

5101Permit1989 - Batch No. \_\_\_

1989 - Schiston Co.

51-01

5101 1989



State of North Carolina  
Department of Environment, Health, and Natural Resources  
Division of Solid Waste Management  
P.O. Box 27687 · Raleigh, North Carolina 27611-7687

James G. Martin, Governor  
William W. Cobey, Jr., Secretary

William L. Meyer  
Director

September 22, 1989

Mr. Haywood Phthisic  
Johnston County Utility Department  
P.O. Box 2263  
Smithfield, N.C. 27577

Re: Annual Ground and Surface Water Monitoring at the Johnston  
County Sanitary Landfill (Permit #51-01)

Dear Mr. Phthisic,

Thank you for your telephone call today regarding the request from our office for further well documentation for the Johnston County landfill facility. We would appreciate receiving any well construction records you are able to provide for us.

During the course of our conversation, it became apparent that Johnston County needs to re-establish a ground and surface water monitoring program on an annual basis. Attached is a copy of the March 31, 1987, letter from our office informing all owner/operators of sanitary landfills operating in North Carolina at that time of their responsibility for implementing an on-going hydrogeologic monitoring program by July 1, 1987. Also enclosed is a copy of the "North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities". This Guidance Document delineates the sampling parameters presently required by our office and the approved sampling equipment and procedures.

You should try to schedule a sampling date for the Johnston County landfill facility as soon as possible. Please inform our office in writing within 15 days of the name of the contractor you have chosen to perform your ground and surface water extractions, and the date on which you plan to perform your annual sampling. Again, it is very important that all sampling activities be performed in a manner consistent with the specifications in the "North Carolina Water Quality Guidance Document for Solid Waste Facilities".

Page 2

If you have questions or comments please contact this office at  
(919) 733-0692.

Sincerely,

*Bobby Lutfy*

Bobby Lutfy  
Hydrogeological Technician  
Solid Waste Section

BL

cc: Terry Dover  
Dexter Matthews

Attachments



# RAGSDALE CONSULTANTS, P.A.

310 E. JOHNSTON STREET

P. O. BOX 1749

SMITHFIELD, N. C. 27577

TELEPHONE (919) 934-7154

September 6, 1989

Mr. Jim Coffey  
Solid Waste Branch  
Division of Health Services  
North Carolina Department of Human Resources  
Post Office Box 2091  
Raleigh, North Carolina 27602-2091



RE: Johnston County Landfill  
Permit No. 51-01

Dear Mr. Coffey:

Johnston County has authorized an investigation for improving the drainage pattern through the proposed vertical expansion. The resulting changes in volumes are shown on the attached revised letter dated June 29, 1989.

Other pertinent information regarding these changes is included on the plans. We are enclosing four (4) complete sets of drawings with revised sheets marked accordingly.

We request that your review of the proposed vertical expansion as requested in our letter dated June 29, 1989, be supplemented to include these changes. Should you require any additional information, please contact us.

Respectfully submitted,

RAGSDALE CONSULTANTS, P.A.

Jane D. Allen, E.I.T.

JDA/ccy  
Enclosure

cc: Mr. Richard Self  
Mr. Haywood Phthisic

ENGINEERING • LANDSCAPE ARCHITECTURE  
SURVEYING • PHOTOGRAMMETRY

RALEIGH OFFICE: SUITE 360 WESTCHASE ONE, 4020, WESTCHASE BLVD. RALEIGH, N.C. 27607 (919) 832-6065  
LILLINGTON OFFICE: P.O. BOX 760 LILLINGTON, N.C. 27546 (919) 893-2156



# RAGSDALE CONSULTANTS, P.A.

310 E. JOHNSTON STREET

P. O. BOX 1749

SMITHFIELD, N. C. 27577

TELEPHONE (919) 934-7154

(Revised August 30, 1989)  
June 29, 1989

Mr. Jim Coffey  
Solid Waste Branch  
Division of Health Services  
North Carolina Department of Human Resources  
Post Office Box 2091  
Raleigh, North Carolina 27602-2091

RE: Johnston County Landfill  
Permit No. 51-01

Dear Mr. Coffey:

Johnston County has authorized an investigation for extending the life of the landfill by vertical expansion of all previously approved phases.

Pursuant to the County's request, we updated our mapping of the site in June 1989, and have made an evaluation of the current operations. The existing status is as follows:

Phase II is currently full	
Phase III is currently full	
Phase IV is currently under operation	
Section I:	70,700 c.y. cut volume available
	-19,500 c.y. final cover needed
	<u>-13,200</u> c.y. dikes needed
	38,000 c.y. working cover available
Section II:	344,700 c.y. cut volume available
	- 57,500 c.y. final cover needed
	<u>- 42,000</u> c.y. dikes needed
	245,200 c.y. working cover available
<u>Total:</u>	283,200 c.y. working cover available

Previous investigation indicates at 2.7:1 Fill/Cover ratio

764,640 c.y. fill volume available without offsite borrow

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Based on North Carolina averages, we anticipate a 7.0 pounds/capita/day solid waste generation rate. Recent population projections for Johnston County project a 1990 population of 87,353 and a 2000 population of 103,791; the average population over the 10-year span is 95,572. The average annual solid waste generation will require 244,186 c.y./year. Therefore the lifespan of the existing landfill, without utilizing off-site borrow, is an estimated 3.1 years.

In order to maximize the use of the land already set aside for the landfill, we request an amendment to the permit in the form of vertical expansion. To preserve the aesthetics of the site, we do not foresee expanding above the height of the existing trees acting as a buffer to the site. This limits us to approximately 20 feet above the previously approved level.

Total volume with addition =	4,910,409 c.y. $\Delta$
Volume for dikes =	671,600 c.y. $\checkmark$
Volume for 2' final cover =	273,185 c.y. $\Delta$
Subtotal volume earth =	944,785 c.y. $\Delta$
Remaining volume for fill =	3,965,624 c.y. $\Delta$
Necessary working cover (2.7/1 ratio) =	1,468,750 c.y. $\Delta$
Total volume earth =	2,413,535 c.y. $\Delta$
Remaining volume for solid waste =	2,496,874 c.y. $\Delta$
Estimated lifespan expansion =	10.2 years $\checkmark$

This expansion will require 2,413,535 c.y. of earth for final cover, dikes and working cover. A volume of 415,400 c.y. is available in previously approved excavation. Therefore, 1,998,135 c.y. will be required from other areas.

An existing borrow pit is currently under operation in the near vicinity. This site is being investigated as a possible borrow area, based on acceptability of soil and an economical agreement with the owner/operator of the pit. Any offsite borrow will be approved by the Solid Waste Branch of the Division of Health Services.

Mr. Jim Coffey  
June 29, 1989  
Page Three

(Revised 8/30/89)

The completion of Phase II took place prior to the enactment of the presently enforced regulations to ensure the security of the environment. The County foresees possible problems with this site if it is left as is. The intention of our proposal is to improve the compaction of the existing fill while compacting the proposed vertical expansion, then to secure the entire site when closing out.

A majority of the approved area for Phase IV - Section 2 has presently been left undisturbed in order to minimize, for as long as practical, the quantity of land being filled in order to reduce the possible areas for contamination and to maintain the aesthetics and ecology of the area. We propose to utilize the volume of the vertical expansion prior to disturbing and utilizing the remainder of Phase IV - Section 2.

The construction of dikes for the previously approved areas have been performed or are planned in eight to fifteen feet lifts. We recommend this same practice to continue in the vertical expansion.

The landfill operation is under the administrative control of the Director of Public Utilities, Haywood Phthisic. The landfill operation and personnel are supervised by R.B. Howell. An existing fenced area at the front of the site controls access to the site.

Other pertinent information is included on the plans. We are enclosing four sets of drawings showing the proposed vertical expansion. Please note that we are submitting the entire set of drawings of the originally planned Phase IV with revised sheets marked accordingly.

We request your approval of the vertical expansion of twenty feet. Should you require any additional information, please contact us.

Respectfully submitted,

RAGSDALE CONSULTANTS, P.A.



Jane D. Allen, E.I.T.

Enclosures

JDA/ccy

cc: Mr. Richard Self  
Mr. Haywood Phthisic



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310 E. JOHNSTON STREET

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SMITHFIELD, N. C. 27577

TELEPHONE (919) 934-7154

June 29, 1989



Mr. Jim Coffey  
Solid Waste Branch  
Division of Health Services  
North Carolina Department of Human Resources  
Post Office Box 2091  
Raleigh, North Carolina 27602-2091

RE: Johnston County Landfill  
Permit No. 51-01

Dear Mr. Coffey:

Johnston County has authorized an investigation for extending the life of the landfill by vertical expansion of all previously approved phases.

Pursuant to the County's request, we updated our mapping of the site in June 1989, and have made an evaluation of the current operations. The existing status is as follows:

Phase II is currently full  
Phase III is currently full  
Phase IV is currently under operation

Phase IV - Section I:      65,000 c.y. cut volume available  
                                 -19,500 c.y. final cover needed  
                                 -13,200 c.y. dikes needed  
  
                                 32,200 c.y. working cover available

Section II:                280,000 c.y. cut volume available  
                                 - 57,500 c.y. final cover needed  
                                 - 42,000 c.y. dikes needed  
  
                                 180,500 c.y. working cover available

Total:                    212,800 c.y. working cover available  
                                 212,700

Previous investigation indicates at 2.7:1 Fill/Cover ratio

574,560 c.y. fill volume available without offsite borrow

*306,000 c.y.  
Fill Volume  
now*

*792,000 c.y.  
Fill  
Volume  
now*

*1098,000 c.y.*

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Mr. Jim Coffey  
 June 29, 1989  
 Page Two

Based on North Carolina averages, we anticipate a 7.0 pounds/capita/day solid waste generation rate. Recent population projections for Johnston County project a 1990 population of 87,353 and a 2000 population of 103,791; the average population over the 10-year span is 95,572. The average annual solid waste generation will require 244,186 c.y./year. Therefore the lifespan of the existing landfill, without utilizing off-site borrow, is an estimated 2.4 years. 496  
v. 1

$90,439 \text{ c.y. cover} / \text{yr} = 2.4 \text{ by borrow available} \therefore 334,625 \text{ c.y./yr} = 3.25 \text{ yr}$

In order to maximize the use of the land already set aside for the landfill, we request an amendment to the permit in the form of vertical expansion. To preserve the aesthetics of the site, we do not foresee expanding above the height of the existing trees acting as a buffer to the site. This limits us to approximately 20 feet above the previously approved level.

Phase II - has no volume available now  
 will have 450,200 c.y. additional fill volume

Phase III - has no volume available now  
 will have 571,400 c.y. additional fill volume

Phase IV - Section 1 - has 306,000 c.y. fill volume available now  
 will have 1,147,900 c.y. additional fill volume

Section 2 - has 792,000 c.y. fill volume available now  
 will have 977,900 c.y. additional fill volume

Total volume with addition =	4,245,400 c.y.
Volume for dikes =	671,600 c.y.
Volume for 2' final cover =	283,400 c.y.
Subtotal volume earth =	955,000 c.y.
Remaining volume for fill =	3,290,400 c.y.
Necessary working cover (2.7/1 ratio) =	1,218,667 c.y.
Total volume earth =	2,173,667 c.y.
Remaining volume for solid waste =	2,071,733 c.y.
Estimated lifespan expansion =	8.5 years

*should be 345,000*

This expansion will require 2,173,667 c.y. of earth for final cover, dikes and working cover. A volume of 280,000 c.y. is available in previously approved excavation. Therefore, 1,893,667 c.y. will be required from other areas.

*1,893,667*  
*345,000*

Mr. Jim Coffey  
June 29, 1989  
Page Three

An existing borrow pit is currently under operation in the near vicinity. This site is being investigated as a possible borrow area, based on acceptability of soil and an economical agreement with the owner/operator of the pit. Any offsite borrow will be approved by the Solid Waste Branch of the Division of Health Services.

The completion of Phase II took place prior to the enactment of the presently enforced regulations to ensure the security of the environment. The County foresees possible problems with this site if it is left as is. The intention of our proposal is to improve the compaction of the existing fill while compacting the proposed vertical expansion, then to secure the entire site when closing out.

A majority of the approved area for Phase IV - Section 2 has presently been left undisturbed in order to minimize, for as long as practical, the quantity of land being filled in order to reduce the possible areas for contamination and to maintain the aesthetics and ecology of the area. We propose to utilize the volume of the vertical expansion prior to disturbing and utilizing the remainder of Phase IV - Section 2.

The construction of dikes for the previously approved areas have been performed or in the planning process in eight to fifteen feet lifts. We recommend this same practice to continue in the vertical expansion. *So does that mean you'll use off site borrow - before waste to? In Section 2 too??*

The landfill operation is under the administrative control of the Director of Public Utilities, Haywood Phthisic. The landfill operation and personnel are supervised by R.B. Howell. An existing fenced area at the front of the site controls access to the site.

Other pertinent information is included on the plans. We are enclosing four sets of drawings showing the proposed vertical expansion. Please note that we are submitting the entire set of drawings of the originally planned Phase IV with revised sheets marked accordingly.

We request your approval of the vertical expansion of twenty feet. Should you require any additional information, please contact us.

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