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

James B. Hunt, Jr., Governor
Wayne McDevitt, Secretary
William L. Meyer, Director



November 7, 1997

Mr. Warren Grimes
Solid Waste Manager
Johnston County Department of Public Utilities
Post Office Box 2263
Smithfield, North Carolina 27577

Re: Request to Use the Tarpomatic Product
as Alternative Daily Cover
Johnston County Landfill
Permit No. 51-02

Dear Mr. Grimes:

Your request to use the Tarpomatic product as an alternative daily cover at the referenced site will be considered for approval if you can make a short-term demonstration.

More specifically, Johnston County Landfill may use the Tarpomatic product as a daily cover on a 90-day trial basis. This cover must comply with 15 NCAC .1626 (2) (b) which requires an owner/operator to demonstrate that the alternative cover controls disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment. The alternative daily cover shall not be used more than two consecutive days without placing soil over the previously filled areas and shall cover the working face each time it is used.

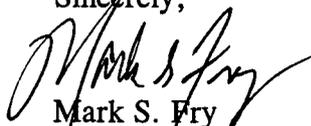
A statement that the alternative daily cover complies with 15 NCAC .1626 (2) (b) will not be considered to be an adequate demonstration. The Solid Waste Section would like to see photos of the alternative daily cover being deployed as well as photos of it in place. Statements in detail of how this daily cover complies with 15 NCAC .1626 (2) (b) as well as any other pertinent information would be helpful.

The Solid Waste Section will periodically inspect the referenced facility during this 90-day trial period to ensure that the alternative daily cover meets the requirements stated above. At the end of this 90-day period if the demonstration is successful and upon approval of the Transition Plan, the permanent use of the alternative daily cover will be granted.

Mr. Warren Grimes
Page Two
November 7, 1997

Should you have any questions, please contact me or Jim Barber at 910-486-1191.

Sincerely,



Mark S. Fry
Waste Management Specialist
Solid Waste Section

MSF/ps

cc: Phil Prete
Jim Coffey
Jim Barber
Terry Dover
Haywood Phthisic
FRO Files - C-51-02 - Johnston County

Johnston County
DEPARTMENT OF PUBLIC UTILITIES
POST OFFICE BOX 2263
SMITHFIELD, N. C. 27577
(919) 989-5075

RECEIVED

JUL 06 1998

**DIVISION OF WASTE MANAGEMENT
FAYETTEVILLE REGIONAL OFFICE**

October 27, 1997

Mr. Mark Fry
DEHNR
225 Green Street
Wachovia Bldg., Suite 601
Fayetteville, NC 28301

Dear Mark:

Pursuant to solid waste management rules 15A NCAC 13B-1626(2b), Johnston County would like permission to demonstrate for Division approval an automated tarping machine for use as an alternative daily cover. The brand name of the machine is Tarpomatic. It consists of a 40' wind up tube with capacity for 4 tarps measuring 40' x 100' each. A brochure is enclosed which provides a more detailed explanation. This machine is already in use in North Carolina at High Point City landfill.

If approval is granted for permanent use after the demonstration period, please amend our operational permit to reflect the approval. We feel that such approval will increase the life of the landfill by saving valuable air space and make it easier to cover trash in inclement weather.

Thank you for your consideration of our request.

Sincerely,

Warren Grimes

Warren Grimes, Solid Waste Manager

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director



August 6, 1997

Mr. Haywood Phthisic
Director of Public Utilities
Johnston County
P.O. Box 2263
Smithfield, NC 27577

Re: Permit No. 51-02, Permit to Operate the Johnston County Landfill Facility

Dear Mr. Phthisic,

The Solid Waste Section has reviewed the submittal documenting construction of the Johnston County Subtitle D Landfill. The Section has determined that Johnston County and the project engineer have met the pre-operative conditions of the Permit-to-Construct, issued December 22, 1995. In accordance with G.S. 130A-294, Phase 5 of the Johnston County Landfill is approved to receive waste. Johnston county must meet the terms and conditions of the permit-to-construct and receive approval from the Section to operate additional cells or phases within the facility. The facility permit is effective until August 6, 2002, and the facility must amend the permit as set forth in the conditions of Part 1: Permit-to-Construct, #51-02, issued on December 22, 1995 for continued operation or construction of phases not approved in the effective permit to construct. The provisions for permit renewal may be found in 15A NCAC 13B .1603(a)(2).

15A NCAC 13B Section.1600 describes the complete requirements for this facility. Rule .1604 establishes permit conditions for all new and existing MSWLF Facilities. This facility must conform to the general standards for operation [.1626], closure and post-closure [.1627], and groundwater monitoring [.1630 - .1637]. Specific requirements for this facility are set forth in the Conditions of the Permit-to- Construct and the Permit-to-Operate.

Additional Approved Plan Documents

Construction documents submitted with the CQA report have been filed in the permitting record. Supplemental to the plans approved in the Permit-to-Construct, additional documents and correspondence included as part of the Division Approved Plan are listed in Attachment 3 - Approved Documents, of the permit to operate.

This Permit-to-Operate has also been arranged so that it contains the permit conditions for all of the facility MSW activities. In general, the new facility permit does not reiterate

P.O. Box 27687,
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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 or groundwater monitoring plans.

Please note General Conditions 3, which has been changed slightly to reflect new changes to the solid waste statutes. Permit Condition 13 also includes the additional parameters of sulfates, nitrates, and phosphates for the semi-annual leachate sampling program.

The Solid Waste Management Specialist responsible for this facility is Mr. Mark Fry. Mr. Fry may be reached at (910) 486-1191. Johnston County should contact the Solid Waste Section when they are ready to begin using the new cell, so that a site visit may be scheduled if needed. Should you have any questions regarding the terms of this approval, please contact me at (919) 733-0692, extension 343.

The Solid Waste Section encourages Johnston County to take an aggressive stance to recycle, reuse and reduce the amount of solid waste disposed of. We look forward to seeing the facility in operation.

Sincerely,
Division of Waste Management

Edward F. Mussler, III, P.E.
Environmental Engineer
Solid Waste Section

cc. C.T. Clayton, McKim & Creed
Terry Dover

Mark Fry
Jim Barber

Files

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State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director



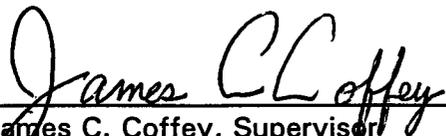
PERMIT 51-02
Part 2 - Permit to Operate
Date of Original Issue: AUGUST 6, 1997
Page 1

SOLID WASTE PERMIT

JOHNSTON COUNTY

is hereby issued a permit to operate a
MUNICIPAL SOLID WASTE LANDFILL

located on S.R. 1503, 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 facility is located and described by the legal description of the site or the map contained within the approved application.


James C. Coffey, Supervisor
Permitting Branch
Solid Waste Section

ATTACHMENT 3

CQA Approved Documents

1. Survey "Map for Johnston County" prepared by L.Dennis Lee, Registered Land Surveyor #1-1544, December 28, 1995.
2. *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. McKim & Creed Project No.0358-0060.OR. March 1997. 3 Volumes.
3. *Johnston County Subtitle D Landfill CQA, ASBUILTS, and Revised Engineering Plan.* Prepared by: McKim & Creed Engineers, P.A., Cary, North Carolina. McKim & Creed Project No.0358-0060.OR. March 1997. 14 sheets.
4. *Johnston County Landfill, Phase 5, Prmit 51-02, Johnston County, North Carolina, Survey and As-Built Plans.* Prepared and Certified By: F. Donald Lawrence, NCRLS No. L-1290, Monroe, N.C., Provided by: Ground Improvement Techniques, Inc., Contractor, Submitted by: McKim & Creed. March 1997. 7 sheets.

ATTACHMENT 4

Conditions of Permit to Operate

GENERAL CONDITIONS

1. This permit is effective for five years from the issuance date of the permit to operate or until the contours as indicated on sheet E-5 of Document 4, Attachment 1 are reached, whichever occurs first.
2. This facility is approved for a five year permitted disposal capacity of approximately 870,000 cubic yards, consistent with the final contours as shown on sheet E-5 of Document 4, Attachment 1. This capacity is based on an average annual disposal rate of approximately 78,000 tons (approximately 250 tons per day based on 312 operating days per year) facility total as set forth in Document 1, Attachment 1.
3. The municipal solid waste landfill facility is permitted to receive solid waste generated by and in the County of Johnston, North Carolina, as defined in 15A NCAC 13B .0101(36), except where prohibited by North Carolina General Statutes Article 9 of Chapter 130A, and rules adopted by the Commission for Health Services. The owner or operator of the landfill facility shall not knowingly dispose 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. Closure or partial closure of any Municipal Solid Waste Landfill unit shall be in accordance with the approved documents and 15 NCAC 13B .1629. The final closure plan shall be submitted at least 90 days prior to commencement of any closure activities. Closure and Post-closure plans, including Financial Instruments shall be updated annually pursuant to 15A NCAC 13B .1628.
5. In the event of conflicts between this Permit to Operate and previously issued conditions, the conditions of this Permit to Operate shall supercede previously issued conditions.
6. Co-disposal of non-liquid, non-hazardous wastewater treatment sludges shall be in accordance with 15A NCAC 13B .1626(e).

OPERATION CONDITIONS

7. The landfill unit shall conform to all operating procedures described in the approved plans, 15A NCAC 13B .1626, and the conditions specified herein.

8. All pertinent landfill operating personnel shall receive training and supervision necessary to properly operate this landfill. Specifically, training must be provided in operational procedures that will prevent damage to the liner and leachate collection and removal systems.
9. Additional conditions and revisions of the approved documents or changes during operation of the landfill require approval by the North Carolina Solid Waste Section.
10. The use of leachate recirculation as a leachate management tool requires approval, by the Solid Waste Section, prior to implementation. Requests for leachate recirculation approval must include a comprehensive management plan developed according to Section guidelines and which is consistent with the approved operation plan. Plans which are approved by the Section will be incorporated into, and made a part of, the approved documents found in Attachment 3.
 - a. 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 shall 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.
11. 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 comprehensive use and demonstration of effectiveness plan developed according to Section guidelines and consistent with the approved operation plan. Plans which are approved by the Section will be incorporated into, and made a part of, the approved documents found in Attachment 3.
12. On or before August 1 of each year, the permittee shall report the amount of waste received (in tons) at this facility and disposed of in the landfill to the Solid Waste Section, on forms prescribed by the Section. This report shall include the following information:
 - a. The reporting period shall be for the previous year, beginning July 1 and ending on June 30;
 - b. The amount of waste received and landfilled in tons, compiled on a monthly basis and by county or transfer station of origin; and

- c. The completed report shall be forwarded to the Regional Waste Management Specialist for the facility. A copy of the completed report shall be forwarded to the County Manager of each county from which waste was received.
13. Untreated leachate shall be sampled and analyzed at least semi-annually concurrently with the ground and surface water sampling. The leachate shall be analyzed for all Appendix I constituents, pH, specific conductance, BOD, COD, sulphates, nitrates, and phosphates. Test results shall be submitted to the Section along with ground and surface water test results. In the event leachate is recirculated, additional leachate sampling may be required.

GROUND AND SURFACE WATER MONITORING CONDITIONS

14. Ground water quality at this facility is subject to the "Classifications and Water Quality Standards Applicable To The Groundwaters of North Carolina", 15A NCAC 2L. This includes, but is not limited to, the provisions for detection monitoring, assessment, and corrective action.
15. This facility is subject to the ground water monitoring requirements of 15A NCAC 13B .1630 through .1637.
16. The four independent samples which comprise the initial baseline sampling event shall be collected from each ground water monitoring well and the report shall be submitted to the Section within six months after issuance of the Permit to Operate.
17. A readily accessible unobstructed path shall be cleared and maintained so that four-wheel drive vehicles may access monitoring wells locations at all times.
18. 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 shall be kept as part of the permanent facility record.
19. Records of all ground-water, surface water and leachate analytical data shall be kept as part of the permanent facility record.
20. Ground water monitoring wells, surface water sampling locations, untreated leachate, must be sampled for Appendix I constituents at least semi-annually according to the specifications outlined in the approved water quality monitoring plan, 15A NCAC 13B .1630 - .1637, and the current policies and guidelines of the Section in effect at the time of sampling.

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

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Johnston County Finance

POST OFFICE BOX 1049
SMITHFIELD, NC 27577

John R. Massey
Director of Finance
(919) 989-5110
Fax (919) 989-5179

July 2, 1997

Department of Environment, Health
and Natural Resources
Solid Waste Section
P. O. Box 27687
Raleigh, NC 27611-7687

51-01
and 51-02

Gentlemen:

I am the chief financial officer of Johnston County. 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.1628 (e) (1) (F).

This unit of local government is the owner or operator of the following facility for which financial assurance for closure, post-closure, or corrective action is demonstrated through the financial test specified in 15A NCAC 13B.1628 (e) (1) (F). The current closure, post-closure, or corrective action cost estimates covered by test are shown for each facility.

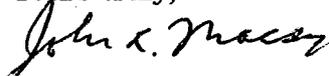
Johnston County Landfill - Permit # 51-01
P. O. Box 1049
Smithfield, NC 27577

Closure cost of \$5,020,400 and post-closure of \$9,039,000 are on enclosed sheets. This is for the old and new landfill.

The fiscal year of this unit of local government ends on June 30, 1997. The figures for following items marked with an asterisk are derived from this unit of local government's Annual Financial Information Report (AFIR) for the latest completed fiscal year, ended June 30, 1996.

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 operating 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.

Yours truly,



John R. Massey
Director of Finance

RATIO INDICATORS OF FINANCIAL STRENGTH

1. Sum of current closure, post-closure and corrective action cost estimates [total of all cost estimates shown in the paragraphs above]	\$...14,059,400
*2. Sum of cash and investments (AFIR Part 7)	\$.....28,554,378
*3. Total expenditures (AFIR Part 4 Columns a & b and Part 5 for municipalities or Part 5 excluding educational capital outlays for counties)	\$.....68,730,659
*4. Annual debt service (AFIR Part 4 Section I)	\$.....3,187,681
5. Assured environmental costs to demonstrate financial responsibility in the following amounts under Division rules:	
MSWLF under 15A NCAC 13B .1600	\$...14,059,400
Hazardous waste treatment, storage and disposal facilities under 15A NCAC 13A .0009 and .0010	\$...N/A
Petroleum underground storage tanks under 15A NCAC 2N .0100 - .0800	\$...N/A
Underground Injection Control System facilities under 15A NCAC 2D .0400 and 15A NCAC 2C .0200	\$...N/A
PCB commercial storage facilities under 15A NCAC 20 .0100 and 15A NCAC 2N .0100	\$.....N/A
Total assured environmental costs	\$.....14,059,400
*6. Total Annual Revenue (AFIR Part 2)	\$...110,691,946

Circle either "yes" or "no" to the following questions.

- | | | |
|---|--------|-----|
| 7. Is line 5 divided by line 6 less than or equal to 0.43? | yes/no | Yes |
| 8. Is line 2 divided by line 3 greater than or equal to 0.05? | yes/no | Yes |
| 9. Is line 4 divided by line 3 less than or equal to 0.20? | yes/no | Yes |

CLOSURE COST SUMMARY

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
A. Final Cap System				
1. Application of Soil Cap (2')	131,800	CY	\$4.00	\$527,200
2. Test Pits (Check Cover)	100	EA	\$50.00	\$5,000
3. Prepare Closure Documentation	1	LS	\$20,000	\$20,000
B. Sedimentation and Erosion Control Devices (Existing facilities are in place)				
	1	LS	\$50,000	\$50,000
C. Final Landscaping				
1. Seeding , Fertilizing, Mulching	58	ACRES	\$2,400	\$139,200
D. Mobilization/Demobilization				
	1	LS	\$30,000	\$30,000
E. Management/Assurance				
1. Engineering Construction Management	1	LS	\$50,000	\$50,000
2. Construction Quality (Report, As-Built Dwgs)	1	LS	\$20,000	\$20,000
F. Administration				
	1	LS	\$10,000	\$10,000
G. Emergency Corrective Action				
	1	LS	\$1,500,000	\$1,500,000
Closure Subtotal				\$2,351,400

POST-CLOSURE COST SUMMARY

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
A. Install Monitoring Systems and Baseline Sampling				
1. Install Groundwater Monitoring Wells	4	EA	\$1,200	\$4,800
2. Install Gas Monitoring System	6	EA	\$1,200	\$7,200
3. Base Sampling of Groundwater (4 events) and Statistical Analysis (3 locations)	1	LS	\$15,000	\$15,000
	Subtotal A: Monitoring System & Base Sampling			\$27,000
B. Annual Costs (30 years)				
1. Maintain Final Cover	1	LS	\$10,000	\$10,000
2. Semiannual Groundwater Sampling (18 locations)	36	EA	\$1,200	\$43,200
3. Semiannual Surface Water Sampling (2 locations)	4	EA	\$1,200	\$4,800
4. Quarterly Explosive Gas Monitoring (6 locations)	24	EA	\$100	\$2,400
5. Semiannual Site Inspections	1	LS	\$3,000	\$3,000
6. Recordkeeping	1	LS	\$5,000	\$5,000
7. Maintain/Replace Monitoring Wells	1	LS	\$2,000	\$2,000
8. Fees (License, Inspection/Regulatory Charges)	1	LS	\$1,000	\$1,000
9. Administration	1	LS	\$2,000	\$2,000
	Subtotal B: Annual Costs			\$73,400
	Subtotal C: Annual Costs x 30 years			\$2,202,000
	Subtotal A			\$27,000
	Subtotal C			\$2,202,000
	Post-Closure Subtotal			\$2,229,000

JOHNSTON COUNTY
PHASE 5
CLOSURE COST SUMMARY

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
A: FINAL CAP SYSTEM				
1. GEONET FOR GAS COLLECTION (OPTIONAL)	808,000	SF	\$ 0.48	\$ 387,840
2. SOIL	90,347	CY	\$ 2.15	\$ 194,246
3. LLDPE GEOMEMBRANE	808,000	SF	\$ 0.50	\$ 404,000
4. GEONET FOR DRAINAGE	808,000	SF	0.48	\$ 387,840
5. CQA TESTING	1	LS	\$ 30,000	\$ 30,000
6. LEACHATE RECIRCULATION WELLS	250	WELL	\$ 500	\$ 125,000
7. LEACHATE RECIRCULATION SYSTEM -includes pump, force main, and peripherals	1	LS	\$ 120,000	\$ 120,000
B: SEDIMENT AND EROSION CONTROL -Assume erosion control measures already in-place				
C: METHANE GAS COLLECTION SYSTEM				
1. PIPE AND WELLS	18	ACRES	\$ 2,500	\$ 45,000
2. FLARE/BLOWER	1	LS	\$ 100,000	\$ 100,000
D. FINAL LANDSCAPING -Includes seeding, fertilizing, and mulching				
	18	ACRES	\$ 2,500	\$ 45,000
D: CONTRACTOR MOBILIZATION				
	1	LS	\$ 20,000	\$ 20,000
CLOSURE SUBTOTAL				\$ 1,858,926
CONTINGENCY				\$ 183,000
TECHNICAL SERVICES FOR DESIGN AND PERMITTING				\$ 180,000
ADMINISTRATION				\$ 10,000
CLOSURE TOTAL ANNUAL COST (1997)				\$ 2,200,000
ADJUSTMENT FOR INFLATION (F/P) = (1997 COST)(1 + I) ⁿ Assume closure to occur in 2003, therefore, n = years = 6 Assume i = inflation rate = 3%, n = years = 6				
CLOSURE TOTAL ANNUAL COST (2003)				\$ 2,627,000
Note: Cost will be adjusted annually to reflect inflation rate fluctuations during the 30 yr. post-closure period				

JOHNSTON COUNTY
PHASE 5
POST-CLOSURE COST SUMMARY

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
A: INSPECTION	1	LS	\$ 3,000	\$ 3,000
B: RECORDKEEPING	1	LS	\$ 5,000	\$ 5,000
C: MONITORING				
1. GAS WELLS SAMPLED QUARTERLY (9 WELLS)	36	SAMPLES	\$ 100	\$ 3,600
2. GROUNDWATER WELLS SAMPLED SEMIANNUALLY (14 WELLS)	28	SAMPLES	\$ 550	\$ 15,400
3. SURFACE WATER SAMPLED SEMIANNUALLY (3 LOCATIONS)	6	SAMPLES	\$ 550	\$ 3,300
4. LEACHATE SAMPLED SEMIANNUALLY (2 LOCATIONS)	4	SAMPLES	\$ 550	\$ 2,200
D: LEACHATE COLLECTION, TREATMENT, & DISPOSAL				
1. COLLECTION/PRETREATMENT	1	LS	\$ 30,000	\$ 30,000
1a. DISCHARGE TO CWWTP	20,000	1,000 GAL.	\$ 2	\$ 30,000
2. ALTERNATIVELY TO 1 & 1a, COLLECTION/RECIRCULATION	1	LS	\$ 60,000	\$ 60,000
E: MAINTENANCE (PREVENTIVE/CORRECTIVE)				
1. LEACHATE MANAGEMENT SYSTEM ANNUAL CLEANING	1	LS	\$ 1,680	\$ 1,680
2. REPAIR/REPLACE GAS WELLS, PIPING, SUMPS, BLOWERS	1	LS	\$ 18,000	\$ 18,000
3. MAINTAIN/REPLACE MONITORING WELLS	1	LS	\$ 2,000	\$ 2,000
4. MAINTAIN FINAL COVER	1	LS	\$ 18,000	\$ 18,000
F. FEES (LISCENSE, INSPECTION/ REGULATORY CHARGES)	1	LS	\$ 1,000	\$ 1,000
G. ADMINISTRATION	1	LS	\$ 2,000	\$ 2,000
H. MISCELLANEOUS LABOR	1	LS	\$ 10,000	\$ 10,000
POST-CLOSURE SUBTOTAL				\$ 146,000
CONTINGENCY				\$ 15,000
TECHNICAL SERVICES FOR DESIGN AND PERMITTING				\$ 25,000
ADMINISTRATION				\$ 4,000
POST CLOSURE TOTAL ANNUAL COST (1997)				\$ 190,000
ADJUSTMENT FOR INFLATION (F/P) = (1997 COST)(1 + I) ⁿ Assume closure to occur in 2003, therefore, n = years = 6 Assume i = inflation rate = 3%, n = years = 6				
POST CLOSURE TOTAL ANNUAL COST (2003)				\$ 227,000
Note: Cost will be adjusted annually to reflect inlation rate fluctuations during the 30 yr. post-closure period				

(new)

ED -
THESE ARE
YOUR COPIES.
THE OLD ESTIMATES
ARE ALSO ATTACHED.
LEE



McKIM & CREED

April 22, 1997

M&C0358-0075.0R(10)

Mr. John Massey
Johnston County Finance Department
PO Box 1049
Smithfield, NC 27577

ENGINEERS

SURVEYORS

ARCHITECTS

PLANNERS

**RE: Estimated Cost Opinion for Closure and Post-Closure
Johnston County Landfill - Phase 5**

Dear Mr. Massey:

As per your request, enclosed please find the revised Johnston County Phase 5 Closure and Post-Closure probable cost opinion.

This probable cost opinion should be submitted to the State in accordance with the Financial Assurance Rule (NCAC 15A: .1628), and using the Local Government Financial Test (NCAC 15A: .1628(e)(1)(F)). There are three components of this financial test to be submitted to the State. The enclosed probable cost opinions will satisfy the Public Notice Component of these rules.

Should you have any questions concerning this information, you may contact me at 1 (800) 829-4559.

Sincerely,

McKim & Creed Engineers, PA

Tom Wainwright, P.E.
Project Engineer

SUITE 117

BUILDING I

5625 DILLARD ROAD

CARY, NC 27511

PHONE 919/233-8091

FAX 919/233-8031

cc. C.T. Clayton, P.E.
C.J. Poran, P.E. - ENSOL
Haywood Phthisic, JC

Enclosure

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**JOHNSTON COUNTY
PHASE 5
POST-CLOSURE COST SUMMARY**

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
A: INSPECTION	1	LS	\$ 3,000	\$ 3,000
B: RECORDKEEPING	1	LS	\$ 5,000	\$ 5,000
C: MONITORING				
1. GAS WELLS SAMPLED QUARTERLY (9 WELLS)	36	SAMPLES	\$ 100	\$ 3,600
2. GROUNDWATER WELLS SAMPLED SEMIANNUALLY (14 WELLS)	28	SAMPLES	\$ 550	\$ 15,400
3. SURFACE WATER SAMPLED SEMIANNUALLY (3 LOCATIONS)	6	SAMPLES	\$ 550	\$ 3,300
4. LEACHATE SAMPLED SEMIANNUALLY (2 LOCATIONS)	4	SAMPLES	\$ 550	\$ 2,200
D: LEACHATE COLLECTION, TREATMENT, & DISPOSAL				
1. COLLECTION/PRETREATMENT	1	LS	\$ 30,000	\$ 30,000
1a. DISCHARGE TO CWWTP	20,000	1,000 GAL.	\$ 2	\$ 30,000
2. ALTERNATIVELY TO 1 & 1a, COLLECTION/RECIRCULATION	1	LS	\$ 60,000	\$ 60,000
E: MAINTENANCE (PREVENTIVE/CORRECTIVE)				
1. LEACHATE MANAGEMENT SYSTEM ANNUAL CLEANING	1	LS	\$ 1,680	\$ 1,680
2. REPAIR/REPLACE GAS WELLS, PIPING, SUMPS, BLOWERS	1	LS	\$ 18,000	\$ 18,000
3. MAINTAIN/REPLACE MONITORING WELLS	1	LS	\$ 2,000	\$ 2,000
4. MAINTAIN FINAL COVER	1	LS	\$ 18,000	\$ 18,000
F. FEES (LISCENSE, INSPECTION/ REGULATORY CHARGES)	1	LS	\$ 1,000	\$ 1,000
G. ADMINISTRATION	1	LS	\$ 2,000	\$ 2,000
H. MISCELLANEOUS LABOR	1	LS	\$ 10,000	\$ 10,000
POST-CLOSURE SUBTOTAL				\$ 146,000
				\$ 15,000
CONTINGENCY				\$ 25,000
TECHNICAL SERVICES FOR DESIGN AND PERMITTING				\$ 4,000
ADMINISTRATION				\$ 190,000
POST-CLOSURE TOTAL ANNUAL COST (1997)				\$ 190,000
ADJUSTMENT FOR INFLATION (F/P) = (1997 COST)(1 + I) ⁿ Assume closure to occur in 2003, therefore, n = years = 6 Assume i = inflation rate = 3%, p = years = 6				
POST-CLOSURE TOTAL ANNUAL COST (2003)				\$ 227,000
Note: Cost will be adjusted annually to reflect inflation rate fluctuations during the 30 yr. post-closure period				x 30

6,810,000

**JOHNSTON COUNTY
PHASE 5
CLOSURE COST SUMMARY**

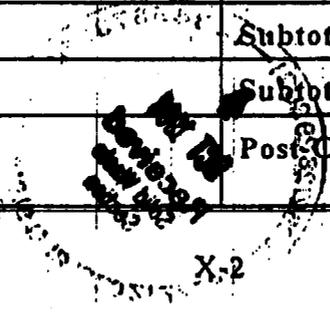
ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
A: FINAL CAP SYSTEM				
1. GEONET FOR GAS COLLECTION (OPTIONAL)	808,000	SF	\$ 0.48	\$ 387,840
2. SOIL	90,347	CY	\$ 2.15	\$ 194,246
3. LLDPE GEOMEMBRANE	808,000	SF	\$ 0.50	\$ 404,000
4. GEONET FOR DRAINAGE	808,000	SF	\$ 0.48	\$ 387,840
5. CQA TESTING	1	LS	\$ 30,000	\$ 30,000
6. LEACHATE RECIRCULATION WELLS	250	WELL	\$ 500	\$ 125,000
7. LEACHATE RECIRCULATION SYSTEM -includes pump, force main, and peripherals	1	LS	\$ 120,000	\$ 120,000
B: SEDIMENT AND EROSION CONTROL -Assume erosion control measures already in-place				
C: METHANE GAS COLLECTION SYSTEM				
1. PIPE AND WELLS	18	ACRES	\$ 2,500	\$ 45,000
2. FLARE/BLOWER	1	LS	\$ 100,000	\$ 100,000
D. FINAL LANDSCAPING -Includes seeding, fertilizing, and mulching				
	18	ACRES	\$ 2,500	\$ 45,000
E: CONTRACTOR MOBILIZATION				
	1	LS	\$ 20,000	\$ 20,000
CLOSURE SUBTOTAL:				\$ 1,859,000
CONTINGENCY				\$ 185,900
TECHNICAL SERVICES FOR DESIGN AND PERMITTING				\$ 180,000
ADMINISTRATION				\$ 10,000
CLOSURE TOTAL ANNUAL COST (1997)				\$ 2,234,900
ADJUSTMENT FOR INFLATION (F/P) = (1997 COST)(1 + i) ⁿ Assume closure to occur in 2003, therefore, n = years = 6 Assume i = inflation rate = 3%, n = years = 6				
CLOSURE TOTAL ANNUAL COST (2003)				\$ 2,689,000

CLOSURE COST SUMMARY

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
A. Final Cap System				
1. Application of Soil Cap (2')	131,800	CY	\$4.00	\$527,200
2. Test Pits (Check Cover)	100	EA	\$50.00	\$5,000
3. Prepare Closure Documentation	1	LS	\$20,000	\$20,000
B. Sedimentation and Erosion Control Devices (Existing facilities are in place)				
	1	LYS	\$50,000	\$50,000
C. Final Landscaping				
1. Seeding, Fertilizing, Mulching	58	ACRES	\$2,400	\$139,200
D. Mobilization/Demobilization				
	1	LS	\$30,000	\$30,000
E. Management/Assurance				
1. Engineering Construction Management	1	LS	\$50,000	\$50,000
2. Construction Quality (Report, As-Built Dwgs)	1	LS	\$20,000	\$20,000
F. Administration				
	1	LS	\$10,000	\$10,000
G. Emergency Corrective Action				
	1	LS	\$1,500,000	\$1,500,000
Closure Subtotal				\$2,351,400

POST-CLOSURE COST SUMMARY

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
A. Install Monitoring Systems and Baseline Sampling				
1. Install Groundwater Monitoring Wells	4	EA	\$1,200	\$4,800
2. Install Gas Monitoring System	6	EA	\$1,200	\$7,200
3. Base Sampling of Groundwater (4 events) and Statistical Analysis (3 locations)	1	LS	\$15,000	\$15,000
Subtotal A: Monitoring System & Base Sampling				\$27,000
B. Annual Costs (30 years)				
1. Maintain Final Cover	1	LS	\$10,000	\$10,000
2. Semiannual Groundwater Sampling (18 locations)	36	EA	\$1,200	\$43,200
3. Semiannual Surface Water Sampling (2 locations)	4	EA	\$1,200	\$4,800
4. Quarterly Explosive Gas Monitoring (6 locations)	24	EA	\$100	\$2,400
5. Semiannual Site Inspections	1	LS	\$3,000	\$3,000
6. Recordkeeping	1	LS	\$5,000	\$5,000
7. Maintain/Replace Monitoring Wells	1	LS	\$2,000	\$2,000
8. Fees (License, Inspection/Regulatory Charges)	1	LS	\$1,000	\$1,000
9. Administration	1	LS	\$2,000	\$2,000
Subtotal B: Annual Costs				\$73,400
Subtotal C: Annual Costs x 30 years				\$2,202,000
Subtotal A				\$27,000
Subtotal C				\$2,202,000
Post-Closure Subtotal				\$2,229,000





April 2, 1997

M&C 0358-0060.OR(10)

MCKIM & CREED

ENGINEERS

SURVEYORS

ARCHITECTS

PLANNERS

Mr. John Holly
NCDEHNR, Division of Land Quality
3800 Barrett Drive
P.O. Box 27687
Raleigh, NC 27611

**RE: REVISIONS TO EROSION AND SEDIMENT CONTROL PLAN
JOHNSTON COUNTY SUBTITLE D LANDFILL, PHASE 5**

Dear Mr. Holly:

Attached, please find a copy of the as-built revisions of the Erosion and Sediment Control Plan (Plan) and drawings for Phase 5 of the Johnston County Subtitle D Landfill Facility. The original PLAN was dated September 27, 1995. The attached revisions include the following:

- Appendix I: Revised computations for Phase 5
- Appendix II: Plans AB-1, AB-2, and E-7

These revisions are included in the Construction Quality Assurance and As-Built Certification for Permit to Operate, Volume 1, Section I, which was submitted to the NCDEHNR, Solid Waste Section for approval. The total area disturbed during the construction of Phase 5 and ancillary structures is unchanged with respect to the letter dated September 27, 1995.

If you have any questions or comments please call me at 233-8091.

Sincerely,

MCKIM & CREED ENGINEERS, P.A.

Thomas J. Wainwright, P.E.
Project Engineer



/attachments

cc (letter only):

- Jim Coffey (SWS NCDEHNR)
- Haywood Phthisic (Johnston County)
- Warren Grimes (Johnston County)
- C.T. Clayton, P.E. (McKim & Creed)
- C.J. Poran, P.E. (ENSOL)

SUITE 117

BUILDING I

5625 DILLARD ROAD

CARY, NC 27511

PHONE 919/233-8091

FAX 919/233-8031

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director



February 18, 1997

Mr. Tom Wainwright, PE
McKim & Creed Engineers, P.A.
5625 Dillard Road, Suite 117
Cary, NC 27511

Re: Variance From Operational Cover Specifications, Johnston County Landfill
Permit Number 51-02

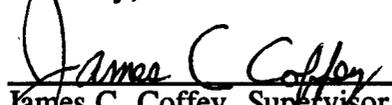
Dear Mr. Wainwright,

The Division of Waste Management, the Solid Waste Section (Section) is in receipt of your letter of 11 February, 1997. This letter requests that the project specifications be amended to allow a variation in the operational cover specifications of the project. Specifically it is proposed that an emulsified asphalt be sprayed in a portion of Subcell 1 to compensate for use of a cover material that is out of specification with the projects requirements.

The Section has reviewed the proposed modification to the approved plan. Pursuant to Permit Number 51-02, permit condition 9, the Section has reviewed the changes and hereby accepts them.

Field changes or other deviations from the approved plan, should be included on the as-built drawings and properly identified in the final CQA report as required by the plan. If you have any questions or need additional assistance, please contact the Section.

Sincerely,


James C. Coffey, Supervisor
Permitting Branch
Solid Waste Section

cc: P. Haywood, Johnston County
Terry Dover, SWS
Jim Barber, SWS



February 11, 1997

M&C 0358-0060.OR(CQAAC)

Mr. Ed Mussler, PE
Solid Waste Section
NCDEHNR
P O Box 27687
Raleigh, NC 27611-7687

ENGINEERS

SURVEYORS

ARCHITECTS

PLANNERS

**RE: VARIANCE FROM OPERATIONAL COVER SPECIFICATIONS
JOHNSTON COUNTY LANDFILL, PERMIT 51-02**

Dear Ed:

Pursuant to our letter dated January 8, 1997 and your INTERNET e-mail response dated January 15, 1997 please review the enclosed material safety data and technical specifications of the proposed emulsified asphalt (EA) CRS-2 as received from the contractor. Please be advised on the following regarding this proposed EA application:

- a. It is planned to apply this EA only in Subcell 1 (the southern-most) of the landfill.
- b. We hereby certify that the proposed change will not affect the design or construction of the unit.
- c. Immediately prior to waste placement in the sprayed area, the surface will be prepared by running a bulldozer with low contact pressure (such as a Caterpillar D-6). The bulldozer track penetration will break the EA surface.

Your prompt response will be greatly appreciated. Please do not hesitate to contact me at 233-8091 if you have any questions.

Sincerely,

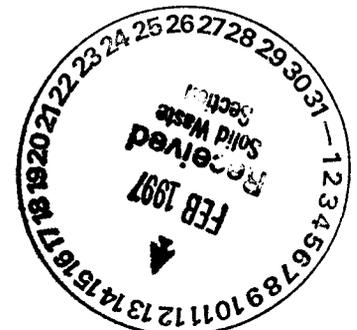
MCKIM & CREED ENGINEERS, P.A.

Tom Wainwright, PE
Project Engineer



Enclosure: Contractor's EA data

cc: C.T. Clayton (McKim & Creed)
C. J. Poran (ENSOL)



SUITE 117

BUILDING I

5625 DILLARD ROAD

CARY, NC 27511

PHONE 919/233-8091

FAX 919/233-8031

Material Safety Data Sheet
 May be used to comply with
 OSHA's Hazard Communication Standard,
 29 CFR 1910.1200. Standard must be
 consulted for specific requirements.

U.S. Department of Labor
 Occupational Safety and Health Administration
 (Non-Mandatory Form)
 Form Approved
 OMB No. 1218-0072



IDENTITY (As Used on Label and List) Asphalt Emulsion CRS-2 Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name SEACO, INC.	Emergency Telephone Number (803) 799-5335
Address (Number, Street, City, State, and ZIP Code) 2700 William H. Tuller Dr.	Telephone Number for Information (803) 799-5335
City, State, and ZIP Code Columbia, S.C. 29205	Date Prepared 6/14/89
Signature of Preparer (optional)	

Section II - Hazardous Ingredients/Identify Information

Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	CAS NO
Petroleum Asphalt		5 mg/m ³ - (fumes)		8052-42-

Post-It [®] Fax Note	7671	Date	2/10	# of pages	4
To	Pat Palusio	From	Phil Martin		
Co./Dept.	G I T	Co.			
Phone #		Phone #	910-578-3100		
Fax #	919-989-6473	Fax #	910-578-5799		

Section III - Physical/Chemical Characteristics

Boiling Point	100C	212F	Specific Gravity (H₂O = 1)	0.97-1.0
Vapor Pressure (mm Hg)	approx.	22	Melting Point	N.A.
Vapor Density (Air = 1)		> 1.0	Evaporation Rate (Butyl Acetate = 1)	N.I.A.

Solubility in Water to some extent
Appearance and Odor dark, low to semi-viscous liquid, minimal odor

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) N.A. as an emulsion	Flammable Limits	LEL N.I.A.	UEL N.I.A.
---	-------------------------	----------------------	----------------------

Extinguishing Media
 If water is evaporated, treat as with asphalt/oil fire - use dry chemical, foam, CO₂
Special Fire Fighting Procedures
 Do not enter confined fire area without full bunker gear and NIOSH approved self-contained breathing apparatus

Unusual Fire and Explosion Hazards
 Emulsion may foam if heated to 212°F. If materials in excess of 212°F are added to emulsion, possible foaming may occur

IX SPECIAL PRECAUTIONS

PRECAUTIONARY STATEMENTS

DO NOT TAKE INTERNALLY. KEEP UNAUTHORIZED PERSONNEL AWAY FROM MATERIAL.

OTHER HANDLING AND STORAGE REQUIREMENTS

KEEP CONTAINER CLOSED WHEN NOT IN USE.

WEATHER. SHELF LIFE 1 YEAR. MAY SOLIDIFY ON EXPOSURE TO COLD WEATHER.

ADDITIONAL REGULATORY CONCERNS

FEDERAL: NONE KNOWN

STATE REGULATIONS

NONE KNOWN

OTHER REGULATIONS

NONE KNOWN

PREPARED BY: Michael H. Tuller

TITLE: VICE PRESIDENT

COMPANY: Seaco, Inc.

ADDRESS: P.O. Box 5227

Columbia, S.C. 29250

TO THE BEST OF OUR KNOWL-
THE ABOVE IS ACCURATE AN
FROM ERRORS. SHOULD ERR
EXIST, WE WILL NOT BE HE
LIABLE FOR SAME.

Section V -- Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	

Incompatibility (Materials to Avoid) Strong oxidizers

Hazardous Decomposition or Byproducts
 If burning, carbon monoxide, hydrogen sulfide, aldehydes & other compounds may form

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	Y	

Section VI -- Health Hazard Data

Amount of Exposure ^{Inhalation} see 2 lines below ^{Skin} see 3 lines below ^{Ingestion} relatively non-toxic

Health Hazards (Acute and Chronic)
 Not expected if proper safety precautions are followed

Inhalation - continued exposure may lead to nausea, dizziness, headache

Skin - thermal burns from hot emulsion. Repeated contact may cause dermatitis

AS asphalt is the major ingredient in an asphalt emulsion, & since some asphalts may possess weak carcinogenic activity, good personal hygiene should be practiced. Inter-

mittant contact with the asphalt portion is not expected to have serious health effects. In the emulsi state, asphalt contact is minimal

Medical Conditions Generally Aggravated by Exposure N.I.A.

Emergency and First Aid Procedures

(Skin: wash with soap & water or hand cleaner) (Eyes: flush with water - call physician immediately) (Ingestion: consult physician)

Section VII -- Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled

Dike or absorb emulsified asphalt - earth, sand or saw dust make good absorbents. Contact local authorities if emulsified asphalt enters sewer or water

Waste Disposal Method

Dispose of in accordance with local, state or federal regulations

Precautions to Be Taken in Handling and Storage

Cover face and skin when opening tanks or drums in case emulsified asphalt is under pressure. Make sure heaters are fully submerged in liquid.

Other Precautions

AVOID pressurizing, torching, welding, grinding empty containers. Do not expose empty containers to heat, sparks, or any type of ignition.

Section VIII -- Control Measures

Respiratory Protection (Specify Type)

Not required under normal conditions

Ventilation	Local Exhaust	Use if in enclosed area	Special
	Mechanical (General)		Other

Protective Clothing

Use insulated gloves to prevent thermal burn

Eye Protection

Use face shield/goggles

Other Protective Clothing or Equipment

Recommend long sleeve shirts & full-length pants

Work/Hygiene Practices

Use good practice associated with any thermally hot material



McKIM & CREED

January 8, 1997

M&C 0358-0060.OR(CQAAC)

Mr. Ed Mussler, PE
Solid Waste Section
NCDEHNR
P O Box 27687
Raieigh, NC 27611-7687

ENGINEERS

SURVEYORS

ARCHITECTS

PLANNERS

**RE: VARIANCE FROM OPERATIONAL COVER SPECIFICATIONS
JOHNSTON COUNTY LANDFILL, PERMIT 51-02**

Dear Ed:

Pursuant to your conversations yesterday with Dr. C.J. Poran, please review the following variance from the operational cover (OC) specifications as per Section J Page IV-J1, Volume 1 of 2 of the approved Permit-to-Construct-Application documents:

- A. The only Specification item that will be changed by the variance is will allow placement of OC soils materials that have a minimum of 16 percent fines (where fines are defined as percent passing-sieve # 200) when all other specified requirements are met.
- B. The Phase 5 waste displacement cell is divided to three subcell units. The mean of fines content (MFC) will be computed for each of the three subcell units from CQA gradation tests results (performed by the QAL at one-per-acre frequency). Where these test results show that the MFC of the OC in the subject subcell is less than 40%, a temporary surface treatment will be applied on the entire OC surface in that subcell area as specified in Item C below.
- C. The surface treatment shall consist of spray application of emulsified asphalt (EA) according to NCDOT material specifications for surface treatments (Section 660 of the NCDOT Standard Specifications, July 1995) using either CRS-2 or RS-2 asphalt grade applied at a rate of 0.22-0.30 gallons per square yard at application temperature of 150-175 °F. The Contractor will submit to the Engineer details regarding the spraying truck and procedure. The Contractor will not commence with spraying without written approval of the Engineer.

SUITE 117

BUILDING I

5625 DILLARD ROAD

CARY, NC 27511

PHONE 919/233-8091

FAX 919/233-8031

Mr. Ed Mussler
Solid Waste Section
January 8, 1997
Page 2 of 2

- D. Upon beginning of waste placement operations in the cell the owner will scarify the thin treated surface layer of the OC in the areas that have been sprayed with the EA by using approved equipment.
- E. Any subcell where OC soils meet the original approved specifications will not require the EA spray application discussed in Items C and D above.

Your prompt response will be greatly appreciated. Please do not hesitate to contact me at 233-8091 or Dr. Poran at 233-0407 if you have any questions.

Best regards.

Sincerely,

MCKIM & CREED ENGINEERS, P.A.



Tom Wainwright, PE
Project Engineer

cc: C.T. Clayton (McKim & Creed)
Dr. C. J. Poran (ENSOL)

From: Self <NRONA01/N1NW320>
To: Dr. C.J.Poran
Subject: Johnston County Landfill-Permit Number 51-02
Date sent: Wed, 15 Jan 1997 09:55:25 +1100

Dear Dr. Poran,
The Solid Waste Section is in receipt of the request to add a variance to the Operational Cover Specifications for the Johnston County Landfill, Permit Number 51-02. The request was prepared by Mr Tom Wainwright, PE, of Mckim and Creed, on behalf of Johnston County. I request that you please pass a copy of this message to him.

The request has been reviewed, and the Section agrees in principal to the request, however additional information is required before final approval may be issued. Therefore please provide the following to the Section at your earliest convenience:

1. The Material Data Safety Sheet, or technical specifications, for the proposed surface coating, and
2. Certification by the design engineer that the proposed change will not affect the design or construction of the unit.

Thank you for your prompt attention,

Sincerely,
Edward F. Mussler III, PE
Solid Waste Section

Date sent: Wed, 15 Jan 1997 11:13:15 -0800
From: cjp@ix.netcom.com (Dr. C. J. Poran)
Subject: Re: Johnston County Landfill-Permit Number 51-02
To: "ED MUSSLER" <n1nw320@wastenot.ehnr.state.nc.us>

You wrote:

>
>Dear Dr. Poran,
>The Solid Waste Section is in receipt of the request to add a
>variance to the Operational Cover Specifications for the Johnston
>County Landfill, Permit Number 51-02. The request was prepared by Mr
>Tom Wainwright, PE, of Mckim and Creed, on behalf of Johnston County.
>I request that you please pass a copy of this message to him.

>
>The request has been reviewed, and the Section agrees in principal
>to the request, however additional information is required before
>final approval may be issued. Therefore please provide the following
>to the Section at your earliest convenience:
>1. The Material Data Safety Sheet, or technical specifications, for
>the proposed surface coating, and
>2. Certification by the design engineer that the proposed change will
>not affect the design or construction of the unit.

>
>Thank you for your prompt attention,
>
>Sincerely,
>Edward F. Mussler III, PE
>Solid Waste Section

>
***** Our Reply *****

Dear Ed:

