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Blue Ridge Paper Products Inc. - Canton Mill

SOLID WASTE SECTION
ASHEVILLE REGIONAL OFFICE
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April 24, 2009

Mr. Allen Gaither
NCDENR
Division of Waste Management
2090 US Highway 70
Swannanoa, NC 28778

Fac/Perm/Co ID #	Date	Doc ID#
44-06	5/6/09	7372

Subject: Engineering Technical Review – Permit to Construct
Blue Ridge Paper Products Inc, Landfill Number 6D-South
Haywood County, Permit #44-06, Document ID No. 7071

Dear Mr. Gaither:

In response to your letter of March 27, 2009, regarding the engineering technical review of the documents titled *Permit to Construct Landfill No. 6D-South, Canton, North Carolina, Volumes I and II*, I have attached a copy of the letter from Mr. Guy Cote, with the response to each of your questions. Also included is the estimated closure and 30-year post-closure monitoring and maintenance cost information for Area 6D-South.

Thank you for your time and consideration regarding this project. Please let me know if you have further questions at this time.

James A. Giaque
Waste Compliance & Landfill Supervisor
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Michael Gustafson
Manager Environmental Affairs
Blue Ridge Paper Products Inc.
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Attachment

- Copy: Mike Gustafson
- Paul Dickens
- Bill vonVitzthume
- Mike Rector
- Mike Elmore
- Guy Cote (SME)

File: gaither6ds41609

Blue Ridge Paper Products Inc. – Canton Mill
175 Main Street • PO Box 4000
Canton, North Carolina 28716 • 828-646-2000

Division of Evergreen Packaging

7372

April 22, 2009

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Jim Giauque
Blue Ridge Paper Products
175 Main St.
PO Box 4000
Canton, North Carolina 28716

Subject: Engineering Technical Review – Permit to Construct
Blue Ridge Paper Products, Inc. – Landfill No. 6D-South
Haywood County, Permit #44-06, Document ID No. 7071
Response to March 27, 2009 Review Comments

Dear Mr. Giauque:

As requested, Sevee & Maher Engineers, Inc. (SME) has prepared a set of responses to the review comments provided by Mr. Allen Gaither of NCDENR on the Landfill No. 6D-South design. The comments were in Mr. Gaither's letter dated March 27, 2009 Engineering Technical Review. For ease of review, we have provided the comment along with our response.

VOLUME I – PERMIT TO CONSTRUCT APPLICATION

- 1. Page 2-9 states *no known springs are located within the limits of Landfill No. 6 Area D-South*. Rule .0504(2)(a)(iii) requires a map showing existing features to include: springs. However, SEEP-2, as indicated on Figure 3-1 in Attachment 3 of the Permit to Construct application, appears to be within the landfill limits. Please describe how a seep varies from a spring.**

SME's Response. The use of the term "seep" was made based on observations made during the Landfill 6D site investigation. SEEP-2 was identified and characterized as a diffuse expression of water passing slowly from the soil at that location. The seepage was not concentrated at one location but spread out over a large area, wetting the ground surface. Commonly we would use the term spring to imply a larger concentrated flow of water from an opening in the ground surface. However, the terms "spring" and "seep" are often used interchangeably. As shown on the drawings, the 6D-South underdrain system is designed to intercept flowage from the seep by means of an underdrain lateral branching from the main underdrain trunk line which terminates at SEEP-2. Regardless of the

definition, all seepage will be conveyed downgradient to an existing pond by means of the underdrain system.

2. **Page 2-16 states an operations manual, not included in this design, ... will include site development showing phases or progression of operation. Rule .0504(2)(g) requires, for reviewing a construction plan application, a site development showing phases or progression of operation. Please provide a drawing showing at a minimum, annual phases of operation.**

SME's Response. A cross section for area 6D-South is shown on Figure 1 attached with these comments. The landfill will be sequenced in uniform lifts over the entire area. The section shows the approximate thickness for each of the five phases. Each phase is sized to meet the annual waste capacity of approximately 200,000 cubic yards. Landfilling of the 6D-South area is expected to take 5 years.

3. **Page 2-17 states an operations manual, not included in this design, ... will include site development showing phases or progression of operation. Rule .0504(2)(h)(v) requires, for reviewing a construction plan application, a description of systematic usage of area, operation, orderly development and completion of the sanitary landfill. Please provide this description for review of the construction plan.**

SME's Response. The operations for 6D-South will continue the same practices as those currently used in 6A-West. A summary of the operating methods is described below.

The sludge, woodwaste and lime mud will be dumped by the haul truck operator and spread by an equipment operator. The landfill operator will place the waste in lifts 10 to 15 feet thick. As waste is dumped from the top of the lift the landfill operator will push and spread the waste over the working face. The waste will be spread in layers no greater than 2 feet thick. By spreading the waste in thin layers, the waste is allowed to drain, greater compaction is achieved, and stability of the working face is maintained.

Waste placement for area 6D-South is divided into five phases. Phase 1 encompasses approximately 11 acres of the entire area 6D-South base, has a depth of approximately 13 feet and a capacity of approximately 210,000 cubic yards. Phase 2 will be placed directly on top of Phase 1, has a depth of 11.5 feet a capacity of approximately 203,300 cubic yards. Phase 3 will be placed directly on top of Phase 2, has a depth of 11 feet and a capacity of approximately 213,100 cubic yards. Phase 4 will be placed directly on top of Phase 3, has a depth of 10.5 feet and a capacity of approximately 201,400 cubic yards. Phase 5 will be placed

directly on top of Phase 4 and filled to a depth which meets final grades and has a capacity of approximately 215,000 cubic yards.

4. **Page 4-2 in Attachment 2 notes a *pinhole density and installation defect rate of 1 per acre*. Could you please state the assumed diameter, or any other pertinent characteristics, of the pinhole/defect used to calculate the leakage rate in the HELP model.**

SME's Response. The Pinhole Density is a measure of the number of defects resulting from manufacturing flaws such as polymerization deficiencies. The HELP model assumes a hole diameter of 1 mm at a rate of one per acre.

The Installation Defect Density is a measure of the defects resulting primarily from seaming faults and punctures during installation. The HELP model assumes a diameter of 1 square centimeter at a rate of one per acre. The rate is a function of the installation quality control. The Blue Ridge project will maintain full-time oversight and quality control testing during installation which make for a "good" installation under the HELP model.

5. **Page 5-1 in Attachment 2 references Rule 15A NCAC 13B.0588. This rule does not exist in the Administrative Code.**

SME's Response. This was a typing error, the correct reference should have been Rule 15A NCAC 13B.0538 of the North Carolina Department of Environmental and Natural Resources (NCDENR) Solid Waste Management Regulations.

VOLUME II – DESIGN REPORT

6. **Section 2.4 states *the purpose of the pipe extensions is to provide access to the header for cleaning and maintenance*. Due to recent leachate collection system failures, the Section is requesting more information regarding cleaning and maintenance. Please provide the procedure used to check for functionality and quantify the criteria that will be used to determine proper operation of the LCS. The Section recommends annual jet cleaning and camera inspections to ensure proper functionality of the LCS. This frequency can be increased once the system is proven to be functioning properly.**

SME's Response. We would agree with the Section regarding the cleaning and inspections of leachate lines under certain conditions, such as MSW landfills. However, the leachate collection system design in combination with the waste mix at Blue Ridge Paper has shown that annual cleaning has not been necessary. The current leachate collection design has been in use since 1995 at Landfill No. 6. To date the mill has not found it necessary to perform annual cleanings or any cleanings at all for areas 6A-East and 6A-West. The Environmental Department staff at the mill review daily leachate flow charts that show how quickly the system recovers after a rainfall event. If the system recovery were to show a slower response, that would trigger the mill to investigate the cause and a

solution. At this point in time, the mill is requesting continuing the current practices and not institute annual cleaning and camera inspection.

7. **Section 3.2.4 Leachate Pump Station (page 3-3) states *the pumps were designed to remove leachate... within an acceptable period of time.* Please specify that acceptable period of time.**

SME's Response. The leachate pump capacity is such that the runoff volume generated during the 25-year/24-hour storm event will be completely removed from the sump area within 5 days.

8. **The Liner (balloon 5) and the Regional Phreatic Surface pointers appear to be swapped on Figure 2 in Appendix B.**

SME's Response. The pointers were inadvertently swapped as stated. The figure has been updated and attached with these responses.

MISCELLANEOUS

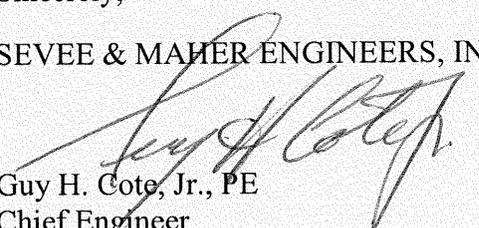
9. **The Section will also be asking for Financial Assurance according to NCGS 130A-295.2...please submit cost estimates for closure and 30-year post-closure monitoring and maintenance of the facility.**

SME's Response. A closure and post-closure estimate is attached. The closure cost estimate is specific to Landfill No. 6D-South, while the post-closure cost estimate encompasses the activities necessary at Landfill No. 6 after closure. The estimated combined closure and post-closure cost is \$4.39 million.

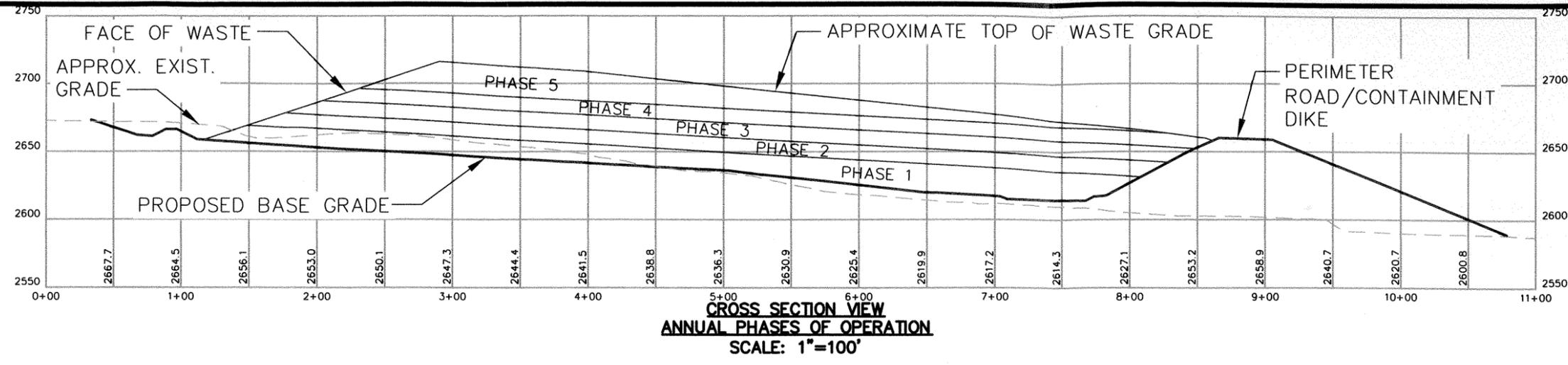
This completes our response to the Section's review comments on Landfill No. 6D-South. Should you have any additional questions, please feel free to contact us.

Sincerely,

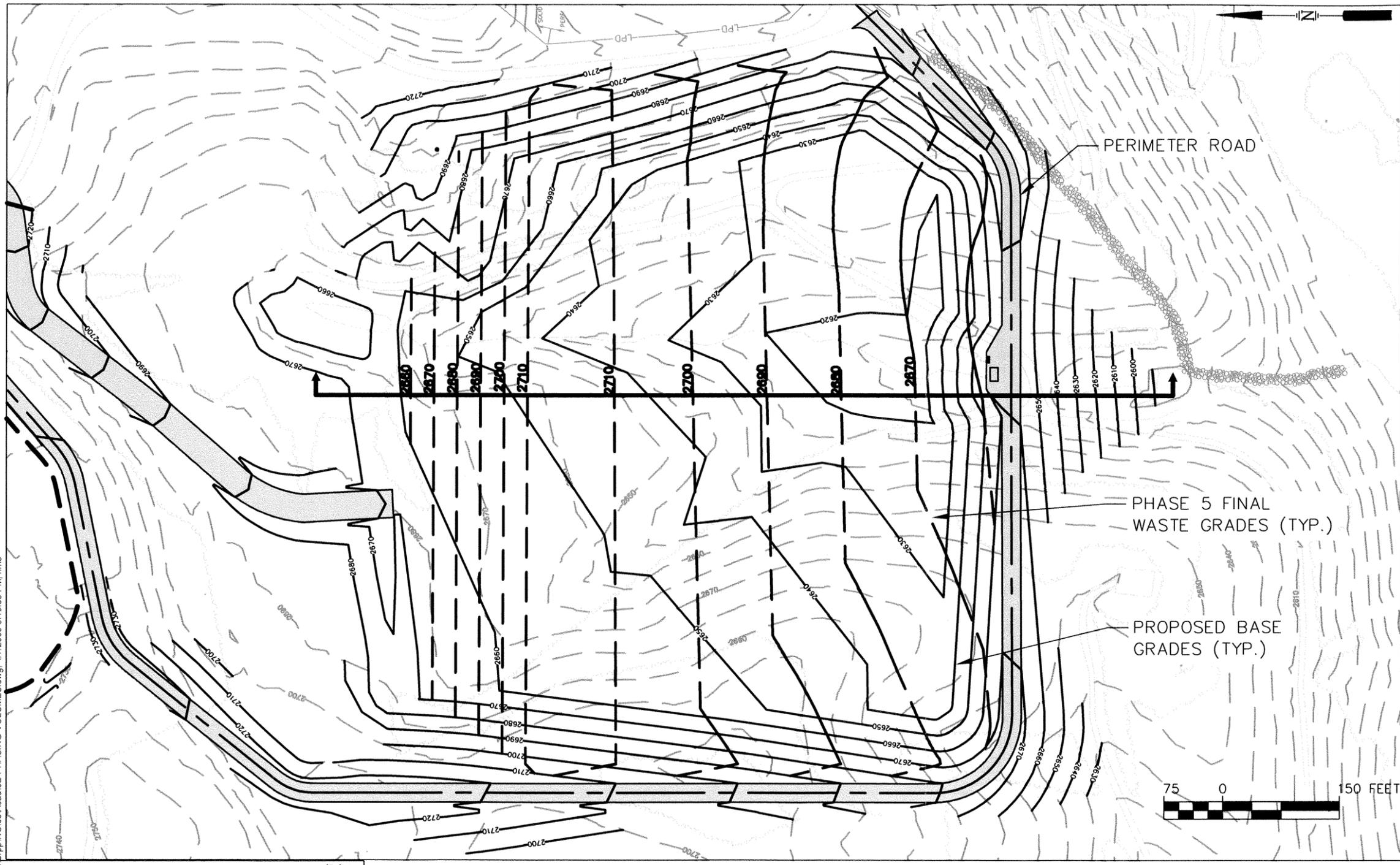
SEVEE & MAHER ENGINEERS, INC.


Guy H. Cote, Jr., PE
Chief Engineer

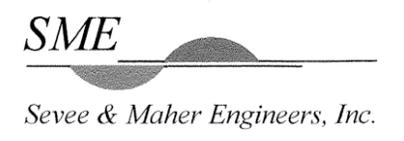
Attachments



ANNUAL PHASES OF OPERATION:
 PHASE 1: 13' LIFT, 210,000 C.Y.
 PHASE 2: 11.5' LIFT, 203,300 C.Y.
 PHASE 3: 11' LIFT, 213,100 C.Y.
 PHASE 4: 10.5' LIFT, 201,400 C.Y.
 PHASE 5: 212,580 C.Y.



**FIGURE 1
ANNUAL PHASES OF OPERATION
BLUE RIDGE PAPER PRODUCTS
INC. -
CANTON MILL
CANTON, NORTH CAROLINA
LANDFILL NO. 6 AMENDMENT**



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ANNUAL PHASES OF OPERATION:

- PHASE 1: 13' LIFT, 210,000 C.Y.
- PHASE 2: 11.5' LIFT, 203,300 C.Y.
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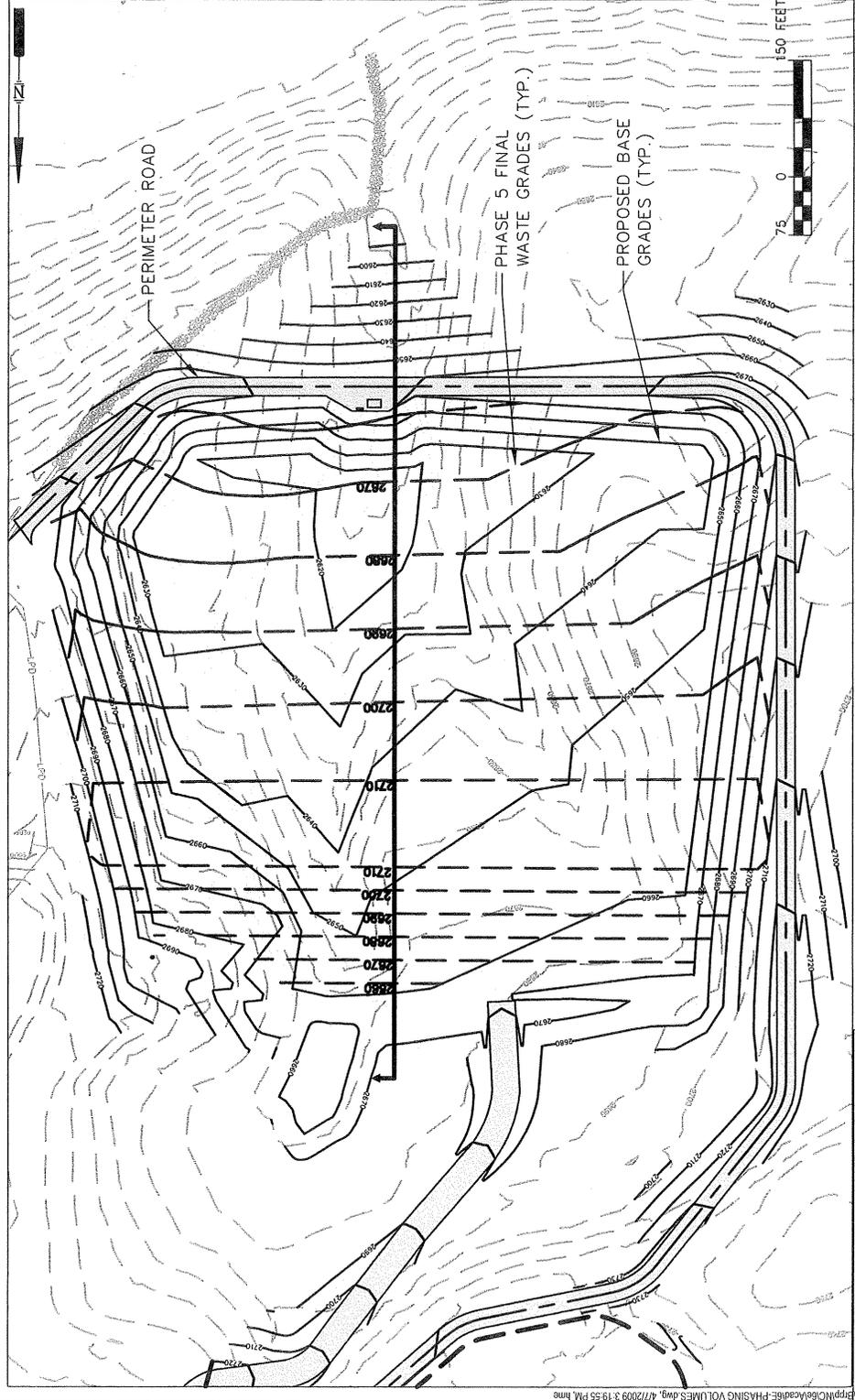
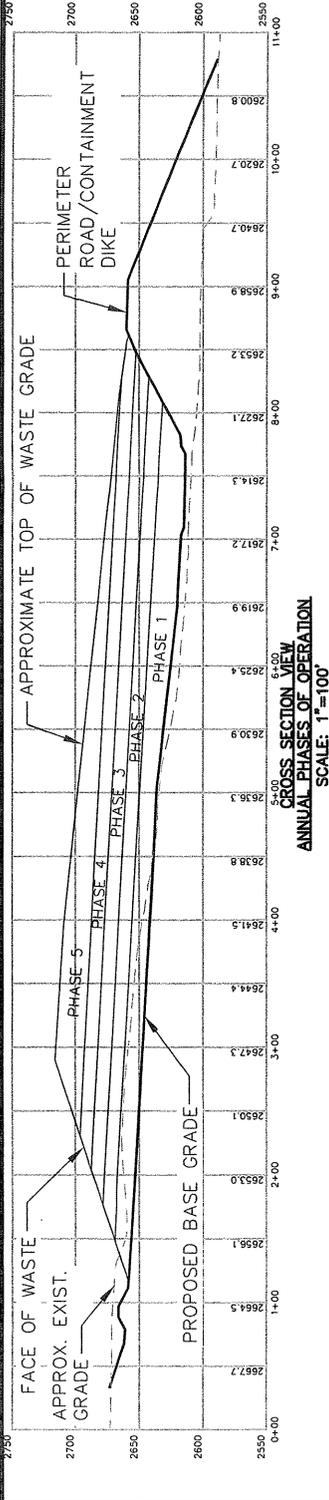
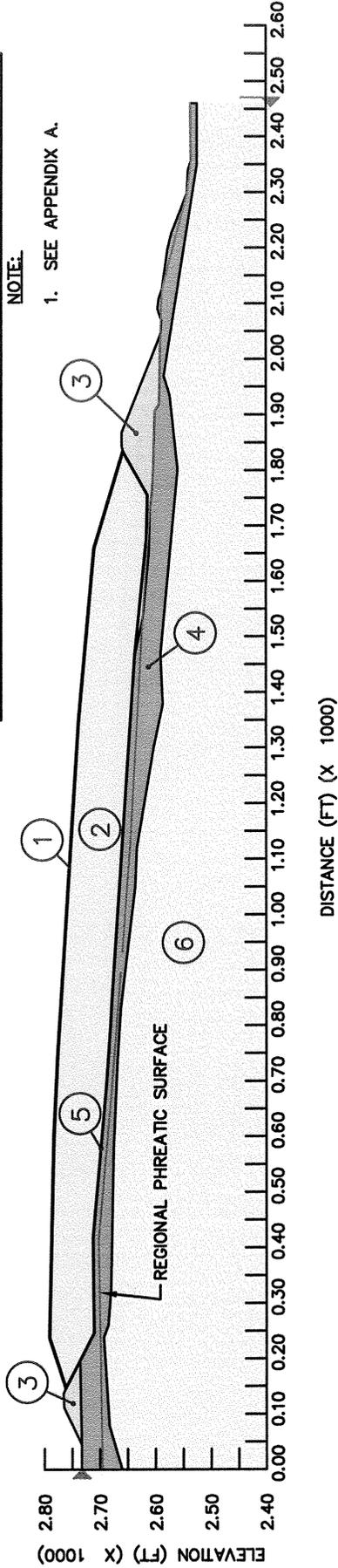


FIGURE 1
ANNUAL PHASES OF OPERATION
BLUE RIDGE PAPER PRODUCTS
INC.
CANTON MILL
CANTON, NORTH CAROLINA
LANDFILL NO. 6 AMENDMENT

SME
Seave & Maher Engineers, Inc.

NO	MATERIAL TYPE	UNIT WEIGHT (PCF)	SHEAR STRENGTH	
			ϕ (DEGREES)	c (PSF)
1	SOIL COVER	125	30	---
2	WASTE	90	36	---
3	PERIMETER DIKE	120	32	115
4	FOUNDATION SOIL	115	28.5	---
5	LINER	120	STRENGTH ENVELOPE ¹	
6	BEDROCK	150	ASSUMED IMPENETRABLE	



NOTE:

1. SEE APPENDIX A.



NOTE:

PIEZOMETRIC CONDITION IN WASTE MODELED AS A GRID OF PRESSURE HEADS. BASED ON THE RELATIONSHIP OF 0.18 FEET OF PORE PRESSURE PER FOOT OF WASTE.

FIGURE 2

CROSS SECTION A-A'
 BLUE RIDGE PAPER PRODUCTS INC. -
 CANTON MILL
 CANTON, NORTH CAROLINA
 LANDFILL NO. 6 AMENDMENT

SME

Sevee & Maher Engineers, Inc.

Cost Estimate Form for Closure of a Landfill



Facility Name: Landfill No. 6
Address of Facility: Canton, NC
Owner: Blue Ridge Paper Products
Phase: 6D-South
Acreage: 16 Acre footprint with soil cap
NCDENR Permit #:
Updated: April 22, 2009

Task	DES Use Only	Unit	Unit Cost	Quantity	Total Cost
I Design of Final Closure Plans	Cat 1				
Engineering Cost	100	TS	\$40,000.00	1	\$40,000.00
Plans	110	TS			\$0.00
Modification/Closure Plan Review Fees	120	TS			\$0.00
II Mobilization, Demobilization & Insurance	Cat 2				
Total cost	200	TS	\$50,000.00	1	\$50,000.00
Other	210				\$0.00
III Erosion Control	Cat 3				
Silt Fence	300	LF			\$0.00
Erosion Matting/ Blanket	310	SY	\$9.30	3220	\$29,946.00
Hay Bale Sediment Barrier	320	LF			\$0.00
Hay Mulch Cover	330	UNIT			\$0.00
Check Dams	340	EA			\$0.00
Other	350	TS			\$0.00
IV Waste Relocation	Cat 4				
Test Pits (to define limits of refuse and/or ground water to refuse conta	400	DAY			\$0.00
Clearing & Grubbing	410	SY			\$0.00
Waste Regrading (Refuse Excavation/Relocation & Compaction)	420	CY			\$0.00
Other	430				\$0.00
V Capping	Cat 5				
A Cap (Material and Installation)					\$0.00
Geomembrane - 40 mil	510	SF			\$0.00
Till soil - 3 feet	520	CY	\$10.00	82700	\$827,000.00
Testing	530				\$0.00
Anchor Trench	540				\$0.00
Geotextile 16 oz.	541	SF			\$0.00
Geotextile 7 oz.	542	SF			\$0.00
Geotextile 4 oz.	543	SF			\$0.00
Other (Piping and Manhole)	550	LS	\$115,000.00	1	\$115,000.00
B Gas Vents Devices	Cat 6				\$0.00
Gas Vents/Wells	600	LF			\$0.00
Other	610				\$0.00
C Layers	Cat 7				\$0.00
Drainage Layer - #67 Stone - 12" thick	700	CY	\$18.00	27600	\$496,800.00
Intermediate Cover Placement	710	CY			\$0.00
Sand - Protective Gas Venting Layer - 12" thick	720	CY			\$0.00
Topsoil/Loam or Manufactured Soil - 12" thick	730	CY	\$10.00	9200	\$92,000.00
Sand Bags for berms	740	ea			\$0.00
Other	750				\$0.00

Task		Unit	Unit Cost	Quantity	Total Cost
VI Stabilization, Run-off Control	Cat 8				
Seed & Mulch (Include Lime, Fertilizer, Seed & Hay Mulch)	800	Unit	\$55.00	750	\$41,250.00
Surface Water Diversion Swales	810	LF	\$5.00	6500	\$32,500.00
Stone Rip-Rap	820	LF			\$0.00
Piping 6 inch	852	LF			\$0.00
Piping Connections	853	EA			\$0.00
Other	860				\$0.00
VII Monitoring Devices	Cat 9				
Settlement Monuments/Plates	900	EA			\$0.00
Groundwater Monitoring Wells	910	EA			\$0.00
Gas Monitoring Probes	920	EA			\$0.00
Other	930				\$0.00
VIII Roadway	Cat 10				
Access Roadway	1000	LF			\$0.00
Drainage Ditches	1010				\$0.00
Culvert Inlet & Outlet Headwalls	1020				\$0.00
Guide Rail	1030	LF			\$0.00
Dust Control - Calcium Chloride	1040				\$0.00
New/Replaced Pavement	1050	SY			\$0.00
Other	1060				\$0.00
IX Miscellaneous	Cat 11				
Signs	1100	LS			\$0.00
Perimeter Fence	1110	LF			\$0.00
Entry Gate - Double Unit	1120	EA			\$0.00
Miscellaneous Work and Cleanup	1130				\$0.00
Ledge Removal	1140	CY			\$0.00
Other	1150				\$0.00
X Surveying	Cat 12				
Baseline, Bench Marks, and Survey Control	1200	TS		5000	\$5,000.00
Other	1210				\$0.00
XI Construction Phase Testing	Cat 13				
Compaction Testing	1300				\$25,000.00
QAQC	1310				\$120,000.00
Other	1320				\$0.00
XII Engineering	Cat 14				
Resident Engineer, Project Manager, Project Engineer	1400	TS	\$120,000.00	1	\$120,000.00
Record Drawings/ As-Built	1410				\$10,000.00
Other	1420				\$0.00
XIII Other (list)	Cat 15				
	1500				\$0.00
	1510				\$0.00
XIV Contingency (minimum 10%)	Cat 16				
	1600	LS	10%	2004496	\$200,449.60
Total Cost					\$2,204,945.60

Post closure costs for 30 years \$2,189,250.00

TOTAL \$4,394,195.60

**BLUE RIDGE PAPER PRODUCTS
CANTON, NORTH CAROLINA
LANDFILL # 6 - AREA D SOUTH**

Updated: 4/20/09

1. Landfill Maintenance Cost

<u>a. General site repairs and maintenance.</u>	ESTIMATED COSTS		
Required repairs will include erosion repairs of the cover system, siltation removal from the stormwater conveyance system, surface repairs to the roads, and culvert maintenance.	years	cost/year	total cost
	1-5	\$ 55,000.00	\$ 275,000.00
	6-10	\$ 25,000.00	\$ 125,000.00
	11-30	\$ 10,000.00	\$ 200,000.00
<u>b. Mowing.</u> Approximately 175 acres of the landfill facility will require mowing. Mowing will occur twice per year.	1-30	\$ 10,000.00	\$ 300,000.00
<u>c. Groundwater monitoring system.</u> This item provides the cost to replace two monitoring wells over the 30-year post-closure period. The cost include drilling , installation , development , and documentation.	1-30		\$ 15,000.00
SUBTOTAL LANDFILL MAINTENANCE			\$ 915,000.00

2. Landfill Inspections

<u>a. Mill inspections.</u> This item provides the cost for periodic inspections by Blue Ridge personnel. The first 5- years will require 6 visits per year. Years 6-10 will require 3 visits per year , and the remaining years will require 2 visits per year.	1-5	\$ 1,500.00	\$ 7,500.00
	6-10	\$ 750.00	\$ 3,750.00
	11-30	\$ 500.00	\$ 10,000.00
<u>b. Independent engineering firm.</u> Cost associated with this item include 2 site inspections per year for the first ten years of post closure and 1 site inspection per year for the last twenty years.	1-10	\$ 3,000.00	\$ 30,000.00
	11-30	\$ 1,500.00	\$ 30,000.00
<u>c. Aerial Survey.</u> Cost associated with this item include 1 aerial surveys per year for the first ten years of post closure and 1 aerial survey per 5 years for the last twenty years.	1-10	\$ 2,000.00	\$ 20,000.00
	11-30	\$ 2,000.00	\$ 8,000.00
SUBTOTAL INSPECTION COST			\$ 109,250.00

3. Leachate Management

a. <u>Leachate pipe flushing.</u> This item includes cost to flush the leachate collection pipes once a year for the first five years, and once every two years for the next 5 years.	1-5	\$ 10,000.00	\$ 50,000.00
	6-10	\$ 5,000.00	\$ 25,000.00

b. Electric cost (pump station)

This item includes the electrical cost for the pump station. The majority of the cost will be electricity used to heat the building.

1-30	\$ 1,500.00	\$ 45,000.00
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c. General cost

This item includes costs associated with general repairs and maintenance to the pump station buildings, pumps, fitting, valves, meters and lights and also includes annual cleanout and inspection of the leachate pond.

1-30	\$ 9,000.00	\$ 270,000.00
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SUBTOTAL LEACHATE MANAGEMENT		\$ 390,000.00
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4. Water Quality Monitoring, Testing, and Reporting

Cost associated with water quality monitoring, testing, and reporting include field sampling, laboratory analysis, quarterly and annual reporting, equipment cost, milage , hotel, and meal cost and miscellaneous materials cost. The water sampling will be at a rate of two times a year for the first five years and once a year the following twenty five years

year	cost/year	cost
1-5	\$ 45,000.00	\$ 225,000.00
6-30	\$ 22,000.00	\$ 550,000.00

SUBTOTAL WATER QUALITY	\$ 775,000.00
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GRAND TOTAL FOR 30 YEARS	\$ 2,189,250.00
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COST FOR YEARS 1-5	\$ 687,500.00
COST FOR YEARS 6-10	\$ 393,750.00
COST FOR YEARS 11-30	\$ 1,108,000.00
	\$ 2,189,250.00