Wilson, Donna

From: Chao, Ming-tai [ming.chao@ncdenr.gov]
Sent: Tuesday, December 01, 2009 3:13 PM
To: , Donna Wilson
Subject: FW: Johnston County Amended Design Capacity Report
Attachments: Johnston DCR narrative with attachments.pdf

Donna: I think you should be interested in knowing this updated capacity info.

Ming

-----Original Message-----
From: Matt Lamb [mailto:matt@rsgengineers.com]
Sent: Tuesday, December 01, 2009 4:10 PM
To: Matt Lamb
Cc: patrick.butler@ncmail.net; Mceachern, Charles; Booker Pullen; Chao, Ming-tai; Tim Broome; Rick Proctor; Pieter Scheer
Subject: Johnston County Amended Design Capacity Report

Gentlemen:

Attached please see the amended design capacity report for the Johnston County Landfill, showing they exceeded the 2.5 million megagram threshold with the permitting of Cell 3, Phase 4A. Please note that the previously submitted Tier 2 report shows that the landfill is well under the nonmethane organic compound (NMOC) emission rate of 50 Mg/year.

A hard copy will follow. Please contact me with any questions.

Thanks

--

Matt Lamb
*Richardson** Smith Gardner and Associates
*14 North Boylan Avenue
Raleigh, NC 27603

phone: (919) 828-0577 ext. 121
fax: (919) 828-3899
cell: (919) 801-3548

www.rsgengineers.com <http://www.rsgengineers.com>

RICHARDSON SMITH GARDNER & ASSOCIATES
ENGINEERING & GEOLOGICAL SERVICES

December 1, 2009

Attention: Patrick Butler
North Carolina DENR, Division of Air Quality
Raleigh Regional Office
3800 Barrett Drive,
Raleigh, NC 27609

RE: Amended NSPS Design Capacity Report
Johnston County Landfill (NC Solid Waste Permit No. 51-03)
Smithfield, North Carolina

Dear Mr. Butler:

Richardson Smith Gardner and Associates, Inc. (RSG) is submitting this amended Design Capacity Report (DCR) (**Attachment 1**) on behalf of Johnston County, for the Johnston County Landfill (NC Solid Waste Permit No. 51-03). The New Source Performance Standards (NSPS) for MSW Landfills (Subpart WWW)[1] requires facilities to submit amended NSPS Design Capacity Reports (§60.757(a)(3)) once the increase in capacity exceeds the 2.5 million cubic meters (m^3) and 2.5 million megagrams (Mg) thresholds.

The Johnston County Landfill (landfill) consists of six (6) phases (1-5, and 4A), as shown in **Figure 1**. An amended DCR for Phases 1-5, and Phase 4A, Cells 1&2 was submitted on November 4, 2005, which demonstrated a net waste capacity of 2,300,146 Mg, which is below the NSPS threshold of 2.5 million Mg (§60.752(a)).[2]

On September 28, 2009, a permit to operate was issued for Phase 4A, Cell 3 (Fill Sequence 1) (**Attachment 2**). The net waste capacity of this cell increases the total net capacity of the landfill to 4,193,767 m^3 and 3,054,104 Mg (**Attachment 3**). This current DCR reflects this increase in

[1] Emission Guidelines and Standards of Performance for MSW Landfills (EG & NSPS), 40 CFR Part 60, Subparts Cc and WWW, published March 12, 1996, and amended June 16, 1998, February 24, 1999, and April 10, 2000.
[2] Amended NSPS Design Capacity Report, Johnston County Landfill (NC Solid Waste Permit No. 51-03), submitted to North Carolina DENR, DAQ November 4, 2005.

capacity and is based on information contained in the Permit to Construct Application.[3] Since the net capacities of the landfill now exceed the NSPS thresholds above, the landfill is subject to the additional Subpart WWW requirements (§60.752(b)), which require the landfill to submit an initial Non-Methane Organic Compounds (NMOC) emission rate report, as well as Title V permitting requirements. A Title V permit application will be submitted by December 27, 2009, which is 90 days following issuance of the permit to operate.

A Tier 2 NMOC emission rate report[4] was submitted in June of 2009. Based on this report, NMOC emissions in 2009 are 26 Mg, and 30 Mg in 2014, assuming filling rates remain constant. Therefore no landfill gas collection/control system is required at this time.

Should you have any questions or require any additional information, please feel free to contact me at (919) 828-0577.

Sincerely

Cybele M. Brockmann

Cybele M. Brockmann
Staff Engineer

cc: Booker Pullen, NCDAQ
Ming Chao, NCDENR DWM
Tim Broome, P.E., JC
Rick Proctor, JC
File

[3] Permit to Construct Application for Johnston County MSW Landfill – Phase 4A – Cell 3, prepared for Johnston County Department of Public Works by RSG, June 2007, revised December 2008.
[4] Non-methane Organic Compound Emission Rate Report, prepared for Johnston County Department of Public Works by RSG, June 2009.

Figure 1

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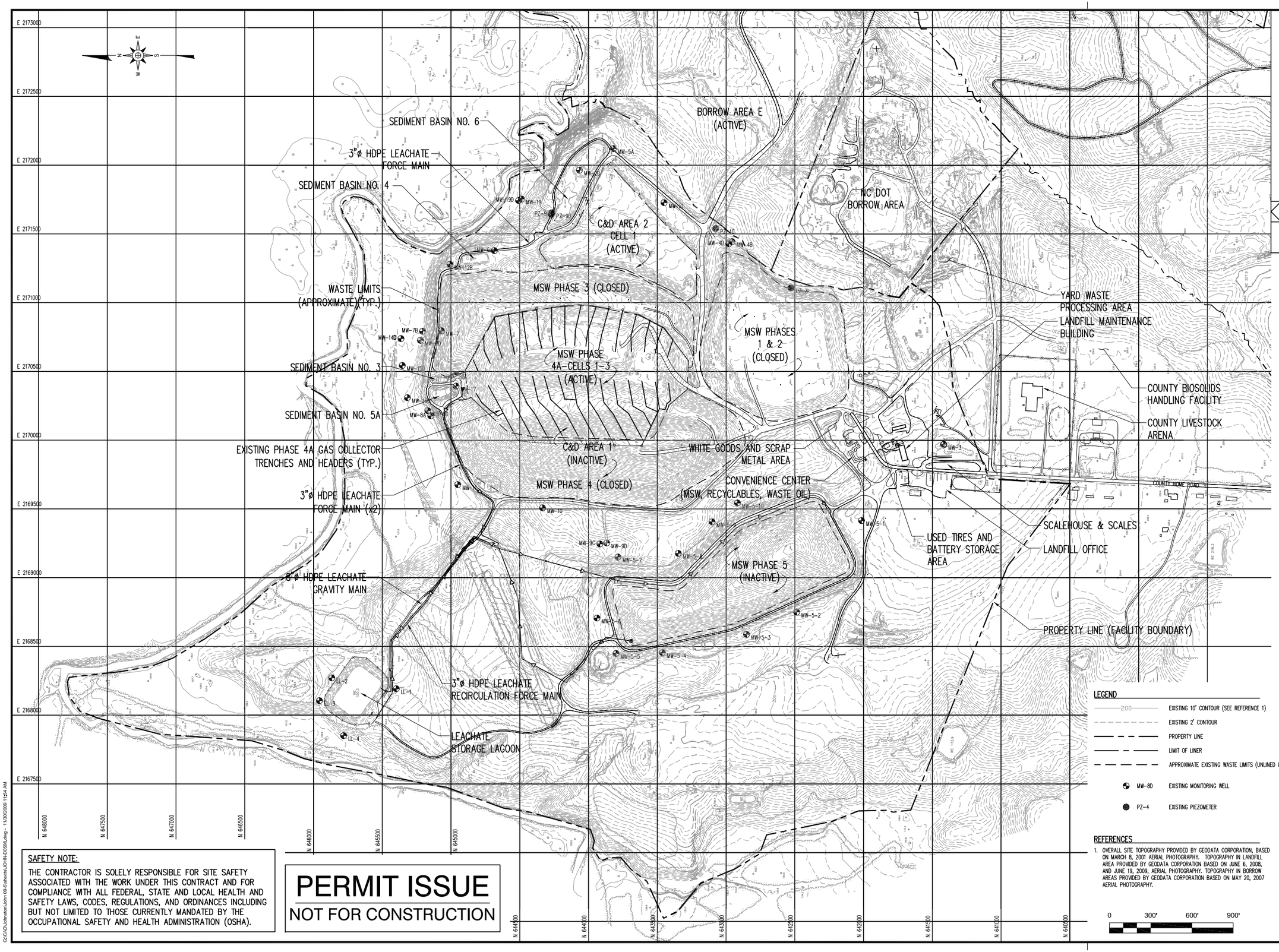

LEGEND

200	EXISTING 10' CONTOUR (SEE REFERENCE 1)
	EXISTING 2' CONTOUR
	PROPERTY LINE
	LIMIT OF LINER
	APPROXIMATE EXISTING WASTE LIMITS (UNLINED UNITS)
MW-8D	EXISTING MONITORING WELL
PZ-4	EXISTING PIEZOMETER

REFERENCES

1. OVERALL SITE TOPOGRAPHY PROVIDED BY GEODATA CORPORATION, BASED ON MARCH 8, 2001 AERIAL PHOTOGRAPHY. TOPOGRAPHY IN LANDFILL AREA PROVIDED BY GEODATA CORPORATION BASED ON JUNE 6, 2008, AND JUNE 19, 2009, AERIAL PHOTOGRAPHY. TOPOGRAPHY IN BORROW AREAS PROVIDED BY GEODATA CORPORATION BASED ON MAY 20, 2007 AERIAL PHOTOGRAPHY.

0 300' 600' 900'

SAFETY NOTE:

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SAFETY ASSOCIATED WITH THE WORK UNDER THIS CONTRACT AND FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL HEALTH AND SAFETY LAWS, CODES, REGULATIONS, AND ORDINANCES INCLUDING BUT NOT LIMITED TO THOSE CURRENTLY MANDATED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

PERMIT ISSUE

NOT FOR CONSTRUCTION

RICHARDSON SMITH GARDNER & ASSOCIATES
NC LIC NO. C-0281 (Engineering)
14 N. Boylan Ave.
Raleigh, N.C. 27603
ph: 919-828-0577
fax: 919-828-2099
www.rsgengineers.com

REVISION | NO. | DATE

SEAL

SEAL

PROJECT TITLE:
JOHNSTON COUNTY C&D LANDFILL
AREA 1 CLOSURE
CONSTRUCTION DRAWINGS

DRAWING TITLE:
EXISTING CONDITIONS

DESIGNED BY: P.K.S.	DRAWN BY: J.A.L.
CHECKED BY:	PROJECT NO.: JOHN 09-5
SCALE: AS SHOWN	DATE: DEC. 2009
FILE NAME: JOHN-D0598	
SHEET NO. 2	DRAWING NO. S1

G:\CAD\Johnston\John 09-5\sheets\JOHN-D0598.dwg - 11/30/2009 11:54 AM

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Attachment 1

Design Capacity Report Form

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AMENDED DESIGN CAPACITY REPORT FORM
FOR NSPS FACILITIES
(Please Print or Type)

This form is for NSPS facilities, (facilities which began construction, reconstruction, or modification, or began accepting waste, on or after May 30, 1991).

This form fulfills the requirements of the amended design capacity report for the municipal solid waste landfills new source performance standards promulgated on March 12, 1996 (61 FR 9905), 40 CFR 60 Subpart WWW.

This form must be completed and submitted to the implementing agency within 90 days of an increase in the maximum design capacity of the landfill to or above 2.5 million megagrams and 2.5 million cubic meters.

I. IDENTIFYING INFORMATION

1. Name of person completing form: Cybele M. Brockmann

   Telephone number: 919-828-0577

2. Person's position: Staff Engineer, Richardson Smith Gardner & Associates, Inc.

3. Name of landfill: Johnston County Landfill, MSW Permit 51-03

4. Address of landfill: 604 County Home Road, Smithfield, NC 27577

5. Name of landfill owner: Johnston County (Mr. Tim Broome, Public Utilities Director)

6. Address of landfill owner: 309 E. Market Street, Smithfield, NC, 27577

7. Name of landfill operator: Mr. Rick Proctor, Solid Waste Manager

8. Address of landfill operator: 604 County Home Road, Smithfield, NC 27577

II. DATES

9. Date solid waste construction or operating permit was issued: Permit to Operate 51-03 for Phase 4A, Cells 1, 2, and 3 (fill sequence 1), and C&D Landfill, Area 2, Cell 1 issued on September 28, 2009.

10. Date landfill began construction, modification, or reconstruction: Following receipt of the Permit to Construct on January 26, 2009.

11. Date landfill first accepted waste: Unlined Phase 1 began accepting waste in 1973

12. Date this form is submitted: December 1, 2009

III. DESIGN CAPACITY INFORMATION

13.[5] Maximum design capacity of landfill in Mg or m^3 **3,054,104 Mg (See Attachment 3)**

A. If the landfill has a State or local solid waste construction or operating permit stating the maximum design capacity, attach a copy of the permit to this form.

B. If maximum design capacity is NOT specified in a permit, attach design capacity calculations, and fill out the following information:

B1. Depth of refuse **See Attachment 3**

B2. Refuse acceptance rate **See Attachment 3**

B3. Compaction practices **See Attachment 3**

B4. Other information affecting design capacity (explain) **See Attachment 3**

14. Attach a map or plot map of the landfill to this form. The map should provide the size and location of the landfill. Include an identification of all areas where refuse may be landfilled according to the provisions of the State or local permit. See **Figure 1**.

IV. SIGNATURE

15. Signature of person completing form: Cybelle M. Brockman

16. Date of signature: December 1, 2009

[5] **To calculate Mg, multiply tons by 0.907. To calculate m^3, multiply yd^3 by 0.7646.**

Attachment 2

Permit to Operate

Permit No. 51-03

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

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

September 28, 2009

Mr. Tim Broome, Director
Johnston County Public Utilities Dept.
P O Box 2263
Smithfield, NC 27577

Re: Permit to Operate: Phase 4A, Cell 3 (Fill Sequence 1), Johnston County MSW and C&D Landfill, Permit 51-03, and Approval of C&D Unit Closure/Post-closure/financial assurance in accordance with Rule .0547, Doc ID 8483, and Doc ID 8484

Dear Mr. Broome:

Please find enclosed the Permit to Operate for the Johnston County MSW and C&D Landfill, Permit No. 51-03, which approves the operation of MSW Phase 4A, Cell 3, Fill Sequence 1.

In general, the new facility permit does not reiterate permit conditions which are included in the Solid Waste Management Rules, 15A NCAC 13B, nor does it restate specific conditions which are included within the approved plans, such as site specific operations.

In accordance with the Permit to Construct issued January 16, 2009, prior to operation of Cell 3, the permittee must contact the regional environmental specialist and permitting engineer to determine whether the Section chooses to hold a preoperative meeting with key landfill personnel and representatives of the Section. Also prior to operation, the edge of the waste footprint must be identified with permanent physical markers.

Among the many permit conditions for the landfill, we bring to your particular attention condition 21 on page 11, which requires routine cleaning and camera inspection of the leachate collections system, with the initial inspection no later than June 30, 2010.

The Solid Waste Section also approves the C&D landfill unit closure plan, post-closure plan, and financial responsibility documents submitted for the continued operation of C&D Landfill Area 2, Cell 1. The report satisfies the requirements of 15A NCAC 13B .0547 (2). The stamped approved final document may be printed from our website in a few days, listed as Document ID 8491. The report documents that C&D waste was last placed in the Area 1 C&D landfill unit prior to June 30, 2008.

This permit issuance also approves the Seep Repair and Miscellaneous Site Improvements, as outlined in the April 2009 report, Doc ID 8551.

The stamped approved Construction Quality Assurance Report for Phase 4A, Cell 3 will be available for printing from our website in a few days, listed as Document ID 8084.

If you have any questions regarding the permit or conditions, please contact me at (919) 508-8510 or by email at donna.wilson@ncdenr.gov. The Waste Management Specialist for the facility is Mary Whaley. She can be reached at (919) 693-5023.

Sincerely,

Donna J. Wilson

Donna J. Wilson
Environmental Engineer
Solid Waste Section

Enclosure
c: Rick Proctor
Pieter Scheer
Ming Chao
Mary Whaley
Dennis Shackelford

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

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION

MUNICIPAL SOLID WASTE AND C&D LANDFILL FACILITY
Permit No. 51-03

JOHNSTON COUNTY
is hereby issued a

PERMIT TO OPERATE

JOHNSTON COUNTY MSW AND C&D LANDFILL
MSW PHASE 4A, Cells 1, 2, and 3 (fill sequence 1), and C&D LANDFILL, Area 2, Cell 1

Located at 680 County Home Road, west of Smithfield, in Johnston County, North Carolina in accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit. The legal description of the site is identified on the deeds recorded for this property listed in Attachment No. 1 of this permit.

Edward F. Mussler, III, P.E.,
Permitting Branch Supervisor
Solid Waste Section

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone 919-508-8400 \ FAX 919-733-4810 \ Internet: www.wastenotnc.org/swhome

ATTACHMENT 1

PART I: PERMITTING HISTORY

Issuance	Date
Permit No. 51-01	Original Issue
Permit No. 51-01 PTO Phase 4	March 13, 1984
Permit No. 51-01 PTO vertical expansion	October 25, 1990
Permit No. 51-01 PTO vertical expansion	July 30, 1991
Permit No. 51-01 PTO C&D Phase 4A (C&D Area 1)	December 22, 1998
Permit No. 51-01 PTO C&D Phase 4A (C&D Area 1)	January 22, 2002
Permit No. 51-02 PTC Phase 5	December 22, 1995
Permit No. 51-02 PTO Phase 5	August 6, 1997
Permit No. 51-02 PTO Phase 5 leachate recirculation	March 27, 2001
Permit No. 51-03 PTC MSW Phase 4A Cells 1 and 2 and C&D Phase 4A (C&D Area 1)	April 3, 2002
Permit No. 51-03 PTO Phase 5 and C&D Phase 4A vertical expansion (C&D Area 1)	April 3, 2002
Permit No. 51-03 PTO MSW Phase 4A Cell 1 and C&D Phase 4A (C&D Area 1)	December 20, 2002
Permit No. 51-03 PTO MSW Phase 4A Cell 2 and C&D Area 1	August 1, 2005
Permit No. 51-03 PTC C&D Area 2, Cell 1	August 31, 2006
Permit No. 51-03 PTO C&D Area 2, Cell 1	August 24, 2007
Permit No. 51-03 PTC MSW Phase 4A, Cell 3	January 16, 2009
Permit No. 51-03 PTO MSW Phase 4A, Cell 3, fill sequence 1	September 28, 2009

1. In 1973, landfill operations began in Phase 1 on this property. Phases 2, 3, and 4 began operating in 1974, 1979, and 1984, respectively. In 1984, landfill permit number 51-01 was issued for the facility. Phases 1 through 4 were not constructed with a liner below the waste. Acreage and volume information on the unlined Phases of the landfill are following:

Unlined Landfill Unit	Area (acres)	Gross Capacity (cubic yards)
Phases 1 and 2	22.1	732,363
Phase 3	25.4	1,174,139
Phase 4	37.3	1,631,731
Total Unlined	84.8	3,538,233

2. In 1997, landfill operations began in Phase 5, which was constructed with a Subtitle D liner. Phase 5 was issued permit number 51-02.

3. In 1998, a separate C&D (construction and demolition debris) landfill cell began operating on top of closed MSW Phase 4. This area was called C&D Phase 4A at that time, but was later named C&D Area 1.

4. In 2002, permit number 51-03 was issued. This permit approved operation of MSW Phase 4A (Cell 1), which is a lined landfill cell between closed MSW Phases 3 and 4. Phase 4A also piggybacks the side slopes over closed Phases 3 and 4. This permit issuance incorporated previous permits 51-01 and 51-02 into one permit, now called permit number 51-03.

5. In 2005, landfill operations began in MSW Phase 4A, Cell 2. A vertical expansion was approved for C&D disposal in C&D Area 1 on top of closed Phase 4.

6. In 2007, C&D Area 2 was approved and began operating. Part of this area (Cell 1) is adjacent and east of closed MSW Phase 3, and part of Area 2 (Cell 2) piggybacks the side slope of closed Phase 3. C&D Area 2 is designed with a geomembrane liner and leachate collection system.

7. In 2009, the last cell of MSW Phase 4A, Cell 3, was approved for operation.

PART II: LIST OF DOCUMENTS FOR THE APPROVED PLAN

1. *Johnston County Subtitle D Landfill Phase 5, Permit 51-02, Construction Quality Assurance and As-Built Certification for Permit-to-Operate.* Prepared by: McKim & Creed Engineers, P.A., Cary, North Carolina. March 1997. 3 Volumes.

2. *Johnston County Subtitle D Landfill CQA, As-Built, and Revised Engineering Plan.* Prepared by: McKim & Creed Engineers, P.A., Cary, North Carolina. March 1997. 14 Sheets.

3. *Johnston County Landfill, Phase 5, Permit 51-02, Johnston County, North Carolina, Survey and As-Built Plans.* Prepared by: F. Donald Lawrence, Monroe, North Carolina. Provided by: Ground Improvement Techniques, Inc., Contractor. Submitted by: McKim & Creed, March 1997. 7 Sheets.

4. Letter Grimes to Fry. Requesting approval of Alternative Daily Cover, Tarpomatic. Includes brochure. July 27, 1998.

5. *Johnston County C&D Landfill Vertical Expansion*. Prepared for: Johnston County Department of Public Utilities. Prepared by: G.N. Richardson & Associates, Inc., Raleigh, North Carolina. December 1998.

6. Cap Closure Certification Letter for the Johnston County Landfill dated 21 December 1998 by G.N. Richardson & Associates and received 22 December 1998 and incorporated into the approved application.

7. *Permit to Construct Application. Johnston County MSW Landfill-Phase 4A. Johnston County, North Carolina*. Prepared by: G.N. Richardson & Associates, Inc., Raleigh, North Carolina. April 2000. Revised December 2001. Volume 1 of 2, Design Engineering. Volume 2 of 2, Design Hydrogeologic Report, revised January 2002.

8. *Johnston County MSW Landfill-Phase 4A. Permit Drawings*. Prepared by: G.N. Richardson & Associates, Inc., Raleigh, North Carolina. April 2000. Revised December 2001. 38 Sheets.

9. *Leachate Recirculation Plan, Johnston County MSW Landfill, Phase 5, Johnston County, North Carolina.* Prepared by: G.N. Richardson & Associates, Raleigh, North Carolina. May 2000. Amended through February 2001.

10. *Permit Modification Application. Johnston County C&D Landfill Vertical Expansion. Johnston County, North Carolina*. Prepared By: G.N. Richardson & Associates, Inc., Raleigh, North Carolina. January 2002. (Modification, Area 4A, Permit No. 51-01)

11. Division of Water Quality Permit No. WQ0019631, Johnston County, Conjunctive Use at Johnston County Landfill, Reclaimed Water Utilization System. March 27, 2002. Modified June 13, 2003, December 20, 2004, May 5, 2006, and November 16, 2006.

12. *Construction Quality Assurance Report, Johnston County MSW Landfill, Phase 4A, Cell 1, Johnston County, North Carolina.* Prepared by: G.N. Richardson & Associates, Raleigh, North Carolina. December 2002. 2 Volumes.

13. *Permit Modification Application. Johnston County C&D Landfill Vertical Expansion. Johnston County, North Carolina*. Prepared By: G.N. Richardson & Associates, Inc., Raleigh, North Carolina. December 2003, Revised August 2005.

14. *Construction Quality Assurance Report, Johnston County MSW Landfill, Phase 4A, Cell 2, Johnston County, North Carolina.* Prepared by: G.N. Richardson & Associates, Raleigh, North Carolina. July 2005.

15. *Permit to Construct Application. Johnston County C&D Landfill, Area 2, Johnston County, North Carolina*. Prepared by: G.N. Richardson & Associates, Inc., Raleigh, North Carolina. October 2005. Revised May 2006.

16. *Johnston County C&D Landfill, Area 2, Permit Drawings.* Prepared by: G.N. Richardson & Associates, Inc., Raleigh, North Carolina. October 2005. Revised March 2006. 25 Sheets.

17. *Construction Quality Assurance Report, Johnston County C&D Landfill, Area 2, Cell 1, Johnston County, North Carolina*. Prepared By: Richardson Smith Gardner & Associates, Raleigh, North Carolina. June 2007. Doc ID 2769.

18. *Johnston County Landfill Equalization Facility Drawings*. Prepared for: Johnston County. Prepared by: Dewberry & Davis, Inc., Raleigh, North Carolina. October 2007.

19. Letter from Pieter Scheer, Richardson, Smith, Gardner & Associates, to Donna Wilson, NC DENR., November 6, 2007. Revised Permit Modification Request, Modification of Existing Leachate Storage Pond for use as Equalization Basin. Doc ID 3348.

20. *Permit Amendment Application, Johnston County MSW Landfill, Phase 4A, Cell 3.* Prepared By: Richardson Smith Gardner & Associates, Raleigh, North Carolina. June 2007, amended January 2009. Doc ID 6615.

21. *Closure and Post-Closure Plans and Financial Assurance for Continued Operation of the C&D Landfill (.0547 Requirements).* Prepared By: Richardson Smith Gardner & Associates, Raleigh, North Carolina. June 2008, amended January 2009. Doc ID 8491.

22. *Seep Repair and Miscellaneous Site Improvement, Johnston County MSW Landfill.* Prepared By: Richardson Smith Gardner & Associates, Raleigh, North Carolina. April 3, 2009. Doc ID 8551.

23. *Construction Quality Assurance Report, Johnston County MSW Landfill, Phase 4A, Cell 3, Johnston County, North Carolina.* Prepared by: G.N. Richardson & Associates, Raleigh, North Carolina. July 2009, revised August 2009. Doc ID 8084.

PART III: PROPERTIES APPROVED FOR THE SOLID WASTE FACILITY

Johnston County, N.C. Register of Deeds					
Book	Page	Grantee	Grantor	Parcel No.	Acres
763	525	Johnston County	Gladys D. Lassiter	15I08028	86.6
1228	652	Johnston County	Jo Ann Johnson Lane and Ralph Lane	15I08028	248.75
1215	747	Johnston County	Hazel B. Johnson and Edwin H Johnson	15I09002C	63
E-3	1	Johnston County		15I08032B	13.01
		Johnston County		15I08032C	8.23
		Johnston County		15I08028C	88.05
Plat 59	437	Johnston County			500.12
Total Site Acreage: 500.12 acres					

PART IV: GENERAL PERMIT CONDITIONS

1. This permit is issued by the North Carolina Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section (Section). In accordance with North Carolina Solid Waste Management Rule 15A NCAC 13B .0201(d), a solid waste management facility permit shall have two parts: a Permit to Construct and a Permit to Operate. The Permit to Operate for MSW Phase 4A, Cells 1, 2, and 3 (fill sequence 1) shall expire September 28, 2014. The Permit to Operate for C&D Area 2, Cell 1 shall expire August 24, 2012. The Permit to Operate must be implemented in accordance with Attachment 3 of this permit.

2. The persons to whom this permit is issued (permittee) are the owners and operators of the solid waste management facility.

3. [Intentionally Blank]

4. When this property is sold, leased, conveyed, or transferred in any manner, the deed or other instrument of transfer must contain in the description section in no smaller type than that used in the body of the deed or instrument, a statement that the property has been used as a sanitary landfill and a reference by book and page to the recordation of the permit.

5. By beginning construction or receiving waste at this facility, the permittee shall be considered to have accepted the terms and conditions of this permit.

6. Construction and operation of this solid waste management facility must be in accordance with the Solid Waste Management Rules, 15A NCAC 13B; Article 9 of Chapter 130A of the North Carolina General Statutes (NCGS 130A-290, et seq.); the conditions contained in this permit; and the approved plan. Should the approved plan and the rules conflict, the Solid Waste Management Rules shall take precedence unless specifically addressed by permit condition.

7. The permit is issued based on the documents submitted in support of the application for permitting the facility identified in Attachment 1, Part II, List of Documents for Approved Plan, and which constitute the approved plan for the facility. Where discrepancies exist, the most recent submittals and the Conditions of Permit shall govern.

8. This permit may be transferred only with the approval of the Section, through the issuance of a new or substantially amended permit in accordance with applicable statutes and rules. In accordance with NCGS 130A-295.2(g), the permittee must notify the Section thirty (30) days prior to any significant change in the identity or business structure of either the owner or the operator, including but not limited to a proposed transfer of ownership of the facility or a change in the parent company of the owner or operator of the facility.

9. The permittee is responsible for obtaining all permits and approvals necessary for the development of this project including approval from appropriate agencies for sedimentation and erosion control, and a General or Individual National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit, if applicable. Issuance of this permit does not remove the permittee's responsibilities for compliance with any other local, state or federal rule, regulation or statute.

- End of Section -

ATTACHMENT 2

CONDITIONS OF PERMIT TO CONSTRUCT

PART I: FACILITY SPECIFIC CONDITIONS

1. Previous Permit to Construction issued January 16, 2009, approved the construction of MSW Phase 4A, Cell 3, and this construction has been completed. Areas identified as future phases (Phases 6 through 10) are deemed suitable for preparation of a permit application in accordance with Solid Waste Rule 15A NCAC 13B .1618(a)(1). The permittee must submit an application for a Permit to Construct in compliance with applicable rules and statutes before commencement of construction in those future areas.

2. Previous Permit to Construct issued August 31, 2006, approved the construction of C&D Area 2, Cell 1, and this construction has been completed. An application for a Permit to Construct must be submitted and approved prior to construction of Area 2, Cell 2.

-End of Section-

ATTACHMENT 3

CONDITIONS OF PERMIT TO OPERATE

PART I: GENERAL FACILITY CONDITIONS

1. This facility is permitted to receive non-hazardous solid waste generated within the State of North Carolina, consistent with local government waste management plans(s) and with local government approval and as defined in G.S. 130A-290(a) (35), except where prohibited by the North Carolina General Statutes Article 9 of Chapter 130A, and the rules adopted by the Commission for Health Services.

2. The annual disposal rate for the MSW and C&D units must be no more than 350,000 tons/year which corresponds to approximately 1,122 tons/day, 312 operating days per year. No more than 156,000 tons/year, approximately 500 tons/day, 312 operating days per year, shall be waste generated outside of Johnston County, in accordance with the local government approval issued for this facility.

3. The owner or operator of the landfill facility must not knowingly dispose of any type or form of municipal solid waste that is generated within the boundaries of a unit of local government that by ordinance:

    a. Prohibits generators or collectors of municipal solid waste from disposing of that type or form of municipal solid waste.

    b. Requires generators or collectors of municipal solid waste to recycle that type or form of municipal solid waste.

4. The facility operator must complete an approved operator training course in compliance with G.S. 130A-309.25.

    a. A responsible individual certified in landfill operations must be on-site during all operating hours of the facility that it is open for public use to ensure compliance with operational requirements.

    b. All pertinent landfill-operating personnel must receive training and supervision necessary to properly operate the landfill units in accordance with G.S. 130A-309.25 and addressed by memorandum dated November 29, 2000.

5. The use of different alternative daily cover requires approval, prior to implementation, by the Solid Waste Section. Requests for alternative daily cover approval must include a plan detailing the comprehensive use and a demonstration of the effectiveness of the alternative daily cover. The plan must be developed according to Section guidelines.

Plans which are approved by the Section will be incorporated into, and made a part of, the approved documents listed in Attachment 1.

6. All sedimentation and erosion control activities must be conducted in accordance with the Sedimentation Control Act N.C.G.S. 113A-50, et seq., and rules promulgated under 15A NCAC 4

7. Permanent physical markers must be maintained to identify the edge of the approved waste footprint. Boundaries must be marked for MSW Phase 3 and 4 (outer boundaries), Phase 4A, Phase 5, and C&D Area 2, Cell 1.

Monitoring and Reporting Conditions

8. Ground water monitoring at this unit must be as prescribed by the appropriate requirements of 15A NCAC 13B .1630-.1637 and the approved monitoring plan.

9. A Licensed Geologist must supervise installation of groundwater monitoring wells.

10. Any modification to the approved water quality monitoring, sampling, and analysis plan must be submitted to the Section Hydrogeologist for review.

11. Within 30 days of completed construction of each new groundwater monitoring well, a well construction record (GW-1 form), typical well schematic, boring log, field log and notes, and description of well development activities must be submitted to the Section.

12. A readily accessible unobstructed path must be cleared and maintained so that four-wheel drive vehicles may access monitoring well locations at all times.

13. A field log book which details all development, sampling, repair, and all other pertinent activities associated with each monitoring well and all sampling activities associated with each surface water and leachate sampling location must be kept as part of the permanent facility record.

14. Records of all ground water, surface water and leachate analytical data must be kept as part of the permanent facility record.

15. Ground water monitoring wells and surface water sampling locations must be sampled for Appendix I constituents at least semi-annually according to the specifications outlined in the approved water quality monitoring plan and the current policies and guidelines of the Section in effect at the time of sampling.

16. Reports of the analytical data for each water quality sampling event must be submitted to the Section within 60 days of the respective sampling event. Analytical data must be submitted in a manner prescribed by the Section.

17. The four independent samples which comprise the initial baseline sampling event must be collected from each ground water monitoring well and the report must be submitted to the Section within six months after issuance of the Permit to Operate.

18. The permittee must provide a plan sheet-sized, scaled topographical map, showing the location and identification of new, existing, and abandoned wells and piezometers after installation of groundwater monitoring wells.

19. Well abandonment records (GW-30 form) for each decommissioned piezometer, boring, and groundwater monitoring well must be certified by a Licensed Geologist and submitted to the Section in accordance with 15A NCAC 2C .0114 (b).

20. Untreated leachate must be sampled and analyzed at least semi-annually concurrently with the ground and surface water sampling. The leachate must be analyzed for all Appendix I constituents, pH, specific conductance, BOD, COD, phosphate, nitrate, and sulfate. Test results must be submitted to the Section along with ground and surface water test results. Leachate recirculation is approved for Phase 5. Additional leachate sampling must be in accordance with the plan approved in Attachment 1, Approved Documents, Part II, Document 9.

21. All accessible leachate lines at the facility must be camera-inspected and cleaned at least every three years or earlier if an abnormal reduction in leachate production is observed, in accordance with the plan described on page 3.0-4 of the Operating Plan, Document 20, Attachment 1, List of Approved Documents, Doc ID 6615. Any blockages encountered must be repaired and reported to the Section. Following any blockages, the frequency of camera inspection and cleaning is yearly. Leachate lines in areas of new construction must be cleaned and camera-inspected after construction is complete. The initial camera inspection and cleaning of all accessible leachate lines at the facility must be performed, and a report submitted to the Section, no later than June 30, 2010. Documentation of all subsequent camera-inspections and cleaning must be added to the facility operating record and made available to the Section upon request.

22. The facility must maintain records for all solid waste materials accepted as alternative cover material and used as alternate daily cover. The records must include: the date of receipt, weight of material, general description of the material, identity of the generator and transporter, and county of origin. Such records must be made available to the Section upon request.

Erosion and Sedimentation Control Requirements

23. All required sedimentation and erosion control measures must be installed and operable to mitigate excessive on-site erosion and to prevent silt from leaving the area of the landfill unit during the service life of the facility.

24. All earth disturbing activities must be conducted in accordance with the Sedimentation Pollution Control Act of 1973 (15 NCAC 4) and consistent with any other local, state or federal requirements.

25. Facility construction, operations or practices must not cause or result in a discharge of pollution, dredged material, and/or fill material into waters of the state in violation of the requirements under Sections 402 and 404 of the Clean Water Act, as amended.

26. Modifications to the approved sedimentation and erosion control activities require approval by the North Carolina Land Quality Section. The Section must be notified of any sedimentation and erosion control plan modifications.

PART II: MUNICIPAL SOLID WASTE LANDFILL SPECIFIC CONDITIONS

27. The Permit to Operate for MSW Phase 4A, Cells 1, 2, and 3 (fill sequence 1) shall expire September 28, 2014. Pursuant to 15A NCAC 13B .0201(g), no later than May 28, 2014, the owner or operator must submit to the Solid Waste Section for review an amendment to the permit prepared in accordance with 15A NCAC 13B .1603(a)(2). The permittee may choose to submit the application for amendment together with an application for amendment of the C&D landfill unit, at the earlier required amendment submittal date.

28. This permit approves the operation of Phase 4A, Cell 3, fill sequence 1, and the continued operation of Phase 4A, Cells 1 and 2, as well as the onsite environmental management and protection facilities as described in the approved plans. Phase 4A is a lined MSW unit that piggy-backs the unlined MSW units 3 and 4. The maximum approved elevation of Cell 3, fill sequence 1, is elevation 298 feet, as shown on Drawing P1, Sheet 22 of Attachment 1, Part II, Document 20 (page 731 of Doc ID 6615).

29. The following table lists the dimensions and details for the lined MSW landfill units, both existing and planned, as described in Attachment 1, Approved Documents, Document 20, Table 2.2A (Doc ID 6615). Approximate service years are based on an average disposal rate of approximately 370 tons per day in 2007 (MSW only), with an increasing rate per year according to the estimated increase in population. Gross capacity is the measured volume between the bottom of waste and the top of final cover.

Lined (Subtitle D) MSW Units	Acres	Gross Capacity (cubic yards)	Approximate Service Years[1]
Phase 5	19.2	1,087,199	Inactive
Phase 4A (Cells 1 and 2)	22.0	1,111,382	At capacity
Phase 4A (Cell 3-1)[2]	7.4	1,420,566	3.1 - 5.9
Phase 4A (Cell 3–2)	0[3]	746,481	1.3 - 2.6
Phase 6[4]	21.1	1,402,016	2.3 – 4.3
Phase 7	19.8	1,758,991	2.8 – 4.8
Phase 8	25.2	1,844,867	2.8 – 4.4
Phase 9	22.5	6,684,914	11.2 – 15.7
Phase 10	17.5	3,075,968	4.6 – 5.7
Total (Lined)	154.7	19,132,384	23.7 – 34.9

[1]Life expectancy as calculated January 2009.
[2]Maximum fill elevation of fill sequence 1 is elevation 298 feet, as shown on Drawing P1, Doc ID 6615.
[3]Phase 4A, Cell 3, fill sequence 2 is a vertical expansion over fill sequence 1, and is not approved for operation at this time.
[4]Applications must be submitted to the Section for review and approval prior to the construction and operation of Phases 6 through 10.

30. The last approved and advertised Facility Plan identified the total gross capacity of the landfill as 19,900,000 cubic yards, which was combined MSW volume (MSW Phases 4A and Phases 5 – 10) of 18,367,420 cubic yards and C&D volume of 1,487,003 cubic yards. The 2009 Facility Plan has been modified to increase the total gross landfill capacity to 20,620,189 cubic yards, which is combined MSW capacity of 19,132,384 cubic yards and C&D volume of 1,487,805 cubic yards. This increase is a 3.6% increase of the total gross capacity of the landfill. If a 10% or more increase in total gross landfill capacity is proposed in the future, which would result in 21,890,000 cubic yards or more for the combined MSW Phases 4A and 5 – 10 capacity and C&D area capacity, public notice and local government approval will be required.

31. The use of alternative daily cover requires approval, prior to implementation, by the Solid Waste Section. Requests for alternative daily cover approval must include a plan detailing the comprehensive use and a demonstration of the effectiveness of the alternative daily cover. The plan must be developed according to Section guidelines. Plans which are approved by the Section will be incorporated into, and made a part of, the approved documents found in Attachment 3.

32. The use of tarps and the "Tarpomatic" system for alternative daily cover is approved. Its use must be in accordance with Document 4 of Part II, Attachment 3. Soil cover must be applied at a minimum of once per week in accordance with Rule .1626 (2). Soil must be applied

more frequently if needed, to control nuisance, odor, or vectors.

33. A leachate recirculation demonstration project is approved for Phase 5. Leachate may be recirculated in accordance with the plan as identified in Attachment 3, Part II, Document 5. Recirculation may continue following the demonstration project unless otherwise directed by the Division.

34. The use of leachate recirculation as a leachate management tool during the post-closure care period requires approval by the Solid Waste Section prior to implementation. Additional engineering demonstrations and operational plans may be necessary. Such demonstrations and plans must be developed, incorporated into the final Closure and Post-Closure plan, and submitted to the Solid Waste Section for approval prior to implementation. Plans which are approved by the Section will be incorporated into, and made a part of, the approved documents found in Attachment 3.

35. The facility is permitted to co-dispose of wastewater treatment sludge generated within the facility's approved service area, and subject to the terms and procedures of the approved plan.

36. Closure or partial closure of any MSWLF unit must be in accordance with the Closure Plans described in the approved plans and 15A NCAC 13B .1629. Final Closure Plans must be submitted to the Division at least 90 days prior to implementation. Closure and Post-Closure cost estimates and financial instruments must be updated annually pursuant to 15A NCAC 13B .1628.

37. On or before August 1 annually, the Permittee must submit an annual facility report to the Section, on forms prescribed by the Section.

    a. The reporting period shall be for the previous year beginning July 1 and ending June 30.

    b. The annual report must list the amount of waste received and landfilled in tons and be compiled:
        i. On a monthly basis.
        ii. By county, city or transfer station of origin.
        iii. By specific waste type.
        iv. By disposal location within the facility.
        v. By diversion to alternative management facilities.

    c. A measurement of volume utilized in the MSW cells must be performed during the second quarter of the calendar year. The date and volumes, in cubic yards, must be included in the report.

d. The amount of MSW waste, in tons from scale records, disposed in landfill cells since August 6, 1997 through the date of the annual volume survey must be included in the report.

e. The completed report must be forwarded to the Regional Waste Management Specialist for the facility by the date due on the prescribed annual facility report form.

f. A copy of the completed report must be forwarded to each county manager for each county from which waste was received at the facility. Documentation that a copy of the report has been forwarded to the county managers must be sent to the Regional Waste Management Specialist by the date due on the prescribed annual facility report form.

PART III: CONSTRUCTION AND DEMOLITION DEBRIS UNIT SPECIFIC CONDITIONS

38. The Permit to Operate for C&D Area 2, Cell 1 shall expire August 24, 2012. Pursuant to 15A NCAC 13B .0201(g), no later than April 24, 2012, the owner or operator must submit to the Solid Waste Section for review an amendment to the permit prepared in accordance with 15A NCAC 13B .0533(a)(2). The permittee may choose to submit the application for amendment together with an application for amendment of the MSW landfill unit, at the earlier required amendment submittal date.

39. This permit approves the continued operation of Area 2, Cell 1 for the disposal of C&D waste. The following table lists the dimensions and details for the C&D landfill units, both existing and planned, as described in Attachment 1, Part II, Document 20, Table 2.2B (Doc ID 6615). Approximate service years are based on an average disposal rate of approximately 106 tons per day in 2007 (C&D waste only), with an increasing rate per year according to the estimated increase in population.

C&D Units	Acres	Gross Capacity (cubic yards)	Approximate Service Years[1]
Area 1	16.2	614,472	Inactive
Area 2, Cell 1	11.9	410,675	4.3 – 5.1
Area 2, Cell 2[2]	3.9	462,658	4.9 – 5.7
Total	32.0	1,487,805	9.2 – 10.8

[1]Life expectancy as calculated 6/6/08.

[2]An application must be submitted to the Section for review and approval prior to the construction and operation of Area 2, Cell 2.

40. The C&DLF unit is permitted to receive construction and demolition waste and land clearing and inert debris as follows:

    a. "C&D solid waste" as defined in 15A NCAC 13B, Rule .0532(8) means solid waste generated solely from the construction, remodeling, repair, or demolition operations on pavement and buildings or structures. C&D waste does not include municipal and industrial wastes that may be generated by the on-going operations at buildings or structures.

    b. A land clearing and inert debris landfill as defined in 15A NCAC 13B, Rule .0101(54) means a facility for the land disposal of land-clearing waste, concrete, brick, concrete block, uncontaminated soil, gravel and rock, untreated and unpainted wood, and yard trash.

    c. Land Clearing Waste as defined in 15A NCAC 13B, Rule .0101(53) means solid waste which is generated solely from land clearing activities, limited to stumps, trees, limbs, brush, grass, and other naturally occurring vegetative material.

    d. Asphalt in accordance with G.S. §130A-294(m).

41. The C&DLF unit must not accept wastes excluded for disposal as specified in 15A NCAC 13B, Rule .0542(e).

42. The leachate collection system within the C&D units must be operated to remove leachate from the landfill in such a way as to ensure that the leachate head on the liner does not exceed one foot under normal operating conditions.

43. Groundwater and surface water sampling and analysis must conform to the specifications found in the approved plan. The existing groundwater monitoring system will be utilized for groundwater monitoring for the C&D units in accordance with 15A NCAC 13B .1630 through .1633. Assessment monitoring must continue in accordance with the Solid Waste Management Rules and any additional requirements set forth by the Solid Waste Section.

44. The C&D units must be closed in accordance with the approved plan and the requirements of the Solid Waste Section at the time of closure. A final closure plan must be submitted for review at least ninety (90) days prior to closure of any phase of the C&D landfill unit.

45. On or before August 1 annually, the Permittee must submit an annual facility report to the Section, on forms prescribed by the Section.

a. The reporting period shall be for the previous year beginning July 1 and ending June 30.

b. The annual report must list the amount of waste received and landfilled in tons and be compiled:
   i. On a monthly basis.
   ii. By county, city or transfer station of origin.
   iii. By specific waste type.
   iv. By disposal location within the facility.
   v. By diversion to alternative management facilities.

c. A measurement of volume utilized in the C&D cells must be performed during the second quarter of the calendar year. The date and volumes, in cubic yards, must be included in the report.

d. The amount of C&D waste, in tons from scale records, disposed in landfill cells since August 24, 2007, through the date of the annual volume survey must be included in the report.

e. The completed report must be forwarded to the Regional Waste Management Specialist for the facility by the date due on the prescribed annual facility report form.

f. A copy of the completed report must be forwarded to each county manager for each county from which waste was received at the facility. Documentation that a copy of the report has been forwarded to the county managers must be sent to the Regional Waste Management Specialist by the date due on the prescribed annual facility report form.

PART VI: MISCELLANEOUS SOLID WASTE MANAGEMENT UNIT SPECIFIC CONDITIONS

YARD WASTE PROCESSING AND STORAGE UNIT

46. Yard Waste must be managed within the facility in the area identified on Drawing S1 of Document 20, Attachment 1, Part II (Doc ID 6615). Management of yard waste in areas of the facility other than that referenced above, require written permission of the Solid Waste Section.

47. The yard waste processing area must be operated in accordance with the Rules for Solid Waste Compost Facilities, 15A NCAC 13B .1401 et seq, as applicable.

SPRAY IRRIGATION UNIT

48. Operation of the spray irrigation system at the landfill must be in accordance with the operations plan contained in Appendix E of the Operations Manual, Attachment 1, Part II, Document 20 (Doc ID 6615).

49. Operation of the spray irrigation system must be in accordance with the most recent Water Quality Permit.

RECYCLING COLLECTION AREAS

50. Recycling areas, including the white goods, battery, waste oil, and tire collection areas, and the yard waste processing area, must be located in areas of the facility as shown on the approved drawings (Drawing S1, Attachment 1, Part II, Document 20 (Doc ID 6615)). The Section must be notified of any planned changes to the locations of these processing or collection areas.

-End of Permit Conditions-

Attachment 3

Calculation of Net Design Capacity

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RICHARDSON SMITH GARDNER & ASSOCIATES
ENGINEERING & GEOLOGICAL SERVICES

DATE: 12/1/09
JOB NO: Johnston 09-4
BY: CBM
CHECKED BY:
PAGE: ___OF___

Objective: To calculate the net design capacity of Phases 1-5, and Phase 4A, Cells 1-3.

Approach:

Net design capacities in cubic yards (yd^3) and tons for Phases 1-5, and Phase 4A, Cells 1-3 were determined in the Permit to Construct Application for Phase 4A Cell 3 (**Ref. 1**). These capacities are summarized on the **Attached Capacity Evaulation Summary** and converted to cubic meters (m^3) and megagrams (Mg) **in the table below.** Calculations for determining net design capacity of the landfillexcluding Phase 4A, Cell 3 are documented in a previously submitted DCR (**Ref. 2**).

Calculation:

Net design capacity of Phase 4A, Cell 3 is calculated by deducting the documented volume of periodic cover from the gross capacity of Phase 4A, Cell 3, Fill Sequence 1 (**Ref. 1**), as shown on the **Attached Capacity Evaluation for Phase 4-Cell 3 Filling Sequence 1**.

Net Waste Capacities from Reference 1

Landfill Unit	**Cubic yards, yd^3**	**Cubic meters, m^3**	**tons**	**Mg**
Phases 1-5, Phase 4A, Cells 1 & 2[a]	4,277,759	3,270,581	2,521,336	2,287,318
Phase 4A, Cell 3 (Fill Sequence 1)	1,207,481	923,185	845,237	766,786
Total (Phases 1-5, 4A Cells 1,2,3)	**5,485,240**	**4,193,767**	**3,366,573**	**3,054,104**

[a]Phases 1-4 are closed; Phase 5 is inactive; Phases 4A, Cells 1 & 2 are at capacity; Phase 4A, Cell 3 is active.

Conversion Factors

1 yd^3 = 0.76455 m^3
1 ton = 0.907 Mg

References:

[1] Permit to Construct Application for Johnston County MSW Landfill – Phase 4A – Cell 3 prepared for Johnston County Department of Public Works by RSG, June 2007, Revised December 2008.

[2] Amended NSPS Design Capacity Report, Johnston County Landfill (NC Solid Waste Permit No. 51-03) submitted to North Carolina DENR, DAQ November 4, 2005.

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JOB #: JOHNSTON-07-2
DATE: 12/3/08
BY: PKS
CHKD BY:

Johnston County Landfill
Capacity Evaluation - Summary[1]

Landfill Unit	Area (Acres)	Gross Capacity (CY)	Net (Waste) Capacity		Life Expectancy (Years) (Max/Min)	
			(CY)	(Tons)		
Unlined MSW Landfill Units						
Phase 1/2 (Closed)	22.1	732,363	495,790	297,474	Closed	
Phase 3 (Closed)	25.4	1,174,139	819,136	491,482	Closed	
Phase 4 (Closed)	37.3	1,631,731	1,133,533	680,120	Closed	
Total (Unlined MSW)	84.8	3,538,233	2,448,459	1,469,076	Closed	
Lined MSW Landfill Units						
Phase 5 (Inactive)	19.2	1,087,199	884,625	514,181	Inactive	
Phase 4 (Cells 1 & 2) (Active) (See Note 1)	22.0	1,111,382	944,675	538,079	At Capacity (See Note 2)	
Phase 4A (Cell 3 - Fill Sequence 1)	7.4	1,420,566	1,207,481	845,237	5.9	3.1
Phase 4A (Cell 3 - Fill Sequence 2)	0.0	746,481	553,874	387,712	2.6	1.3
Phase 6	21.1	1,402,016	1,167,578	700,547	4.3	2.3
Phase 7	19.8	1,758,991	1,462,230	877,338	4.8	2.8
Phase 8	25.2	1,844,867	1,495,182	897,109	4.4	2.8
Phase 9	22.5	6,684,914	5,611,690	3,928,183	15.7	11.2
Phase 10	17.5	3,075,968	2,524,065	1,766,846	5.7	4.6
Total (Lined MSW)	154.7	19,132,384	15,851,400	10,455,232	34.9	23.7
Total (MSW)	239.5	22,670,617	18,299,859	11,924,308	34.9	23.7
C&D Landfill Units						
Area 1 (Vertical Expn.) (Active) (See Note 1)	16.2	614,472	515,563	304,780	Inactive	
Area 2 - Cell 1	11.9	410,675	353,056	212,920	5.1	4.3
Area 2 - Cell 2	3.9	462,658	387,062	232,237	5.7	4.9
Total (C&D)	32.0	1,487,805	1,255,681	749,937	10.8	9.2

Notes:
1. Life Expectancy as of June 6, 2008.
2. Operations in Cells 1 and 2 have expanded vertically into the Cell 3 Fill Seq. 1 volume.

References:
1. Permit to Construct Application for Johnston County MSW Landfill – Phase 4A – Cell 3 Smithfield, North Carolina, prepared for Johnston County Department of Public Works by RSG, June 2007, Revised December 2008.

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JOB #: JOHNSTON-07-2
DATE: 12/3/08
BY: PKS
CHKD BY:

Johnston County Landfill
Capacity Evaluation - MSW - Phase 4A - Cell 3 (Fill Sequence 1)[1]

Waste & Periodic Cover Parameters:

Waste Density (pcy) =	1,400	(From Filling Rate and Density Calcs.) (Recent Trend)
Waste Density (tcy) =	0.70	
Percentage of Periodic Cover =	15	

Volume Calculations:

Volume From AutoCAD (cy) =	1,420,566	(Cell 1 & 2 Permitted Grades vs. Fill Seq. 1) **(= Gross Capacity)**

Net (Waste) Capacity:

Volume of Waste and Periodic Cover (cy) =	1,420,566
Volume of Periodic Cover (cy) =	(213,085)
Net (Waste) Capacity (cy) =	1,207,481
Net (Waste) Capacity (tons) =	845,237

Life Expectancy Calculations:

Volume of Waste & Periodic Cover Already Used From AutoCAD (cy) =	90,780	(From 6/08 Volume Study)
Volume of Periodic Cover Already Used (cy) =	(13,617)	
Net (Waste) Capacity Already Used (cy) =	77,163	
Net (Waste) Capacity Already Used (tons) =	54,014	
Net (Waste) Capacity Remaining (tons) =	791,223	

County-Only:

Start Time	End Time	Tons Disposed	Total Tons	Remainder	
2008.43	2009	69,515	69,515	721,708	
2009	2014	668,027	737,542	53,681	Based on Est. Waste Generation
2014	2014.37	53,681	791,223	(0)	(Attached)

Landfill Life Expectancy (years) = 5.9 May 2014

References:
1. Permit to Construct Application for Johnston County MSW Landfill – Phase 4A – Cell 3 Smithfield, North Carolina, prepared for Johnston County Department of Public Works by RSG, June 2007, Revised December 2008.