

The monitoring device that will be used during each quarterly monitoring event will be a portable combustible gas indicator. This is equipped with a flexible hose and rigid probe. Calibration of the instrument will be performed in accordance with the manufacturer's specifications.

Personnel designated to perform the monitoring program will be trained in the operation, maintenance, and calibration of the monitoring equipment. The following operating procedures and safety precautions will be adhered to by all personnel when monitoring for methane gas.

1. At least two people should be present at all times when monitoring for explosive gases.
2. At a minimum, safety glasses, gloves, work boots, will be worn. Other appropriate personal protective equipment will be worn as needed.

3. Smoking and open flames are strictly prohibited at all times during the monitoring event.
4. Fire extinguishers will be readily available when performing the monitoring event.
5. Personnel performing the monitoring event will have the City radio readily available which has direct access to emergency personnel.

14.5 Emergency Response Plan

In the event gas levels are detected that exceed allowable limits, the emergency response plan will be as follows.

1. For 100% LEL at landfill boundaries less than 250 feet from structures:
 - a. Greensboro Fire Department and Hazardous Material Team will be notified.
 - b. Implement procedures as outlined in Rule .1624 (4).
2. For 100% LEL at landfill boundaries where the distance is greater than 250 feet from structures:
 - a. Notify the Division.
3. For structures detection levels greater than 25% LEL:
 - a. Evacuate the structure immediately.
 - b. Notify Greensboro Fire Department and Hazardous Material Team.

15.0 Prevention of Fires

In accordance with the Clean Air Act, open burning is prohibited at this site, unless approved by the Division for the infrequent burning of land clearing debris as generated from natural disasters or emergency clean-up operations. In order to control accidental fires occurring at the site, the following preventative measures have been taken:

1. The scale attendants and equipment operators screen incoming waste loads for signs of hot loads such as smoke, steam, or heat being released from the waste. If evidence of a hot load is detected, the hauler is diverted to the paved road directly east of the scalehouse. This prevents the load from entering the disposal unit and provides a safe area for emergency crews to manage the situation.
2. As described in the City of Greensboro Smoking Policy, smoking is confined to designated areas only. Smoking is not allowed within the footprint of the disposal unit, in any of the landfill equipment, or the landfill buildings. Smoking is also disallowed at the fuel dispensing station, in the vicinity of any of the landfill gas collection system structures or facilities or other fire sensitive area.

3. Motorized equipment is not parked near fuel dispensing stations longer than necessary for refueling.
4. Fuel spills are reported immediately and contained by berming the area and cleaned up immediately using an approved absorbent material.
5. Landfill equipment does not remain on the active disposal area of the site overnight.
6. Landfill equipment is washed routinely and kept free of ignitable debris.
7. Landfill equipment is maintained through a rigorous on-site routine preventative maintenance program to ensure integrity of all operating systems and fluid conveyance lines.
8. Dead trees, brush, or vegetation, adjacent to the landfill are removed immediately, and grass and weeds are routinely mowed so that brush fires cannot spread to the landfill. The landfill employs several types of large bush-hog and lawn type mowers to accomplish this task.

In the event of a fire, the Greensboro Fire Department is notified immediately. Fires and explosions that occur at the C&D Landfill will be verbally communicated to the Division within 24 hours and followed by written communication within 15 days. Written notification will include the suspected cause of fire or explosion, the response taken to manage the incident, and the action(s) to be taken to prevent the future occurrence of fire or explosion.

16.0 Waste Screening Program

In order to assure that prohibited wastes are not entering the landfill facility, a Waste Screening Program has been implemented at the landfill. Waste received at the scalehouse and wastes taken to the working face are inspected by trained personnel.

16.1 Waste Receiving and Inspection

All vehicles (customers and visitors) must stop at the scalehouse. All refuse containing vehicles are weighed and their load assessed. All visitors must report in the scalehouse and sign in. The scale attendant requests from the driver of the refuse containing vehicle a brief description of the waste to ensure that unacceptable wastes are not allowed in the landfill. The scale attendant then requests from the driver the following information to document all inspections:

- Date and time
- Source and type of wastes
- Hauling company, vehicle and driver identification
- Net weight of load

The landfill will notify the Division within 24 hours of attempted disposal of any waste the C&D landfill is not permitted to receive, including waste from outside its service area.

16.2 Waste Screening

Each day, haulers are subject to being screened as part of the waste screening program. The current waste screening program will continue to be utilized by the landfill staff for determination of accurate disposal areas and the prevention of prohibited wastes as described in Rule .542 (e).

Waste Screening Program

1. The scale attendants utilize a computer based random number generator to determine the vehicles to be screened that day.
2. The scale attendants notify the landfill technician when the incoming loads are five loads away from the number that has been selected for screening.
3. Once the incoming load has been selected, the scale attendant informs the hauler that the load will be inspected, collects the name of the waste generator, the origin of the waste, the type of waste, and the weight of the waste. The truck is then directed to the correct disposal area.
4. Upon arrival at the disposal site, the waste hauler is directed where to deposit the load for inspection. The waste will be deposited in an area separate and away from the working face of the disposal area. The waste hauler then presents the weigh ticket to the inspector who records the ticket number, waste hauler information, date, and time.
5. The inspector will examine the load. The inspector will verify the waste complies with all items on the Waste Screening Inspection Form (Appendix B, Form 1). The inspector will also include a brief description of the waste on the form.
6. The driver must remain with the waste until it is determined by the inspectors that it is acceptable for disposal. If it is deemed acceptable, the driver and truck may be released. The waste material is then moved to the working face for disposal. The inspection area is cleaned and prepared to receive another load.
7. If through the normal procedures of the waste screening program or regular daily operations, a hauler has been identified as routinely bringing prohibited wastes for disposal, that hauler will be subject to daily screening in addition to the random load(s) as selected for that day.

Any prohibited wastes detected through this program are recorded on the Waste Screening Inspection Form and the incident is described in detail on the Report of Attempted Disposal of Hazardous or Prohibited Waste form (Appendix B, Form 2). If unacceptable wastes are found, the load will be isolated and secured. The Solid Waste Disposal Manager will then notify the Waste Management Specialist of NCDENR within 24 hours of attempted disposal.

All Waste Screening Inspection Forms, hauler information, reports of attempted disposal of prohibited wastes, and records of disposition of rejected wastes are maintained in the operating record in the scalehouse. These records are routinely archived electronically and also stored on media and secured in the records storage room in the Operations Building 2503 –B.

17.0 Hazardous Waste Contingency Plan

In the event that identifiable hazardous waste or waste of questionable character is discovered at the landfill, whether through the waste screening program or normal operations, the Hazardous Materials Contingency Plan (Appendix C) shall be instituted immediately.

18.0 Access Control

Entry to the site is limited to landfill personnel, approved waste haulers, and properly identified persons whose entry is authorized by the site management and properly logged in. The City reserves the right to restrict access to the site. The landfill routinely performs public information tours and educational of the facility for civic groups and local grade schools and universities. These tours are conducted with a landfill staff member present at all times. Visitors may be allowed near the active area only when accompanied by one of the landfill staff.

As shown in Figure 1, a sign is posted at the entrance of the landfill stating the facility name, permit number, operating hours, and prohibited wastes. As shown in Figure 3, there is additional signage posted periodically throughout the landfill to direct traffic flow and to provide information on the location of appropriate disposal sites.

The facility is surrounded on the west, southwest, south, southeast and eastern sides by means of a chain link fence. All gates in this fence network are secured with locks and chains preventing vehicular access and illegal dumping. As stated in landfill property deeds, the northern and northwestern property line of the landfill facility is the center of North Buffalo Creek. This creek, being a natural barrier also prohibits vehicular access and illegal dumping.

19.0 Drainage, Sedimentation and Erosion Control

The landfill facility has an extensive network of sedimentation and erosion control devices to restrict sediments being carried from the site. The landfill facility has developed a Storm Water Pollution and Prevention Plan (SWPPP, Drawing CD-80B) to further manage runoff and protect the integrity of North Buffalo Creek. Sediment basins also prevent the discharge of pollutants into the waters of the United States, including wetlands that violate any requirements of the Clean Water Act, including but not limited to National Pollutant Discharge Elimination System (NPDES) requirements. In areas which will not have additional waste placed on them for three months or more, but where final termination of disposal operations has not occurred, vegetative cover will be present to prevent on-site erosion. Drainage channels, benches, and other features will have appropriate control devices installed. Where needed, down slope drains will be constructed of 15" corrugated plastic pipe. All devices are routinely inspected and repairs are made as necessary and as soon as possible after detection.

No solid waste will be disposed of in standing water and surface water will be diverted away from the active face. In addition, surface water will not be impounded over or in waste.**20.0 Water Protection**

The landfill has a comprehensive surface and groundwater monitoring program (Drawing CD-81B) to provide early detection information to allow for the prevention of pollution to groundwater. This program is also comprised of a Groundwater Monitoring Plan prepared by S&ME, project number 1584-98-081 which is included herewith and made a part thereof and is included in Appendix D.

21.0 Maintenance

21.1 Repair of Security Control Devices

Should the routine inspection process note any deficiencies in any of the security and access control devices, maintenance and repair will be performed as necessary. Locks, vehicular gates, and fencing will be replaced if functioning improperly. Warning and information signs will be kept legible at all times and will be replaced if damaged by inclement weather or vandalism.

21.2 Erosion Damage Repair

Should the routine inspection process note any evidence of erosion in any areas of the final cap system, maintenance, repair, and reseeded will be performed as necessary and as soon as possible after detection. Excessive slopes will be flattened if possible by adding clean fill material. If necessary, erosion control fabrics will be used to expedite re-vegetation of slopes and to secure topsoil in place.

21.3 Correction of Settlement, Subsidence, and Displacement

Minimum slopes of 5% will be maintained after settlement in order to prevent ponding and allow for proper drainage while preventing infiltration. If vertical or horizontal displacement occurs due to differential settlement, cracks will be filled with appropriate material and final cover will be reestablished.

21.4 Repair of Run-On/Run-Off Control Structures

All terraces, swales, and perimeter channels will be repaired, cleaned, or realigned to maintain original conditions and performance. Any culverts, pipe, or other control device that becomes damaged will be repaired or replaced.

22.0 Benchmarks

The landfill has a comprehensive horizontal and vertical control benchmark network (Drawing CD-82B). This network is based on NAD 83 and NAVD 88. In addition to the on-site benchmarks, the landfill facility has one NCGS control point (57W-200) on site and five points on the west, south and east sides of the facility.



Typical benchmark signage



Brass COG Monument

23.0 Record Keeping

The City of Greensboro maintains detailed records of all activities relating to the landfill. These records are kept on site. The records, generated electronically and hard copy are maintained electronically in the Administration Building and archived on readily accessible media in the records storage room in the Operations Building (2503 B). The records generated, maintained and available upon request by the Division are as follows.

1. Waste Screening Inspection Forms
2. Waste determination records
3. Amounts of waste received
4. Gas monitoring results
5. Financial assurance
6. Any demonstration, certification, finding, monitoring, testing, or analytical data required by Rules .1630 thru .1637
7. Any monitoring, testing, or analytical data as required by rule .1627.
8. Employee training records
9. Manager's certifications
10. Landfill specialist certifications
11. Reports of attempts at disposal of prohibited wastes
12. Facility inspections
13. Notation of date and time of cover placement

14. Notation of date of approval and name of Division personnel who approved burning (if applicable)
15. Approved Operation and Engineering Plan
16. Current permit to construct and permit to operate
17. Approved Monitoring Plan
18. Any cost estimates and financial assurance documentation required by Rule .0546.

.1627 Closure Plans

The following closure and post closure plans for the White Street Landfill Phase II have been prepared in accordance with Rule .1627 for MSW landfills as required by Rule .0547(4)(d) governing existing C&D landfill units constructed on top of closed MSW landfills.

1.0 Closure

In accordance with the Division's policy, and upon achievement of the final design and approved contours, the City of Greensboro proposes to construct the regulatory cap system over the construction and demolition debris landfill area. Prior to the placement of the final cap, the City of Greensboro will verify that fill area slopes constructed within the disposal area meet the approved slope requirements. The City will construct the areas such that post-settlement slopes of a minimum of 5 percent to a maximum of 25 percent can be achieved. Additionally, final contours will be established to enhance drainage from the construction and demolition debris fill areas to reduce the potential for infiltration into the waste mass. It is estimated that the total landfill operating volume at completion will be 2,315,800 cubic yards. The maximum area requiring a cap at any one time is approximately 64 acres.

A gas collection system will be installed under the cap to allow movement of gas generated from the completed fill area to the gas management area.

Commencement of closure activities will begin as required in accordance with Rule .1627 as promulgated. Once begun, closure will proceed and continue in compliance with Rule .1627.

A sign indicating the anticipated date of the final waste acceptance into the construction and demolition debris disposal unit as well as anticipated closure will be conspicuously posted at the facility at least 30 days in advance. The City of Greensboro may employ other avenues and devices to notify the public of the planned closure. These may include advertising in the local print media, advertising on local television, mailing to regular account customers, and notices on the City of Greensboro cable television channel. Prior to beginning closure of the unit, or portions thereof, the Division will be notified that intent to close has been placed in the operating record.

The closure will begin after completion of a portion of the final grades but no later than 30 days after the final receipt of waste. The design of the landfill in combination with the maintenance plan should assure a fairly uncomplicated closure period. The closure of the entire unit, or portions thereof, will be completed within 180 days unless an extension has been requested and received due to changes in the anticipated schedule.

The cap system designed will be constructed in accordance with Rule .1624(b)(8),(9), and (15) to minimize infiltration and erosion. The proposed cap system will minimize infiltration with the use of a low-permeability barrier that contains a minimum 18 inches of earthen material. The proposed permeability barrier will be less than or equal to the permeability of any base liner system or in-situ subsoils underlying the landfill, or a permeability specified for the final cover in the effective permit, or a

permeability no greater than 1×10^{-5} cm/sec, whichever is less. Additionally, erosion of the cap system will be minimized with the placement of at least 6 inches of earthen material that is capable of sustaining native plant growth. This layer will assist in the reduction of root penetration and protect the low permeability barrier layer.

The construction of the regulatory cap system is anticipated to utilize borrow material from on-site landfill sources that satisfy the permeability requirements. Off-site materials that satisfy the permeability requirements will supplement volume differentials. In order to assure that the material meets the established criteria, the material will be tested prior to use and after placement. Testing requirements will be outlined in the final closure plan. Construction methods for the compacted clay liner shall be based upon the type and quality of the borrow source and shall be verified in the field by constructing test pad(s). A professional engineer licensed in the state of North Carolina shall certify that the compacted clay liner installation conforms with the plans approved by the NC DENR Division of Waste Management.

The material of the erosion layer will be selected considering soil type, nutrient levels, pH, erodibility, and other factors. Finished sideslopes shall be stable and configured to adequately control erosion and run-off. The final cover will be graded, seeded, and stabilized. All cover material will be free of putrescible material, solid waste, construction debris, vegetation, rocks, frozen soil and other deleterious materials. The vegetation should be selected based upon:

- Species of grasses which are locally adapted and resistant to drought or temperature extremes;
- Having roots which will not disrupt the low permeability layer;
- Ability to thrive in low nutrient soil and develop a good stand to resist erosion;
- Survive and function with little or no maintenance.

The cap will be mowed on a routine basis to ensure growth of large, deep-rooted vegetation does not occur.

2.0 Closure Verification

The following procedures will be implemented following closure of the construction and demolition debris disposal unit in Phase II.

1. A Construction Quality Assurance (CQA) report shall be submitted to the Division. The report shall describe the observations and tests used before, during, and upon completion of cap construction to ensure that the construction materials meet the design specifications and the construction and certification requirements. The CQA report shall contain as built drawings.
2. A signed certification from an independent registered professional engineer verifying that closure has been completed in accordance with the closure plan will be submitted to the Division.

3. At least one sign notifying all persons of the closing of the disposal unit and that wastes are no longer accepted there will be posted. Suitable barriers will be installed and maintained to ensure against further waste disposal.
4. Within 90 days, a survey plat, compliant with G.S. 47-30 will be prepared by a professional land surveyor registered in the state of North Carolina. The plat shall be placed in the operating record of the facility.
5. A notation shall be recorded on the facility deed (or deeds) notifying the public that the land has been used as a solid waste management disposal facility and that future use is restricted under paragraph (8) of Rule.1627. A copy of the deed notation as recorded shall be filed with the operating record.
6. Following closure the Division will be notified that a certification, signed by the project engineer verifying that the closure has been completed in accordance with the closure plan, and has been placed in the operating record.

3.0 Post Closure Plan

This post-closure plan has been developed to outline steps to be taken to ensure environmental soundness of the landfill during its post-closure care period. The post-closure care period will last at least 30 years after closure completion and at a minimum will consist of the following.

1. Maintaining integrity and effectiveness of the final cover system.
2. Continued implementation of the approved groundwater monitoring plan through routine groundwater and surface water monitoring events.
3. Maintaining and operating a landfill gas control system and routine landfill gas monitoring events.
4. Maintaining surface run-on and run off controls.

3.1 Post Closure Monitoring Plan

The closed unit will be monitored for a minimum of 30 years. A series of inspections shall be scheduled to ensure the integrity and effectiveness of the cap system, storm water management system, groundwater monitoring system, gas collection and control system, and to protect human health and the environment. Inspections will be conducted utilizing the Post-Closure inspection Checklist as exhibited in Appendix E. No wastes will remain exposed after the closure of the disposal unit. Access to the closed site by the public or domestic livestock will not pose a health hazard. After official closure of the disposal unit has occurred, the area will be maintained with grass vegetation.

3.2 Closed Unit Monitoring and Inspections

Routine monitoring and inspections of the closed disposal unit will occur on a quarterly and semi-annual basis. All inspections records, reports and actions taken will be filed with and made a part of the operating record of the facility.

Quarterly inspections of the closed site will include examination of the security of control devices for signs of deterioration or vandalism to ensure access to the facility is limited to authorized persons. The previous disposal area will be checked to ensure the integrity of the final cover system is maintained, erosion damage is repaired, vegetative cover persists, and that cover settlement, subsidence and displacement are minimal. Drainage ditches, channels and other control devices will be cleared and repairs made as necessary. Benchmark integrity will be noted and maintained.

Semi-annual inspections will include drainage of the final cover system, settlement, subsidence and displacement. Semi-annual inspections will also include the semi-annual groundwater and surface water monitoring event as well as the landfill gas collection and control system.

In addition to the routine inspection program, landfill staff, during the normal course of the workday, will note and report any deficiencies in the operations and effectiveness of the entire landfill facility. These deficiencies will then be repaired and corrected as necessary.

3.3 Post Closure Contact

All correspondence and questions concerning the post-closure care of the unit should be directed to:

Environmental Services Director
City of Greensboro
P.O. Box 3136
Greensboro, NC 27402-3136
(336) 373-7658

3.4 Description of Use

After filling operations cease at Phase II of the White Street Sanitary Landfill and the unit is officially closed in accordance with the Plan, the area will be allowed to return to its natural vegetative state.

3.5 Engineering Certification

Based on the City's monitoring reports and an engineer's quarterly site visits, annual certifications by the engineer will be placed in the operating record. They will certify that the closure plan has been followed, noting discrepancies along with the corrective actions undertaken. At the end of

the post closure period, the individual certifications will be compiled into a final document and forwarded to the Division.

4.0 Maintenance

4.1 Repair of Security Control Devices

Should the routine inspection process note any deficiencies in any of the security and access control devices, maintenance and repair will be performed as necessary. Locks, vehicular gates, and fencing will be replaced if functioning improperly. Warning and information signs will be kept legible at all times and will be replaced if damaged by inclement weather or vandalism.

4.2 Erosion Damage Repair

Should the routine inspection process note any evidence of erosion in any areas of the final cap system, maintenance, repair and reseeded will be performed as necessary and as soon as possible after detection. Excessive slopes will be flattened if possible by adding clean fill material. If necessary, erosion control fabrics will be used to expedite re-vegetation of slopes and to secure topsoil in place.

4.3 Correction of Settlement, Subsidence, and Displacement

Minimum slopes of 5% will be maintained after settlement in order to prevent ponding and allow for proper drainage while preventing infiltration. If vertical or horizontal displacement occurs due to differential settlement, cracks will be filled with appropriate material and final cover will be re-established.

4.4 Repair of Run-On/Run-Off Control Structures

All terraces, swales, and perimeter channels will be repaired, cleaned, or realigned to maintain original conditions and performance. Any culverts, pipe, or other control device that becomes damaged will be repaired or replaced.

4.5 Gas Collection System

The landfill gas collection system is anticipated to be maintained by the City or a third party. Proper operation of the systems will be verified through testing at the landfill gas monitoring wells and probes.

If methane gas recovery wells do not function as a result of irregular settlement, accumulation of liquids (condensate, leachate, water), binding or corrosion, replacement wells can be installed if necessary.

HAZARDOUS MATERIALS CONTINGENCY PLAN

This plan is developed to meet the requirements of the North Carolina Administrative Code 13B.1626 (1) (f) (iv). The White Street Sanitary Landfill does not accept any liquid or hazardous waste. Active measures are taken to insure that hazardous materials do not enter the landfill. These include signage, customer screening, radiation scanning and load inspections.

This plan establishes procedures that must be taken to minimize hazards to human health and the environment caused by sudden, non-sudden, or unplanned explosion, fire, discovery, or release of an unknown or hazardous material to the air, soil, surface water, or ground water.

1. Facility Identifications and General Information

- Owner/Operator: The City of Greensboro
Department of Environmental Services
Division of Solid Waste Management
White Street Sanitary Landfill

- Location: 2503 White Street
Greensboro, North Carolina 27405

- Mailing Address: PO Box 3136
Greensboro, NC 27402-3136

- Telephone: (336) 373-7658 (Administration Office)
(336) 412-3959 (Landfill Operations)
(336) 587-3445 (Landfill Operations Cell Phone)

a. Facility Type:

This site is a Solid Waste Management Disposal facility comprised of the following operations: (a) MSWLF disposal sites (active and closed), (b) construction and demolition debris landfill, (c) Yard Waste composting facility, (d) Heavy equipment maintenance garage, (e) Automated fuel dispensing station, (f) three administrative office buildings, (g) equipment and material storage facility, (h) two phase Landfill gas systems.

The White Street Sanitary Landfill is not a RCRA Hazardous Waste generator or disposer. Any hazardous materials encounter on this site will be as a result of an attempt to improperly dispose of materials banned from this site or materials exempt from regulation.

b. Personnel Training

Facility personnel are properly instructed in the operation and maintenance of all equipment used to prevent discharges from the site. Personnel receive training upon employment and annual refreshers. The Contingency Plan is reviewed and updated annually

2. Emergency Coordinators

Primary Emergency Coordinator	Business Phone	Cellular
Solid Waste Disposal Manager 814 Olive St Greensboro, NC 27401	(336) 373-7656	

Secondary Emergency Coordinators	Business Phone	Cellular
Operations Supervisor 711 N. Church Street Greensboro, NC 27401	(336) 412-3959	(336) 587-3445
Environmental Compliance Specialist 2310 1D Bellemeade St. High Point, NC 27263	(336) 373-7662	(336) 254-8096
Composting Facility Supervisor 5594 Wild Turkey Road Whitsett, NC 27377	(336) 373-7659	(336) 442-4776

3. Emergency Phone Numbers

Fire and/or Hazmat	911 or 373-2222
Police	911 or 373-2222
Emergency Medical Service	911
Emergency Management (Greensboro/Guilford Co.)	336-373-2278 or 336-574-4082
Emergency Management Operations (NCDENR)	(800) 858-0368
NCDENR DWM (Winston-Salem Regional Office)	336-771-5000
NC Department of Labor – OSHA	(919) 779-8560 or 1-800-625-2267
CHEMTREC	(800) 262-8200
National Response Center	(800) 424-8802 or 202-267-2675
Medical Services (City of Greensboro)	336-373-2412
Moses Cone Hospital (Emergency Department)	336-832-8040

4. Emergency Response Procedures

In the event that hazardous or suspicious materials are detected at the landfill, the following steps will be taken:

NOTIFICATION:

The individual discovering the situation will immediately notify the Administrative Building. The operator receiving the call will immediately notify the Emergency Coordinator.

The Emergency Coordinator shall assess the situation and take action as necessary. In the event of an actual emergency situation, the Emergency Coordinator must immediately take the following steps:

1. Notify all landfill personnel.
2. Evacuate personnel and customers to a safe location, as appropriate.
3. Require transporter to remain at facility, as appropriate.
4. Implement the appropriate action plan (see appendix).
5. Notify Greensboro Fire Department Hazmat Team if appropriate.
6. Notify NCDENR DWM, Solid Waste Section.
7. If the Emergency Coordinator has determined that the facility has had a release, fire or explosion that could threaten human health, or the environment, outside the facility, then the NCDENR Emergency Management Center (800-858-0368) and the National Response Center (800-424-8802) must be notified and the report should include the following information:
 - a. Name and telephone number of reporter
 - b. Name and address of facility
 - c. Time and type of incident (release, fire, etc.)
 - d. Name and quantity of material involved
 - e. The extent of injuries, if any
 - f. Possible hazards to human health, or the environment, outside the facility
 - g. Corrective actions taken or planned

5. Follow-up

The Emergency Coordinator will ensure that, after a hazardous materials emergency has occurred, all recovered waste, contaminated soil and water will be disposed of in accordance with EPA guidelines.

The Emergency Coordinator will see that all materials used in the containment or cleanup are replaced in a timely manner.

The Emergency Coordinator will also ensure that an investigation be conducted to determine the cause of the incident and the steps will be taken to prevent its reoccurrence.

The Emergency Coordinator shall notify NCDENR within 24 hours of an attempted disposal of any waste the landfill is not permitted to receive, including waste from outside the area the landfill is permitted to serve. Within five days of the incident, the Emergency Coordinator must submit a written report to the NCDENR, DWM, Solid Waste Section. The report must include the following:

- a. The name, address, and telephone number of the facility
- b. The name, address and telephone number of the transporter
- c. The name address and telephone number of the waste generator
- d. When the incident took place
- e. Who was responsible for responding the incident (Hazmat Team, Environmental Clean-up contractor, etc.)
- f. The response actions taken
- g. The extent of human injuries caused by the incident
- h. An assessment of harm to both human health and environment
- i. The amount of materials recovered and disposed of the incident
- j. Additionally, the report should contain documentation of calls of notification to the state or EPA as appropriate.
- k. Note preventative measures, if any, and historical incidents at the site.

6. Appendix

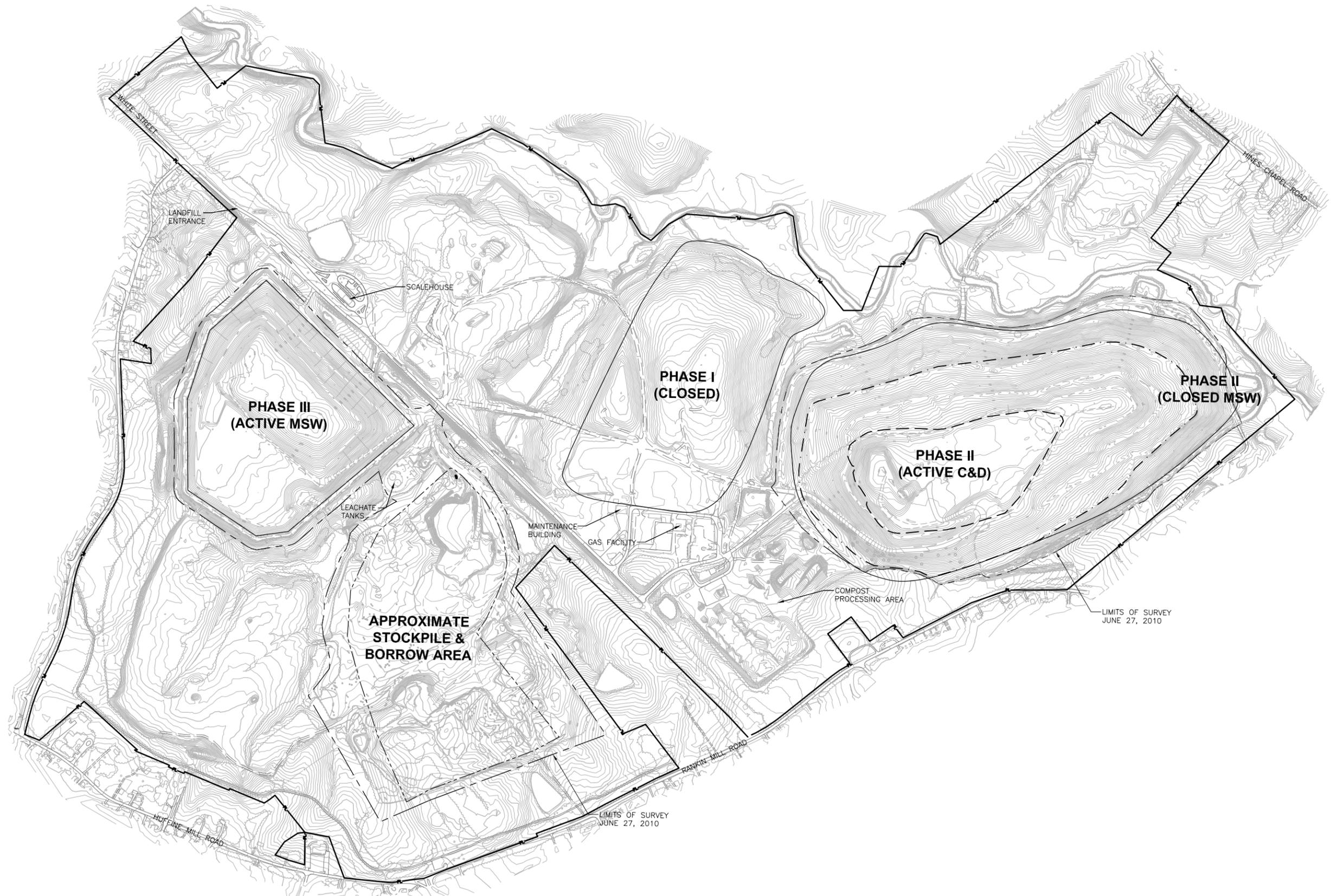
Hazardous or Suspect Materials Action Plan

1. The employee who discovers the hazardous or suspect waste shall see that all personnel, customers and visitors are evacuated a safe distance upwind from the affected area.
2. The employee will then notify the Emergency Coordinator. The Emergency Coordinator will notify the emergency team.
3. The Emergency Coordinator shall assess the situation and determine if an emergency exists and then select the appropriate action.
4. The transporter of the material will be instructed to remain on the landfill.
5. If the Emergency Coordinator determines that an emergency exists, the Greensboro Police/Fire communications shall be notified and request a response from the Hazmat Team.
6. Lead operators will be responsible for a roll call in their area, as well as accounting for customers and visitors. The lead operators will report personnel status to the Landfill Supervisor immediately. If anyone is injured and unable to evacuate him or herself from the hazard area, this shall be reported immediately. In order to prevent additional casualties, rescue of any injured persons from the affected area will be the responsibility of Fire and/or EMS personnel and will not be attempted by landfill personnel.

7. Due to the landfill waste disposal activities being considered an essential and critical function of the City of Greensboro, should a spill or release of material occur, interrupting the normal operation of the landfill disposal activities, a secondary disposal area will be opened as soon as possible to allow disposal operations to continue. Selection of an alternative disposal area will be based on permitted area available, distance from affected area, wind direction and any other factors that may influence continued safe operation.
8. Containment and clean up of hazardous materials shall be the responsibility of Greensboro Fire Department/Hazmat and the owner of the material. Landfill personnel are not trained to attempt containment or cleanup of hazardous materials.

Radiation Emergency Action Plan

1. If the radiation detectors located on either Scale 1 or Scale 2 goes to alarm mode (>1000 cpm) the scale operator will instruct the driver to turn off all unnecessary electrical components on his vehicle. If the detector continues to alarm, the driver will be instructed to move his vehicle to the paved road leading to the Operations Building. Once the driver has moved his vehicle to the road and parked it halfway between the scalehouse and the Operations building, he/she will secure the vehicle, abandon the vehicle, and report to the scalehouse.
2. The scale operator shall notify the Emergency Coordinator.
3. All personnel will be kept a safe distance from the vehicle.
4. The Emergency Coordinator will notify GFD/Hazmat (373-2222), Greensboro/Guilford County Emergency Management (373-2278), and NCDENR Emergency Management (800-858-0368).
5. Containment, cleanup and removal of material shall be the responsibility of GFD/Hazmat and the owner of the material.



GENERAL NOTES:

1. EXISTING TOPOGRAPHY TAKEN FROM SURVEY PROVIDED BY THE CITY OF GREENSBORO DATED AUGUST 26, 2009.
2. SURVEY FOR PHASE II, PHASE III AND THE BORROW AREA TAKEN FROM AERIAL SURVEY BY BRADY SURVEYING DATED JUNE 27, 2010.
3. EXTENTS OF WASTE PLACED AFTER OCTOBER 9, 1993 TAKEN FROM PHASE II TRANSITION PLAN DATED NOVEMBER 1995.

GENERAL LEGEND:

- 790 EXISTING CONTOURS
- TREELINE
- PROPERTY LINE
- STREAM OR WATER BODY
- APPROX. MSW LANDFILL LIMITS
- BORROW AREA
- LIMITS OF C&D WASTE (NOTE 3)
- APPROX. LIMITS OF CURRENT C&D WASTE PLACEMENT
- LIMITS OF SURVEY JUNE 27, 2010

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HDR Engineering, Inc.
of the Carolinas
N.C.B.E.L.S. License Number: F-9116
440 S Church Street, Suite 1000 | Charlotte, NC 28202

ISSUE	DATE	DESCRIPTION
A	03/11	ISSUED FOR NCDENR APPROVAL

PROJECT MANAGER	M.D. PLUMMER, P.E. E.L. HARTWICK, E.I.
PROJECT NUMBER	6770-109019-018

**WHITE STREET LANDFILL
PERMIT 41-03
PHASE II
PERMIT RENEWAL APPLICATION**

Greensboro North Carolina

OVERALL SITE PLAN

SCALE 1"=400'

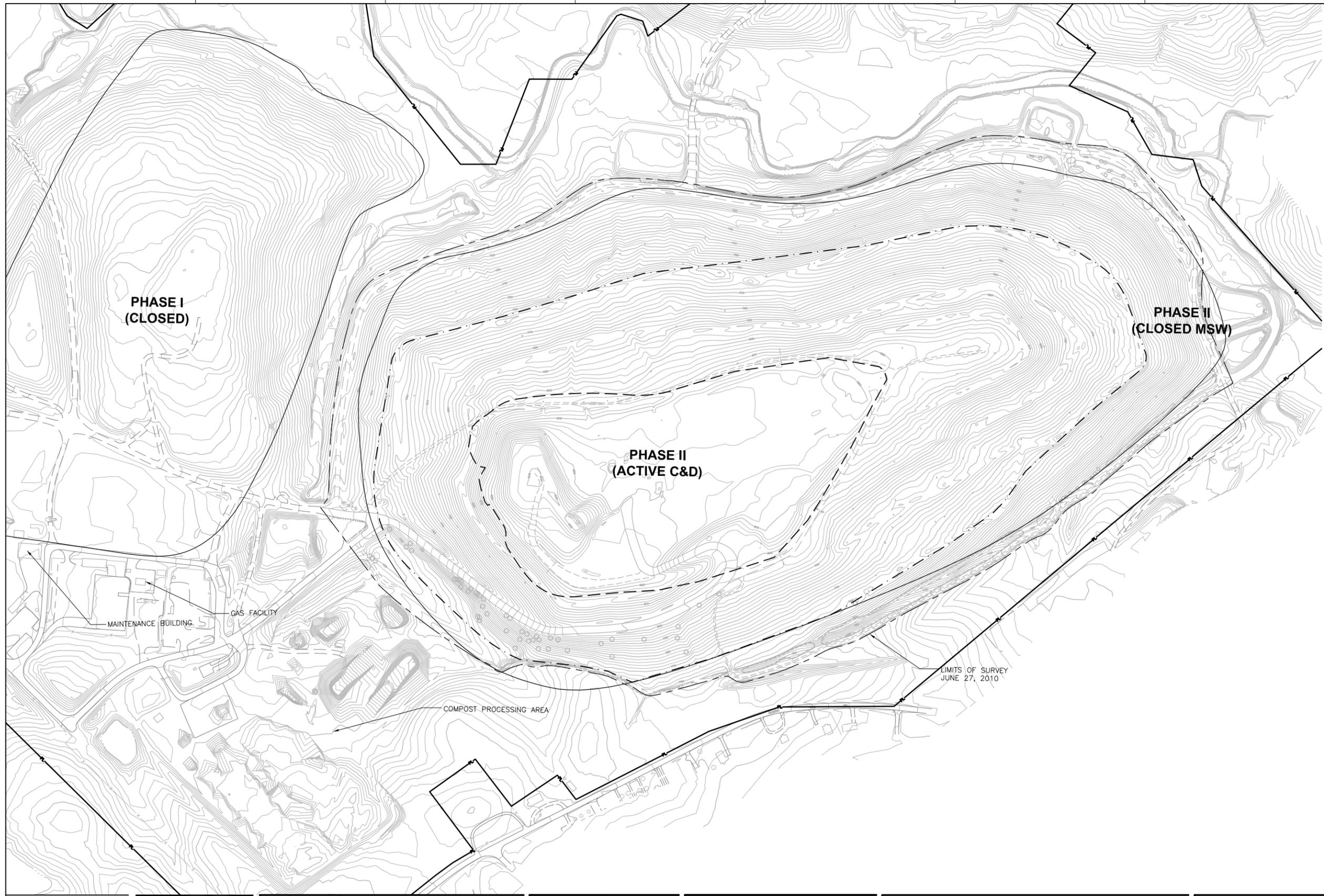
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SHEET **CD-77B**



GENERAL NOTES:

1. EXISTING TOPOGRAPHY TAKEN FROM SURVEY PROVIDED BY CITY OF GREENSBORO DATED 2009.
2. SURVEY FOR PHASE II AREA TAKEN FROM AERIAL SURVEY BY BRADY SURVEYING DATED JUNE 27, 2010.
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GENERAL LEGEND:

- 790 EXISTING CONTOURS
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ISSUE	DATE	DESCRIPTION
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PROJECT NUMBER	6770-109019-018

**WHITE STREET LANDFILL
PERMIT 41-03
PHASE II
PERMIT RENEWAL APPLICATION**

Greensboro North Carolina

EXISTING CONDITIONS

FILENAME	CD-78B.dwg	SHEET	CD-78B
SCALE	1"=200'		



GENERAL NOTES:

1. SURVEY FOR PHASE II AREA TAKEN FROM AERIAL SURVEY BY BRADY SURVEYING DATED JUNE 27, 2010.
2. EXTENTS OF WASTE PLACED AFTER OCTOBER 9, 1993 TAKEN FROM PHASE II TRANSITION PLAN DATED NOVEMBER 1995.

PHASE II REMAINING CAPACITY:

TOTAL OPERATING CAPACITY = 2,315,800 CY*
 AIRSPACE CONSUMED TO DATE = 1,197,930 CY
 OPERATING AIRSPACE REMAINING = 1,117,870 CY**

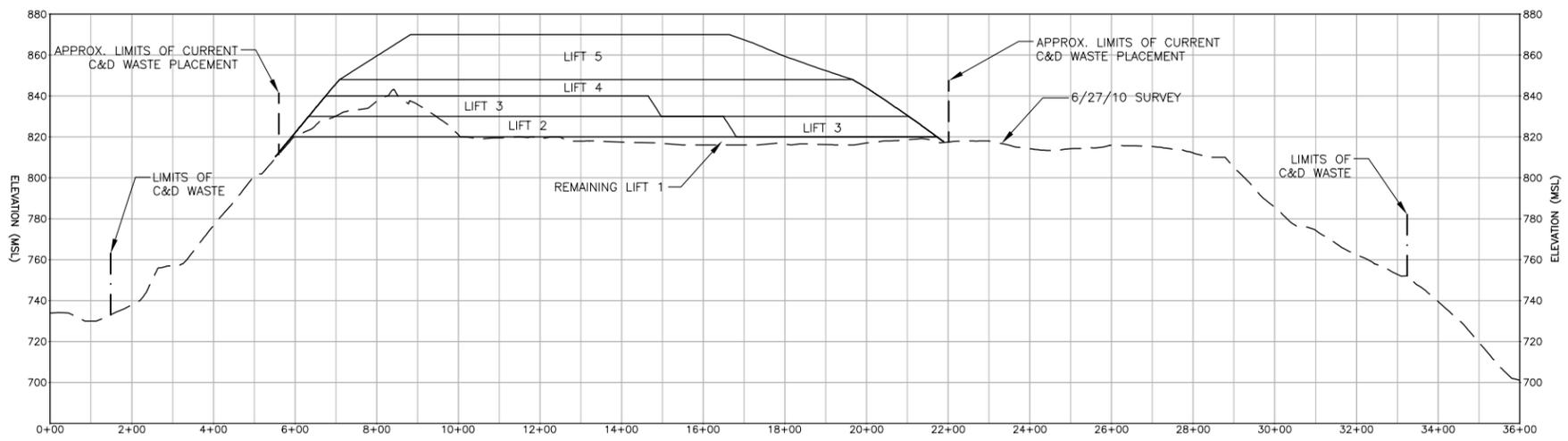
* AS REPORTED IN THE NC SOLID WASTE MANAGEMENT ANNUAL REPORT FISCAL YEAR 2008-2009.
 ** AIRSPACE REMAINING AS OF JUNE 27, 2010 SURVEY.

PHASE II OVERALL FILLING PLAN:

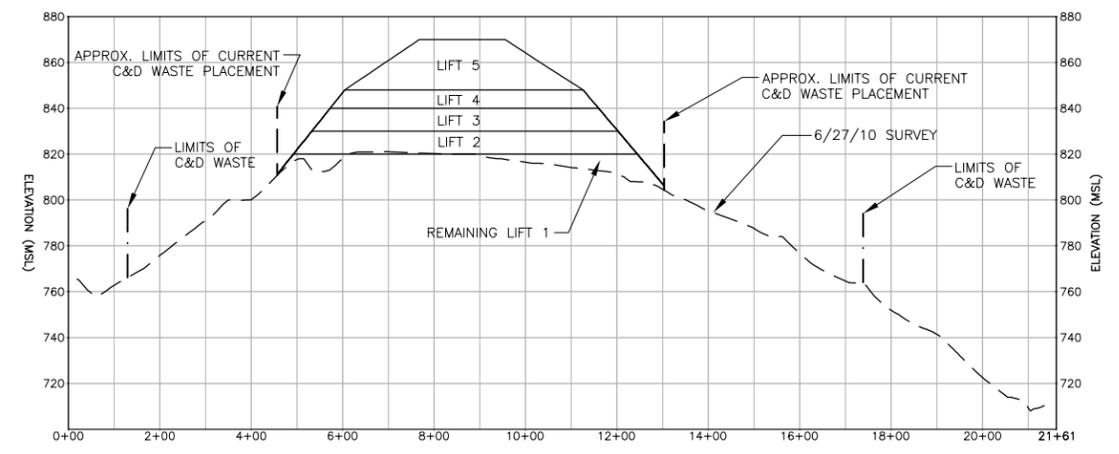
1. THE LANDFILL WILL BE CONSTRUCTED IN APPROXIMATELY 10 FOOT LIFTS.
2. EACH LIFT IS APPROXIMATELY 260,000 CY.
3. BASED ON THE TONNAGE AND VOLUME CONSUMED FROM MARCH 25, 2007 TO JUNE 27, 2010 THE WASTE DENSITY IS APPROXIMATELY 1,700 LBS/CY.

PHASE II 5-YEAR FILLING PLAN:

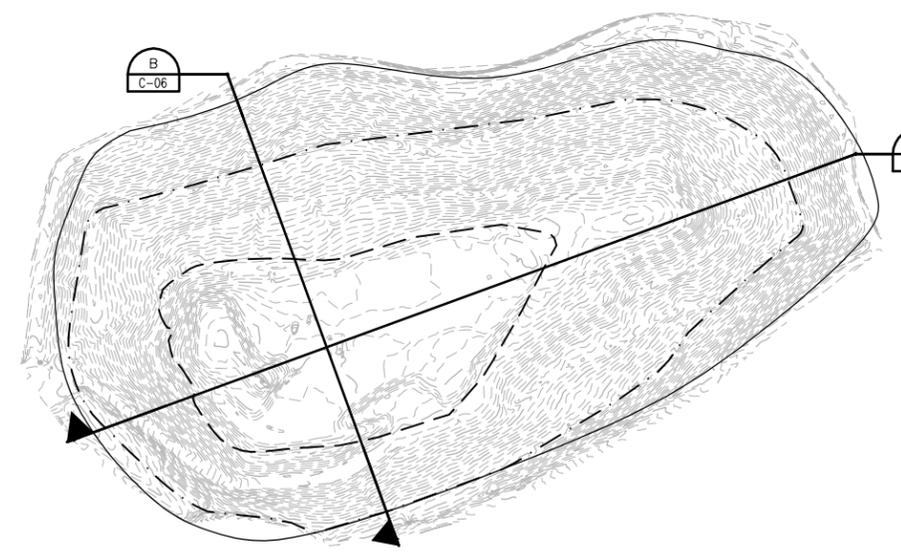
2010 WASTE ACCEPTANCE RATE = 46,614 TONS
 APPROXIMATE WASTE DENSITY OF 1,700 LBS/CY
 5-YEAR TONNAGE PROJECTION = 255,000 TONS*
 5-YEAR CAPACITY = 300,000 CY
 *ASSUMES A 3% ANNUAL GROWTH.



SOUTH - NORTH CROSS-SECTION
 HORIZONTAL 1" = 200' VERTICAL 1" = 40' A
C-06



EAST - WEST CROSS-SECTION
 HORIZONTAL 1" = 200' VERTICAL 1" = 40' B
C-06



PHASE II CROSS-SECTION LAYOUT
 HORIZONTAL 1" = 400' C
C-06

GENERAL LEGEND:

- 790 EXISTING CONTOURS
- APPROX. MSW LANDFILL LIMITS
- LIMITS OF C&D WASTE
- APPROX. LIMITS OF CURRENT C&D WASTE PLACEMENT

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ISSUE	DATE	DESCRIPTION
A	03/11	ISSUED FOR NCDENR APPROVAL

PROJECT MANAGER	M.D. PLUMMER, P.E. E.L. HARTWICK, E.I.
PROJECT NUMBER	6770-109019-018

**WHITE STREET LANDFILL
 PERMIT 41-03
 PHASE II
 PERMIT RENEWAL APPLICATION**

Greensboro North Carolina

FILL PLAN

FILENAME: C-06.dwg SHEET: **C-06**

SCALE: AS SHOWN

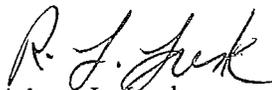
October 25, 2010

Mr. Donald Herndon
Compliance Officer
North Carolina Department of Environment
And Natural Resources – Division of Waste Management
Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646

Dear Mr. Herndon:

The City of Greensboro is in progress of completing its fiscal year ending June 30, 2010 financial statement audit and the completed audit report will not be issued until approximately November 5, 2010. As suggested in your previous correspondence, we request an extension on submitting an updated financial assurance test until November 15, 2010, to allow completion of our work. Please send us a written response to confirm your acceptance of this request.

Respectfully submitted,



Richard L. Lusk
Finance Director
City of Greensboro
Phone: 336-373-2077
Fax: 336-373-2138



CITY OF GREENSBORO

LETTER FROM CHIEF FINANCIAL OFFICER

November 1, 2010

Mr. Donald Herndon
Compliance Officer
North Carolina Department of Environment
and Natural Resources – Division of Waste Management
Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646

Dear Mr. Herndon:

I am the chief financial officer of the City of Greensboro, North Carolina. This letter is in support of this unit of local government's use of the financial test to demonstrate financial assurance, as specified in 15A NCAC 13B Rule.1628 (e)(1)(F) for the fiscal year ending June 30, 2010, including estimated closure and post-closure costs of the City's C & D Landfill, as well as certain estimated remediation costs associated with the Phase II Landfill groundwater.

This unit of local government is the owner and operator of the following facilities for which financial assurance for closure, post-closure, or corrective action is demonstrated through the financial test specified in 15A NCAC 13B Rule.1628 (e)(1)(F). The current closure and post-closure cost estimate covered by the test are shown for Permit No. 41-03, White Street Sanitary Landfill, Phase II, located at 2503 White Street, Greensboro, North Carolina, 27405. Of the 135 acres of the Phase II footprint, 101 are owned by Guilford County and leased to the City of Greensboro. We believe, however, that actually only 98 acres of the 101 acres owned by Guilford County is actually utilized as part of the landfill footprint area. The City completed final closure of Phase II during fiscal year 1998-99. Upon closure, the MSW Landfill was re-permitted for construction and demolition debris disposal above the regulatory closure cap, consisting of approximately 65 acres. As of June 30, 2010, the City of Greensboro had expended \$3,876,035 to complete the closure of the original Phase II MSW Landfill. Future closure costs of the 65 acre C&D unit are estimated at \$5,969,000. It is estimated that total Phase II post-

closure care costs, including the C&D unit will amount to \$6,265,469 (\$254,000 per year) following closure.

The current closure and post-closure cost estimate covered by the test are also shown for Phase III, Cells 1, 2 and 3, White Street Sanitary Landfill, located at 2503 White Street, Greensboro, North Carolina, 27405. The permit number for Phase III is 41-12. Phase III opened on January 1, 1998 and Cell 1 (25 acres) completed filling as of June 30, 2001. It is estimated that \$5,203,922 (2010) will be required in total for closure activities at the White Street Sanitary Landfill Phase III, Cell 1, and post-closure activities will require \$71,078 (2010) annually for 30 years after closure or \$2,132,340. The City's recorded liability for closure and post-closure care costs of Phase III Cell 1 as of June 30, 2010 was \$7,336,262 based on full capacity used.

Phase III, Cell 2 (13 acres) opened on July 1, 2001. It is estimated that \$2,706,039 (2010) will be required in total for closure activities at the White Street Sanitary Landfill Phase III, Cell 2, and post-closure activities will require \$36,961 (2010) annually for 30 years after closure or \$1,108,830. The City's recorded liability for closure and post-closure care costs of Phase III Cell 2 as of June 30, 2010 was \$3,814,869 based on 100% capacity used.

Phase III, Cell 3 (13 acres) began filling in 2005. It is estimated that \$2,706,039 (2010) will be required in total for closure activities at the White Street Sanitary Landfill Phase III, Cell 3, and post-closure activities will require \$36,961 annually for 30 years after closure or \$1,108,830. The City's recorded liability for closure and post-closure care costs of Phase III Cell 3 as of June 30, 2010 was \$1,762,086 based on 46.2% capacity used.

Costs are based on estimates provided by an independent engineering firm contracted by the City in FY2010, as attached. Resources totaling \$506,250 to fund landfill expansion, closure and post-closure care costs and certain remediation costs have been set aside in a Solid Waste Capital Reserve Fund as of June 30, 2010. In addition, available operating funds totaled \$8,944,557 as of June 30, 2010 for solid waste collection and disposal purposes, including \$1,173,887 appropriated for FY 2011 activities.

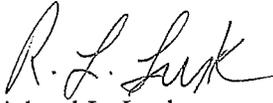
Should any corrective actions be deemed necessary, a detailed written estimate of current costs associated with the required corrective action remedies shall be submitted to the Division of Solid Waste Management. Estimated groundwater remediation costs, as provided to us by our groundwater consultants, S&ME, Inc., were included in the information submitted to NC DENR on August 31, 2007.

The current fiscal year of this unit of local government ended on June 30, 2010. The figures for the following items marked with an asterisk are derived from this local government's Annual Financial Information Report (AFIR) for the latest completed fiscal year ended June 30, 2010.

I hereby certify that the wording of this letter is identical to the wording specified in 15A NCAC 13B.1628 (e) (2) (G) as such rules were constituted on the date shown immediately below. I further certify the following: (1) that the unit of local government has not operated at a total operation fund deficit equal to five percent or more of total annual revenue in either of the past two fiscal years, (2) that the unit of local government is not in default on any outstanding general

obligation bonds or long-term obligations, and (3) does not have any outstanding general obligation bonds rated lower than Baa as issued by Moody's, BBB as issued by Standard & Poor's, BBB as issued by Fitch's, or 75 as issued by the Municipal Council.

Sincerely,

A handwritten signature in cursive script that reads "R. L. Lusk".

Richard L. Lusk
Finance Director
City of Greensboro
November 1, 2010

Attachments

Environmental Services Department
City of Greensboro



August 12, 2010

TO: Rick Lusk, Finance Director
FROM: Gail Licayan P.E., Technical and Planning Support Division Manager
SUBJECT: Subject: Financial Assurance Certificate – C&D Landfill Closure

Enclosed is the certified Cost Estimate for Closure of Phase II C&D unit of the White Street Landfill. This document can be utilized for financial assurance certification required by 15A NCAC 13B .0546. The cost estimate is based on closure of an area approximately 64± acres in size. Please note that the acreage will likely be modified as it is derived from a plan view drawing and not the actual surface area of the unit. This cost estimate is based on the unit costs presented in the estimate for partial closure of the Phase II C&D unit prepared by HDR Engineering, Inc. of the Carolinas. No solicitation for costs or investigation of resources has been completed. Therefore the estimate is contingent upon available resources (i.e. soil since roadway development also utilizes this resource) and may not reflect actual costs but is adequate for budgeting purposes.

Gail Licayan

Attachment: Cost Estimate for Closure of Phase II C&D

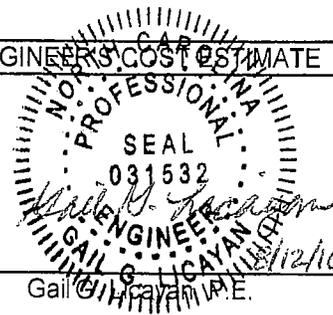
**City of Greensboro, White Street Landfill
Cost Estimate for Closure of Phase II C&D**

Item	Unit	Unit Cost	Full Closure (64± acres)	
			Quantity	Total
Acreage	AC		64	
Mobilization, CQC, Project Admin., Bonds	%	4	1	\$ 174,100
Surveying and Control	AC	\$ 3,000	64	\$ 192,000
1x10-5 Infiltration Layer (18 inches):				
Transportation (20 miles @ \$3.00/mile/load)	Load	\$ 60	15,488	\$ 929,300
Material	CY	\$ 6	154,880	\$ 929,300
Placing/Grading/Compaction	CY	\$ 6	154,880	\$ 929,300
Vegetative Support Layer (6 inches):				
Transportation (20 miles @ \$3.00/mile/load)	Load	\$ 60	5,163	\$ 309,800
Material	CY	\$ 4	51,626	\$ 180,700
Placing/Grading/Compaction	CY	\$ 4	51,626	\$ 180,700
Seeding and Mulching	AC	\$ 1,700	64	\$ 108,800
Backfill/Grading/Storm Water Drainage	LS	\$ 400,000	1	\$ 400,000
Methane Gas Control (passive extraction)	AC	\$ 6,000	64	\$ 384,000
Subtotal				\$ 4,718,000
Contingency	%	20		\$ 943,600
CQA	%	5		\$ 235,900
			2009 Total Construction	\$ 5,897,500
			2010 Inflation Factor per NCDENR	1.2%
			2010 Total Construction	\$ 5,969,000

Notes:

1. Area estimate (64± acres) based on plan view drawing, not actual surface area.
2. Estimate for full closure of Phase II (approximately 64 acres) is based on unit costs used in estimate for partial closure prepared by HDR Engineering, Inc. of the Carolinas (HDR).
3. HDR estimate based on costs bid for similar work at landfills in southeast region and assumes soil material will come from offsite sources. No actual solicitations or investigation of resources was completed.

ENGINEER'S COST ESTIMATE



Gail Gilman, P.E.

October 22, 2010

Ms. Jeryl Covington, PE
Director of Environmental Services
City of Greensboro
P.O. Box 3136
Greensboro, NC 27402-3136

Re: Revised Fiscal Year 10/11 Closure and Post Closure Estimates
White Street Landfill
City of Greensboro, NC
HDR Project No. 06770-45262-018

Dear Ms. Covington:

Enclosed is a copy of the revised certified Fiscal Year 10/11 Closure and Post Closure Estimates for Phases I, II, and III prepared by HDR Engineering, Inc. of the Carolinas (HDR) for the White Street Landfill. The engineer's estimates are based on the regulatory requirements for closure and post-closure. HDR has made edits to inflate the 2009 estimate by the 1.2% inflation value taken from the NCDENR website. The pricing for components of the estimates is based on actual bid pricing for landfills in the southeast region. No actual investigation of resources in and around the White Street Landfill has been conducted. Due to the volatility of market conditions both locally and nationally, these estimates may not reflect actual costs. However, we consider them to be reasonable and adequate for budgeting purposes.

If you should have any questions or require additional information, please feel free to contact me at (704) 338-6843.

Sincerely,



Michael D. Plummer, PE
Project Engineer

Enclosures

MDP/mdp

WHITE STREET LANDFILL
 FISCAL YEARS 2010/2011 THROUGH 2014/2015
 ESTIMATED CLOSURE AND POST-CLOSURE COSTS ⁽⁴⁾

<u>Year</u>	1 FY 10/11	2 FY 11/12	3 FY 12/13	4 FY 13/14	5 FY 14/15
<u>CAPITAL COSTS</u>					
Phase III Partial Closure Costs (21 Acres) ⁽¹⁾	\$ 4,319,000	0	0	0	0
Phase II C&D Closure Costs (38 Acres)	\$ 3,713,000	0	0	0	0
Post Closure Costs (Phase I and II) ⁽²⁾	\$ 254,000	\$ 266,700	\$ 280,035	\$ 294,037	\$ 308,739
Post Closure Costs (Phase III) ⁽³⁾	\$ 145,000	\$ 152,250	\$ 159,863	\$ 167,856	\$ 176,248
TOTAL COST	\$ 8,431,000	\$ 418,950	\$ 439,898	\$ 461,892	\$ 484,990

- (1) The value is consistent with the July 6, 2009 estimate. The remaining Phase III Area is closed outside of this timeframe.
- (2) Post Closure costs based on current costs incurred by the City.
- (3) Post Closure costs are escalated at 5% inflation.
- (4) Costs were estimated in conjunction with City staff.

ENGINEER'S COST ESTIMATE



Michael D. Plummer, PE

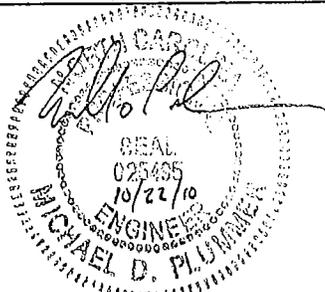
REVISED FOR FY 2010
CITY OF GREENSBORO, WHITE STREET LANDFILL, PHASE III
COST ESTIMATE FOR CLOSURE OF THE UNIT
(BASED ON 52 ACRE CLOSURE)

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
Construction:	52	Ac		
Geomembrane (40 mil LLDPE)	2,265,120	SF	\$0.50	\$1,132,600
Geonet Drainage Layer	2,265,120	SF	\$0.73	\$1,653,500
1 x 10 ⁻⁵ Infiltration Layer (18 inches):				
Transportation (20 miles @ \$3.00/mile/load)	12,590	Load	\$60	\$755,400
Material	125,900	CY	\$6.00	\$755,400
Placing/Grading/Compaction	125,900	CY	\$6.00	\$755,400
Vegetative Support Layer (24 inches):				
Transportation (20 miles @ \$3.00/mile/load)	16,780	Load	\$60	\$1,006,800
Material	167,800	CY	\$3.50	\$587,300
Placing/Grading/Compaction	167,800	CY	\$3.50	\$587,300
Seeding and Mulching	52	AC	\$1,700	\$88,400
Backfill/Grading/Drainage	1	LS	\$700,000	\$700,000
Methane Gas Control (active extraction)	20	AC	\$2,500	\$50,000
Subtotal				\$8,072,100
Contingency (20%)				\$1,614,400
Engineering Planning/Design				\$400,000
Construction Quality Assurance (CQA)	5	%	\$403,605	\$403,600
			2009 TOTAL CONSTRUCTION	\$10,490,000
			2010 Inflation Factor per NCDENR	1.2%
			2010 TOTAL CONSTRUCTION	\$10,616,000

Note:

1. The majority of the methane gas extraction system in the Phase III closure area has been completed. This item is to finalize the gas collection system.
2. These estimates are based on average costs bid for similar work at a nearby landfill.
3. This estimate assumes soil material will come from offsite sources.
4. CQA includes construction monitoring, documentation and certification services as required under NCDENR Rules 15A NCAC 13B .1621 and .1624.

ENGINEER'S COST ESTIMATE

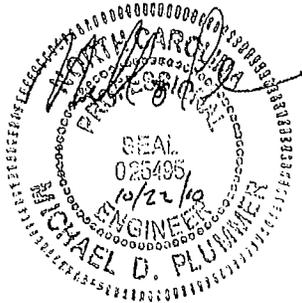


Michael D. Plummer, PE

REVISED FOR FY 2010
CITY OF GREENSBORO, WHITE STREET LANDFILL, PHASE III
ESTIMATED AVERAGE ANNUAL POST-CLOSURE COST
(BASED ON 52 ACRES)

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
Engineering Certificate	1	LS	\$17,400	\$17,400
Site Inspection and Recordkeeping:	80	HR	\$100	\$8,000
Cap Maintenance:				
Mowing	52	AC	\$100	\$5,200
Gates/Fences and Access Control	1	LS	\$2,300	\$2,300
Erosion Control	1	LS	\$5,800	\$5,800
Surface Water Control	1	LS	\$3,500	\$3,500
Seeding	4	AC	\$1,400	\$5,600
Monitoring:				
Methane Gas Monitoring and Report (quarterly)	4	3 mo.	\$5,800	\$23,200
Groundwater Sampling/Lab and Report (semiannual)	1	LS	\$35,200	\$35,200
Monitor well Maintenance	1	LS	\$1,500	\$1,500
Methane Gas System Repairs	1	LS	\$12,000	\$12,000
Subtotal				\$119,700
Contingency (20%)				\$23,940
2009 AVERAGE ANNUAL COST				\$143,640
2010 Inflation Factor per NCDENR				1.2%
2010 TOTAL CONSTRUCTION				\$145,000
Note:				
1. These estimates are for a third party and include labor.				

ENGINEER'S COST ESTIMATE

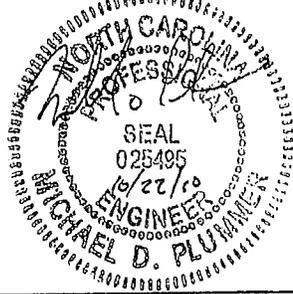


Michael D. Plummer, PE

REVISED FOR FY 2010
CITY OF GREENSBORO, WHITE STREET LANDFILL, PHASE II C&D
COST ESTIMATE FOR PARTIAL CLOSURE OF THE UNIT
(BASED ON 38 ACRE CLOSURE, TOTAL UNIT IS 65 ACRES)

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
Construction:	38	AC		
Mobilization, CQC, Project Admin., Bonds	1	LS	4.00%	\$109,900
Surveying and Control	38	AC	\$3,000	\$114,000
1 x 10 ⁻⁵ Infiltration Layer (18 inches):				
Transportation (20 miles @ \$3.00/mile/load)	9,196	Load	\$60	\$551,800
Material	91,960	CY	\$6.00	\$551,800
Placing/Grading/Compaction	91,960	CY	\$6.00	\$551,800
Vegetative Support Layer (6 inches):				
Transportation (20 miles @ \$3.00/mile/load)	3,065	Load	\$60	\$183,900
Material	30,653	CY	\$3.50	\$107,300
Placing/Grading/Compaction	30,653	CY	\$3.50	\$107,300
Seeding and Mulching	38	AC	\$1,700	\$64,600
Backfill/Grading/Stormwater Drainage	1	LS	\$400,000	\$400,000
Methane Gas Control (passive extraction)	38	AC	\$6,000	\$228,000
Subtotal				\$2,970,400
Contingency (20%)				\$594,100
CQA	5	%	\$148,520	\$148,500
2009 TOTAL CONSTRUCTION				\$3,713,000
2010 Inflation Factor per NCDENR				1.2%
2010 TOTAL CONSTRUCTION				\$3,758,000
Note: 1. These estimates are based on costs bid for similar work at a nearby landfill. 2. This estimate assumes soil material will come from offsite sources.				

ENGINEER'S COST ESTIMATE

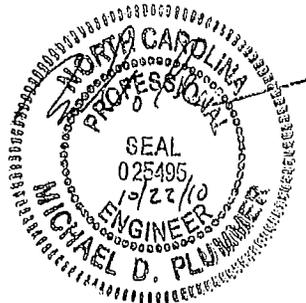


Michael D. Plummer, PE

REVISED FOR FY 2010
CITY OF GREENSBORO, WHITE STREET LANDFILL, PHASE I & II
ESTIMATED AVERAGE ANNUAL POST-CLOSURE COST
(BASED ON 220 ACRES)

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
Engineering Certificate	1	LS	\$17,400	\$17,400
Site Inspection and Recordkeeping:	160	HR	\$100	\$16,000
Cap Maintenance:				
Mowing	220	AC	\$100	\$22,000
Gates/Fences and Access Control	1	LS	\$2,300	\$2,300
Erosion Control	1	LS	\$5,800	\$5,800
Surface Water Control	1	LS	\$3,500	\$3,500
Seeding	16	AC	\$1,400	\$22,400
Monitoring:				
Methane Gas Monitoring and Report (quarterly)	4	3 mo.	\$5,800	\$23,200
Groundwater Sampling/Lab and Report (semiannual)	1	LS	\$46,800	\$46,800
Monitor well Maintenance	1	LS	\$1,500	\$1,500
Methane Gas System Repairs	1	LS	\$48,000	\$48,000
Subtotal				\$208,900
Contingency (20%)				\$41,780
			2009 AVERAGE ANNUAL COST	\$250,680
			2010 Inflation Factor per NCDENR	1.2%
			2010 TOTAL CONSTRUCTION	\$254,000
Note: These estimates are for a third party and include labor.				

ENGINEER'S COST ESTIMATE



Michael D. Plummer, PE

**CITY OF GREENSBORO, NORTH CAROLINA
BOND RATING INDICATOR OF FINANCIAL STRENGTH - FY 2010**

1. Sum of current closure and post-closure cost estimates: (a)		
(a) Phase III, Cell 1 closure		\$5,203,922
(a) Phase III, Cell 1 post-closure		2,132,340
(a) Phase III, Cell 2 closure		2,706,039
(a) Phase III, Cell 2 post-closure		1,108,830
(a) Phase III, Cell 3 closure		2,706,039
(a) Phase III, Cell 3 post-closure		1,108,830
(b) Phase II, Closure (C&D)		5,969,000
(b) Phase II, Post-closure		<u>6,265,469</u>
Total closure and post-closure costs		<u>\$27,200,469</u>

2. Current bond rating of most recent issuance and name of rating service:			
	Enterprise System Revenue	Certificates of	General Obligation
	<u>Bonds</u>	<u>Participation</u>	<u>Bonds</u>
Standard & Poor's Corp.	AAA	AA+	AAA
Moody's Investors Service	Aa1	Aa1, Aa2	Aaa
Fitch Ratings	AAA	AA+, AA	AAA

3. Date of issuance bond:	April, 2009	September, 2010	October, 2010
4. Date of maturity bond:	June, 2034	April, 2031	October, 2030

5. Assured environmental cost to demonstrate financial responsibility in the following amounts under Division rules:	
MSWLF under 15A NCAC 13B Section.1600:	<u>\$27,200,469</u>
Hazardous waste treatment, storage and disposal facilities under 15A NCAC 13B Rules .0009 and .0010:	<u>\$0</u>
Petroleum underground storage tanks under 15A NCAC 2N Sections .0100 - 0800:	<u>\$130,200</u>
Underground injection Control System facilities under 15A NCAC 2D Section .0400 and 15A NCAC 2C Section .0200:	<u>\$0</u>
PCB commercial storage facilities under 15A NCAC 20 Section .0100 and 15A NCAC 2N Section .0100:	<u>\$0</u>
Other: Groundwater remediation Phase II (b)	<u>2,670,093</u>
Total assured environmental costs:	<u>\$30,000,762</u>

6. Total Annual Revenue (AFIR Part 2): (2010 Report)	<u>\$411,769,621</u>
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7. Is line 5 divided by line 6 less than or equal to 0.43? Yes/No?	Yes
(a) Based on 2010 engineering cost estimates.	
(b) Based on 2008 engineering cost estimates	