



Canton Office  
175 Main Street • Canton, NC 28716

19 December 2011

Permit No.	Date	DIN
44-06	January 3, 2012	15849

Ervin Lane  
Compliance Hydrogeologist  
Division of Waste Management – Solid Waste Section  
North Carolina Department of Environment  
and Natural Resources  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646

RECEIVED  
**December 19, 2011**  
Solid Waste Section  
Asheville Regional Office

Subject: **Final Revised Post Closure Corrective Action Estimate**  
Canton Mill Landfill No. 6  
Permit No. 44-06

Dear Mr. Lane –

This follows our meeting in Raleigh on 9 December 2011 and your voice message of 14 December 2011. Thank you for meeting with me and subsequently talking with Mr. Poindexter about the corrective action estimate in our overall landfill financial assurance. Attached is the final revised estimate prepared by our consultant – Mr. Guy Cote of Sevee & Maher Engineers – with the corrective action implementation line item that we discussed. This updates the 11 November 2011 estimate as requested by the Division and documents that the Letter of Credit dated 3 August 2011 in amount of \$5,472,000 remains sufficient.

Landfill closure cap	\$ 2,075,000
Post closure monitoring and maintenance including contingency for corrective action evaluation and implementation	\$ 3,358,000
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	\$ 5,433,000

Sincerely –

James Giauque  
Waste Compliance & Landfill Supervisor  
Canton / Waynesville  
828-646-2028  
[jim.giauque@everpack.com](mailto:jim.giauque@everpack.com)

Paul Dickens  
Manager, Environmental Affairs  
Canton / Waynesville  
828-646-6141  
[paul.dickens@everpack.com](mailto:paul.dickens@everpack.com)

Enclosure:

15 Dec 2011 updated financial assurance estimate with corrective action prepared by SME, 5 pages

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Mr Ervin Lane, NC DWM Solid Waste  
19 Dec 2011, Page 2

cc: w/ enclosure:

Mr. Allen Gaither  
Environmental Engineer  
Division of Waste Management  
North Carolina Department of Environment  
and Natural Resources  
2090 U.S. Highway 70  
Swannanoa, North Carolina 28778

internal distribution

# Cost Estimate Form for Closure of a Lined Landfill



<b>Facility Name:</b>	2011 CLOSURE ESTIMATE FOR LANDFILL NO. 6
<b>Address of Facility:</b>	CANTON, NORTH CAROLINA
<b>Owner:</b>	EVERGREEN PACKAGING - CANTON MILL
<b>Phase:</b>	AREA 6A-WEST
	15 Acres (15 acres with HDPE)
<b>DENR Permit #:</b>	44-06

Task		Unit	Unit Cost	Quantity	Total Cost
<b>I Design of Final Closure Plans</b>	<b>Cat1</b>				
Engineering Cost	100	TS	\$75,000.00	1	\$75,000.00
Plans	110	TS			\$0.00
Modification/Closure Plan Review Fees	120	TS			\$0.00
<b>II Mobilization, Demobilization &amp; Insurance</b>	<b>Cat 2</b>				
Total cost	200	TS	\$25,000.00	1	\$25,000.00
Other	210				\$0.00
<b>III Erosion Control</b>	<b>Cat 3</b>				
Silt Fence	300	LF	\$3.50	6000	\$21,000.00
Erosion Matting/ Blanket	310	EA	\$15,000.00	1	\$15,000.00
Hay Bale Sediment Barrier	320	LF			\$0.00
Hay Mulch Cover	330				\$0.00
Check Dams	340	EA			\$0.00
Other	350	TS	\$25,000.00	1	\$25,000.00
<b>IV Waste Relocation</b>	<b>Cat 4</b>				
Test Pits (to define limits of refuse and/or ground water to refuse contact)	400	DAY			\$0.00
Clearing & Grubbing	410	SY			\$0.00
Waste Regrading	420	CY	\$0.00	1	\$0.00
Other	430				\$0.00
<b>V Capping</b>	<b>Cat 5</b>				
<b>A Cap (Material and Installation)</b>					\$0.00
Geomembrane - 40 mil HDPE	510	SF	\$0.50	652500	\$326,250.00
Common Borrow Soil Layer - 18" thick	520	CY	\$5.50	36300	\$199,650.00
Common Borrow Soil Layer - 36" thick	530	CY			\$0.00
Anchor Trench	540				\$0.00
Geotextile 16 oz.	541	SF	\$0.30	652500	\$195,750.00
Geotextile 12 oz.	542	SF	\$0.20		\$0.00
Geocomposite	543	SF	\$0.45	652500	\$293,625.00
Other	550				\$0.00
<b>B Gas Vents Devices</b>	<b>Cat 6</b>				\$0.00
Gas Wells	600	VF	\$80.00	0	\$0.00
Gas Vents	610	LF	\$9.00	6000	\$54,000.00
<b>C Layers</b>	<b>Cat 7</b>				\$0.00
Drainage Layer - Washed Aggregate - 6" thick	700	CY	\$17.00	12100	\$205,700.00
Intermediate Cover Placement	710	CY	\$0.00	0	\$0.00
Sand - Protective Gas Venting Layer - 12" thick	720	CY	\$7.00	0	\$0.00
Topsoil/Loam or Manufactured Soil - 6" thick	730	CY	\$10.00	12100	\$121,000.00
Sand Bags for berms	740	ea	\$0.15		\$0.00
Other	750				\$0.00

Task		Unit	Unit Cost	Quantity	Total Cost
<b>VI Stabilization, Run-off Control</b>	<b>Cat 8</b>				
Seed & Mulch (Include Lime, Fertilizer, Seed & Hay Mulch)	800	Unit	\$50.00	1300	\$65,000.00
Surface Water Diversion Swales	810	LF	\$0.00	0	\$0.00
Stone Rip-Rap	820	LF	\$20.00	0	\$0.00
Piping 6 inch	852	LF	\$9.00	7000	\$63,000.00
Piping Connections	853	EA	\$1,000.00	12	\$12,000.00
Stormdrain system	860	EA	\$0.00	1	\$0.00
<b>VII Monitoring Devices</b>	<b>Cat 9</b>				
Settlement Monuments/Plates	900	EA			\$0.00
Groundwater Monitoring Wells	910	EA			\$0.00
Gas Monitoring Probes	920	EA		0	\$0.00
Other	930				\$0.00
<b>VIII Roadway</b>	<b>Cat 10</b>				
Access Roadway	1000	LF			\$0.00
Drainage Ditches	1010				\$0.00
Culvert Inlet & Outlet Headwalls	1020				\$0.00
Guide Rail	1030	LF			\$0.00
Culverts	1040	LF	\$50.00	500	\$25,000.00
New/Replaced Pavement	1050	SY			\$0.00
Other	1060				\$0.00
<b>IX Miscellaneous</b>	<b>Cat 11</b>				
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
<b>X Surveying</b>	<b>Cat 12</b>				
Baseline, Bench Marks, and Survey Control	1200	EA	\$5.00	1	\$5.00
Other	1210				\$0.00
<b>XI Construction Phase Testing</b>	<b>Cat 13</b>				
Compaction Testing	1300				\$0.00
QAQC	1310		\$30,000.00	1	\$30,000.00
Other	1320				\$0.00
<b>XII Engineering</b>	<b>Cat 14</b>				
Resident Engineer, Project Manager, Project Engineer	1400		\$125,000.00	1	\$125,000.00
Record Drawings	1410		\$8,000.00	1	\$8,000.00
Other	1420				\$0.00
<b>XIII Other (list)</b>	<b>Cat 15</b>				
	1500				\$0.00
	1510				\$0.00
<b>XIV Contingency (minimum 10%)</b>	<b>Cat 16</b>				
	1600	LS	10%	1884980	190,000
<b>Total Closure Cost</b>					<b>\$2,074,980</b>

Total Closure Cost Rounded	<b>\$2,075,000</b>
Post Closure Monitoring and Maintenance	<b>\$1,358,000</b>
Corrective Action	<b>\$2,000,000</b>
Total Financial Assurance	<b>\$5,433,000</b>

Evergreen Packaging - Canton Mill  
Landfill No. 6  
Canton, North Carolina  
Post-Closure Monitoring and Maintenance Costs

Inflation Rate 1.01%

1. Landfill Maintenance Cost

a. General site repairs and maintenance.

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.

	ESTIMATED COSTS		total cost	Adjusted for Inflation
	years	cost/year		
	1-10	\$2,500	\$25,000	(\$26,167)
	11-30	\$1,500	\$30,000	(\$37,249)

Approximately 150 acres of the landfill facility will require mowing. Mowing will occur twice per year.

	1-30	\$5,000	\$150,000	(\$174,187)
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b. Snow removal.

Road maintenance during the winter months will include plowing, sanding, and shoveling

	1-30	\$2,500	\$75,000	(\$87,094)
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c. Gas control system.

Not Applicable

	1-30	\$0	\$0	\$0
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**SUBTOTAL LANDFILL MAINTENANCE (\$324,697)**

2. Landfill Inspections

a. Mill inspections

This item provides the cost for periodic inspections by Evergreen personnel. The first 3- years will require 2 visits per year. Years 4-30 will require 1 visit per year.

	1-3	\$500	\$1,500	(\$1,515)
	4-30	\$300	\$8,100	(\$9,596)

b. Independent engineering firm

Cost associated with this item include 2 site inspections per year for the first three years of post closure and 1 site inspection per year for the last twenty seven years.

	1-3	\$1,000	\$3,000	(\$3,030)
	4-30	\$500	\$13,500	(\$15,993)

c. Geotechnical Inspections

This item includes the cost associated with one site inspection per year for the 30-year post closure period. Cost include the review of data (piezometers, settlement, gauges, etc.), and a letter report documenting the condition of the landfill.

	1-30	\$1,000	\$30,000	(\$34,837)
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**SUBTOTAL INSPECTION COST (\$64,973)**

Evergreen Packaging - Canton Mill  
 Landfill No. 6  
 Canton, North Carolina  
 Post-Closure Monitoring and Maintenance Costs

3. <u>Leachate Management</u>	year	cost/year	cost	Adjusted for Inflation
<u>a. Replacement Cost</u>				
These costs are assumed replacement costs for the leachate pond liner (20 yr life), leachate pumps (10 year life), and flow meter and controls (15 yr life).				
Pond liner (40,000 SF)			\$40,000	(\$48,904)
Pumps			\$25,000	(\$27,643)
<u>b. Preventative Maintenance</u>				
Assumes biennial preventative maintenance of the leachate force main, cleaning and inspection of the leachate pond liner and annual cleaning and inspection of the leachate collection system.				
	1-30	\$15,000	\$450,000	(\$522,562)
<u>c. Electric cost (pump station)</u>				
This item includes the electrical cost for two pump stations.				
	1-30	\$2,000	\$60,000	(\$69,675)
<u>d. General cost</u>				
This item includes costs associated with general repairs and maintenance to the pump station buildings, pumps, fitting, valves, meters and lights.				
	1-30	\$5,000	\$150,000	(\$174,187)
<u>e. Leachate Treatment</u>				
	Years	Cost/gal	Leachate Generation Gal/Yr	Cost
Cost associated with treating the leachate pumped to the WWTP. Leachate generation is based on geomembrane covers for 6D-South and soil covers on 6A-East, West, and B and C.				
	1-30	\$ 0.0004	9007500	\$108,090
				(\$125,519)
<b>SUBTOTAL LEACHATE MANAGEMENT</b>				<b>(\$968,490)</b>

Evergreen Packaging - Canton Mill  
Landfill No. 6  
Canton, North Carolina  
Post-Closure Monitoring and Maintenance Costs

**4 CORRECTIVE ACTION COST ITEMS INCLUDED IN  
\$2,000,000 (new statutory minimum July 2011)**

<u>A. Compliance Monitoring</u>	year	cost/year	cost	Adjusted for Inflation
<u>a. Sampling and Analysis</u>	1-5	\$50,000	\$250,000	(\$255,101)
Cost associated with water quality monitoring, testing, and reporting include field sampling, laboratory analysis, quarterly and annual reporting, equipment cost, mileage, hotel, and meal cost and miscellaneous materials cost. The water sampling will be at a rate of twice a year for the first five years and once a year the following twenty five years	6-30	\$25,000	\$625,000	(\$750,403)
 <u>b. Landfill Gas Monitoring</u>	1-10	\$6,000	\$60,000	(\$62,802)
Cost associated with methane gas testing, and reporting include field sampling, and semi annual reporting, equipment cost, mileage, hotel, and meal cost and miscellaneous materials cost. The gas monitoring will be at a rate of twice per year for the first ten years and once a year the following twenty years	10-30	\$3,000	\$60,000	(\$74,498)
 <u>c. Maintenance and Repair</u>	15	\$15,000	\$15,000	(\$17,440)
This item provides the cost to replace two monitoring wells and a gas probe over the 30-year post-closure period. The cost includes drilling, installation, development, and documentation.				
 <u>B. Assessment Monitoring</u>	year	unit cost	cost	Adjusted for Inflation
<u>a. Corrective Action Work Plan</u>	30	\$50,000	\$50,000	(\$67,593)
Cost associated with preparation of Work Plan to assess and characterize the nature and extent of groundwater plume triggered by the Compliance Monitoring Program.				
 <u>b. Monitoring Wells</u>	30	\$7,000	\$42,000	(\$56,778)
Cost associated with installing additional monitoring wells to characterize the nature and extent of groundwater plume (assumed 6 wells).				
 <u>c. Sampling and Analysis</u>	30	\$25,000	\$75,000	(\$101,389)
Cost associated with water quality monitoring and testing. These sample rounds would be conducted in conjunction with the Work Plan from 4.B.a. A total of three rounds are contemplated.				
<u>d. Evaluation</u>	30	\$75,000	\$75,000	(\$101,389)
Preparation of corrective action report with findings.				
<u>e. Corrective Action Implementation</u>	30	\$350,000	\$350,000	(\$473,150)
 <u>f. Maintenance and Repair</u>	30	\$7,000	\$7,000	(\$9,463)
This item provides the cost to replace one monitoring well installed as part of the Assessment Monitoring. The cost includes drilling, installation, development, and documentation.				
<b>SUBTOTAL CORRECTIVE ACTION</b>				<b>(\$1,970,008)</b>
<b>CORRECTIVE ACTION USED IN FINANCIAL ASSURANCE</b>				<b>(\$2,000,000)</b>
<b>GRAND TOTAL FOR 30 YEARS</b>				<b>(\$3,358,160)</b>
<b>ROUNDED</b>				<b>(\$3,358,000)</b>

Reviewed by Sevee & Maher Engineers, 12/15/2011