



**BRAZOS VALLEY DISPOSAL FACILITY
COLLEGE STATION, BRAZOS COUNTY, TEXAS**

PERMIT APPLICATION

PART III

**ATTACHMENT 9
CLOSURE AND POST-CLOSURE COST ESTIMATES**

Prepared for:

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**Golder Associates Inc.
F-2578**

**INTENDED FOR PERMITTING
PURPOSES ONLY**

May 2011

**BRAZOS VALLEY DISPOSAL FACILITY
COLLEGE STATION, BRAZOS COUNTY, TEXAS**

PERMIT APPLICATION

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1.0 COST ESTIMATE FOR FINAL CLOSURE

The estimated cost, in current dollars, to close the Brazos Valley Disposal Facility, as described in Part III, Attachment 7, based on the cost of hiring a third party to close the facility at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, is \$956,288 in 2011 dollars, as shown on Table 9-1. The breakdown of the cost estimate is presented in Appendix A and is based on closure of a 21.8-acre area, which is the largest area projected to require closure at one time.

In accordance with 30 TAC §330.503(a), the required closure cost estimate is to close the largest waste fill area that could potentially be open in the year to follow and those areas that have not received final cover. In accordance with 30 TAC §330.503(a)(2) and (3), CCAA, LLC (CCAA) will revise the closure cost estimate (increase or decrease) after approval of this permit application to reflect the largest waste fill area that could potentially be open for the following year after permit approval. The cost estimate will then be updated annually, as described below.

1.1 Annual Update

CCAA will review the facility's conditions on an annual basis to verify that the current active areas comply with the closure cost estimate. Revisions will be made to the closure cost estimate as necessary to correct discrepancies.

An increase in the closure cost estimate and the amount of financial assurance provided will be made if changes in the closure plan or the landfill conditions increase the maximum cost of closure at any time during the remaining active life of the unit. An increase in financial assurance to cover an increase in the cost estimate must be made within 60 days of the approval of the revised cost estimate by the executive director.

A reduction in the closure cost estimate and the amount of financial assurance required may be allowed if the cost estimate exceeds the maximum cost of closure at any time during the remaining life of the unit and CCAA provides written notice to the executive director and a detailed justification for the reduction of the closure cost estimate and the amount of financial assurance. A reduction in the cost estimate and the financial assurance will be considered a permit modification. The financial assurance will not be reduced until the executive director has approved the revised closure cost estimate.

An annual update of the closure cost estimate for inflation is also required as discussed below in Section 1.2.

1.2 Financial Assurance for Closure

In accordance with 30 TAC §330.503(b) and §37.111, CCAA will provide continuous financial assurance coverage for closure until the facility is officially placed under the post-closure maintenance period and the executive director has approved all requirements of the closure plan.

In accordance with 30 TAC §37.131, during the active life of the facility, CCAA will adjust the current cost estimate annually for inflation within 60 days prior to the anniversary of establishing the financial instrument(s) used. The evidence of any additional financial assurance will be provided to the executive director within 30 days after the anniversary date of the first establishment of the financial assurance mechanism.

The adjustment may be made by recalculating the maximum cost of closure in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in the Survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year. Multiplying the closure cost estimate by the inflation factor makes the first adjustment. The result is the adjusted closure cost estimate. Multiplying the latest adjusted closure cost estimate by the latest inflation factor makes subsequent adjustments.

If a revised closure cost estimate is approved by the executive director prior to the annual inflation update, an additional update for inflation only is not required. The regular annual inflation update will resume the following year.

In accordance with 30 TAC §330.63(j), a copy of the financial assurance documentation for closure of the facility will be submitted 60 days prior to the initial receipt of waste.

2.0 COST ESTIMATE FOR POST-CLOSURE CARE

The cost estimate to perform the post-closure care maintenance as described in Part III, Attachment 8 is estimated to be \$252,042 in 2011 dollars, as shown on Table 9-2. The cost estimate is based on hiring a third party to conduct post-closure care activities for the facility in accordance with Part III, Attachment 8, as required by 30 TAC §330.507. The estimate accounts for the total cost of conducting post-closure care for the largest area that could possibly require post-closure care in the year to follow, including annual and periodic costs as described in the post-closure plan over the entire post-closure care period. The breakdown of the cost estimate is presented in Appendix B.

2.1 Annual Update

CCAA will review the facility's conditions on an annual basis to verify that the current operations comply with the constraints of the post-closure cost estimate. Revisions will be made to the post-closure cost estimate as necessary to correct discrepancies.

An increase in the post-closure care cost estimate and the amount of financial assurance provided will be made if changes in the post-closure care plan or the unit conditions increase the maximum costs of post-closure care. An increase in financial assurance to cover an increase in the cost estimate must be made within 60 days of the executive director's approval of the revised cost estimate.

A reduction in the post-closure care cost estimate and the amount of financial assurance required may be allowed if the cost estimate exceeds the maximum costs of post-closure care remaining over the post-closure period and CCAA provides written notice to the executive director of the detailed justification for reducing the post-closure cost estimate and the amount of financial assurance. A reduction in the cost estimate and the financial assurance will be considered a permit modification. The financial assurance will not be reduced until the executive director has approved the revised post-closure cost estimate.

An annual update of the post-closure cost estimate for inflation is required as discussed below in Section 2.2.

2.2 Financial Assurance for Post Closure

In accordance with 30 TAC §330.507(b) and §37.111, CCAA will provide continuous financial assurance coverage for post-closure until the facility is officially released in writing by the executive director from the post-closure care period.

In accordance with 30 TAC §37.131, during the active life of the facility, CCAA will adjust the current cost estimate annually for inflation within 60 days prior to the anniversary of establishing the financial instrument(s) used. The evidence of any additional financial assurance will be provided to the executive director within 30 days after the anniversary date of the first establishment of the financial assurance mechanism.

The adjustment may be made by recalculating the maximum cost of post-closure in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in the Survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year. Multiplying the post-closure cost estimate by the inflation factor makes the first adjustment. The result is the adjusted post-closure cost estimate. Multiplying the latest adjusted post-closure care cost estimate by the latest inflation factor makes subsequent adjustments.

If the executive director approves a revised post-closure cost estimate prior to the annual inflation update, an additional update for inflation only is not required. The regular annual inflation update will resume the following year.

In accordance with 30 TAC §330.63(j), a copy of the financial assurance documentation for post-closure of the facility will be submitted 60 days prior to the initial receipt of waste.

3.0 COST ESTIMATE FOR CORRECTIVE ACTION

In accordance with 30 TAC §330.509, a cost estimate based on CCAA hiring a third party to perform a corrective action program as required by 30 TAC §330.415 will be prepared and submitted as a permit modification to the TCEQ, as necessary. The corrective action cost estimate will account for the total cost of corrective action activities as described in the corrective action plan for the entire corrective action period. Financial assurance will be provided for each separate corrective action program, as necessary.

3.1 Annual Update

CCAA will review the facility's conditions on an annual basis to verify that the appropriate corrective action program, as applicable, complies with the constraints of the corrective action cost estimate. Revisions will be made to the corrective action cost estimate as necessary to correct discrepancies.

An increase in the corrective action cost estimate and the amount of financial assurance provided will be made if changes in the corrective action program or unit conditions increase the maximum cost of corrective action. An increase in financial assurance to cover an increase in the cost estimate must be made within 60 days of the executive director's approval of the revised cost estimate.

A reduction in the corrective action cost estimate and the amount of financial assurance required may be allowed if the cost estimate exceeds the maximum remaining cost of corrective action at any time during the remaining corrective action period and CCAA provides written notice to the executive director with a detailed justification for the reduction of the corrective action cost estimate and the amount of financial assurance. A reduction in the cost estimate and the financial assurance will be considered a permit modification. The financial assurance will not be reduced until the revised corrective action cost estimate has been approved by the executive director.

An annual update of the corrective action cost estimate for inflation is required as discussed below in Section 3.2.

3.2 Financial Assurance for Corrective Action

In accordance with 30 TAC §330.509(b) and §37.111, CCAA will provide continuous financial assurance coverage for a corrective action program until the executive director officially releases the facility in writing from all requirements of the corrective action program after completing all work specified in the corrective action plan.

In accordance with 30 TAC §37.131, during the active life of the facility, CCAA will adjust the current cost estimate annually for inflation within 60 days prior to the anniversary of establishing the financial instrument(s) used. The evidence of any additional financial assurance will be provided to the executive director within 30 days after the anniversary date of the first establishment of the financial assurance mechanism.

The adjustment may be made by recalculating the maximum cost of the corrective action program in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in the Survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year. Multiplying the corrective action cost estimate by the inflation factor makes the first adjustment. The result is the adjusted corrective action cost estimate. Multiplying the latest adjusted corrective action cost estimate by the latest inflation factor makes subsequent adjustments.

If the executive director approves a revised corrective action cost estimate prior to the annual inflation update, an additional update for inflation only is not required. The regular annual inflation update will resume the following year.

TABLES

**TABLE 9-1
FORCED CLOSURE COST ESTIMATE
BRAZOS VALLEY DISPOSAL FACILITY
BRAZOS COUNTY, TX**

Item No.	Cost Items	Estimated Quantities	Units	Approx. Unit Cost	Extended Cost	Comments
Engineering						
1	Topographic Survey	1	ls	\$7,500	\$7,500	Survey of waste disposal areas
2	Boundary Survey for Affidavit	1	ls	\$10,000	\$10,000	Metes and bounds description
3	Site Evaluation	1	ls	\$10,000	\$10,000	Site visit and letter report
4	Development of Plans	1	ls	\$25,000	\$25,000	Final cover design and specifications, grading and drainage plans, TPDES permit, revegetation specs.
5	Project Management, Construction Observation and Testing, Preparation of Evaluation Report	21.8	acres	\$4,500	\$98,100	Maximum Closure Area is approximately 21.8 acres
	Engineering Cost Subtotal				\$150,600	
Construction						
6	Site Mobilization	1	ls	\$25,000	\$25,000	
7	Perimeter Channels	0	lf	\$0	\$0	
8	Add-On Berms	10,534	lf	\$21	\$221,214	Place over final cover slopes at 25 vert. foot intervals
9	Downchutes	1,868	sy	\$40	\$74,720	
10	6-in Vegetative Cover Soil	17,585	cy	\$3.00	\$52,756	6" over entire forced closure area
11	18-in Clay Cover	52,756	cy	\$3.80	\$200,473	
12	Revegetation	21.8	acres	\$1,500	\$32,700	
13	Surveying for Construction/As-built	21.8	acres	\$1,500	\$32,700	
	Construction Cost Subtotal				\$639,563	
	Engineering and Construction Cost Total				\$790,163	
14	Contract Performance Bond (1.5% of Construction Cost)		1.5%		\$9,593	
15	Contingency (10% of Final Closure Cost)		10%		\$79,016	
16	Contract Administration (5% of Construction Cost)		5%		\$31,978	
	Closure Cost Subtotal				\$910,751	
17	Legal Fees		5%		\$45,538	
	Closure Cost Grand Total				\$956,288	



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**TABLE 9-2
POST-CLOSURE COST ESTIMATE
BRAZOS VALLEY DISPOSAL FACILITY
BRAZOS COUNTY, TX**

Item No.	Cost Items	Estimated Quantities	Units	Events per year	Approx. Unit Cost	Annual Cost	Five-Year Cost
	Groundwater Monitoring System Costs						
1	Sampling and Analysis Costs of Groundwater Monitoring Wells	5	wells/event	1	\$1,200	\$6,000	\$30,000
2	Groundwater Monitoring System Maintenance	1	wells	0.2	\$7,500	\$1,500	\$7,500
	Other environmental monitoring costs						
3	Surface Water Monitoring	1	event	1	\$850	\$850	\$4,250
4	Methane Monitoring	1	event	4	\$1,560	\$6,240	\$31,200
	Cover System Maintenance						
5	Engineering Inspections	1	inspection	1	\$2,000	\$2,000	\$10,000
6	Correctional Plans and Specifications	1	event	0.2	\$5,000	\$1,000	\$5,000
7	Cap Repairs	1	event	1	\$19,867	\$19,867	\$99,337
8	Mowing	39.6	acres	1	\$60	\$2,376	\$11,880
9	Detention Pond Cleanout	1	ponds	0.2	\$10,000	\$2,000	\$10,000
10	Access Road Maintenance	1	maintenance	1	\$2,000	\$2,000	\$10,000
	Post-Closure Costs Subtotal						\$219,167
11	Contract Administration (5% of Subtotal)						\$10,958
12	Contingency (10% of Subtotal)						\$21,917
	Post-Closure Costs Grand Total						\$252,042



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**APPENDIX A
FORCED CLOSURE COST CALCULATIONS**



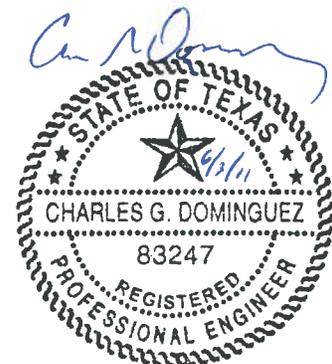
CALCULATIONS

Date:	5/17/2011	Made by:	JLY
Project No.:	103-94596	Checked by:	LAL
Subject:	Forced Closure Cost Estimate	Reviewed by:	CAD
Project Title:	Brazos Valley Disposal Facility		

- | | | |
|----|---|---------------------|
| 10 | 6-in Vegetative/Protective Cover Soil Placement
Unit cost (based on recent experience) = | \$3.00 cy |
| 11 | 18-in Clay Cover
Assume on-site low permeability soil will be used.
Unit cost (based on recent projects) = | \$3.80 / cubic yard |
| 12 | Revegetation
Includes seeding and fertilizing.
Unit cost (based on recent projects) = | \$1,500 / acre |
| 13 | Surveying for Construction/As-built
Based on similar projects in area. | |
| 14 | Contract Performance Bond
Typically ranges from 1 to 1.8%.
Assume 1.5% | |
| 15 | Contingency
Assume 10% of construction cost | |
| 16 | Contract Administration
Evaluate contracts, prepare RFP for third party, prepare public notices, negotiate contracts, certification of final cover, and provide affidavit to the public. | |
| 17 | Legal Fees
Assume 5% of total estimated closure cost | |

RESULTS: See Table 9-1 for Forced Closure Cost Estimate.

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For Sheets 1-2

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APPENDIX B
POST-CLOSURE COST CALCULATIONS

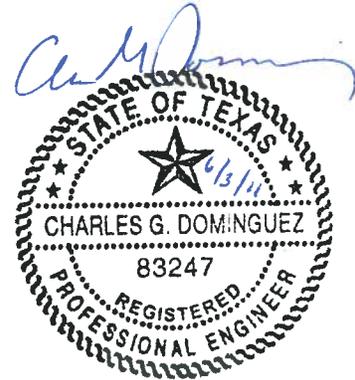


CALCULATIONS

Date:	5/17/2011	Made by:	JLY
Project No.:	103-94596	Checked by:	LAL
Subject:	Post-Closure Cost Estimate	Reviewed by:	C&D
Project Title:	Brazos Valley Disposal Facility		

- 9 Erosion Control / Detention Pond Cleanout
Assume detention pond requires cleaning once during the post-closure period.
Unit Cost = \$10,000 / pond
- 10 Access Road Maintenance
Assume \$2,000 per year during the post-closure period.
- 11 Contract Administration
Assume 5% of subtotal
- 12 Contingency
Assume 10% of subtotal

RESULTS: See Table 9-2 for Post-Closure Cost Estimate.



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