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ATTACHMENT 7

CLOSURE PLAN 330.63(h)

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Prepared for:

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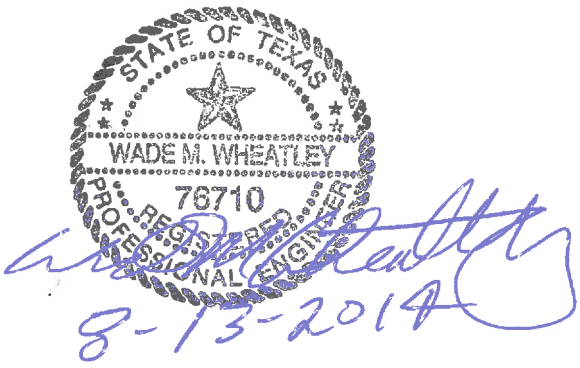

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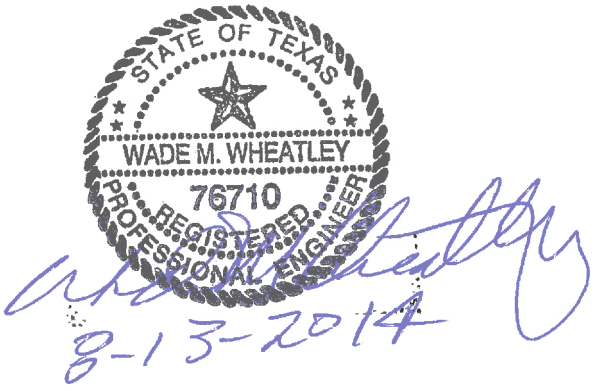

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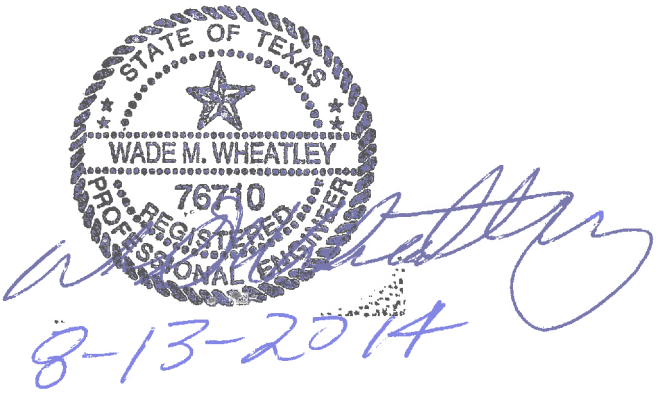
APPENDIX



ATTACHMENT 7
CLOSURE PLAN 330.63 (h)

1.0 INTRODUCTION

This Closure Plan has been developed in accordance with 30 TAC 330.63(h) and 30 TAC 330, Subchapter K, and will be maintained in the site operating record. This Plan addresses closure of landfill support areas and landfill sections (cells) during the active life of the facility, as well as final closure of the entire landfill, receiving/staging areas, and support facilities. Included in the plan are a description of the final cover design, methods, and procedures to install the cover; an estimate of the largest area of the landfill requiring final cover during the active life of the facility; an estimate of the maximum inventory of wastes onsite over the active life of the facility; a proposed completion schedule and certification; and drawings that show the final constructed contour and cross-sections of the entire landfill, including internal drainage and sideslopes, accommodation of surface drainage entering and exiting the completed fill area., Also included in this closure plan is an estimate of cost for final closure. There are no areas onsite subject to flooding due to a 100-year storm event.

2.0 FINAL COVER DESCRIPTION 330.457(a), (b) AND (e)(1)

The final cover design shown in Figure 3-12 has been developed to minimize the potential for surface water to infiltrate the covered waste and provide long term, low maintenance protection of the landfilled wastes. The system will contain:

- an erosion layer comprised of vegetated soil and a drainage geocomposite configured to minimize erosion; and
- an infiltration layer comprised of a geomembrane and cohesive soil to act as a barrier to stormwater infiltration.

The specific components of the system are (from the top of waste up):

- 1.5 ft of cohesive soil compacted to achieve a hydraulic conductivity less than or equal to 1 x 10^{-5} cm/sec;

- a 40-mil textured linear low-density polyethylene (LLDPE) geomembrane;
- a geocomposite drainage layer composed of geotextile overlying geonet for the flatter top portion of the landfill and a geotextile on both sides of the geonet for the sideslopes;
- 2 ft of soil capable of sustaining native vegetation, and
- Graded drainage features and a vegetated surface.

The final cover will be constructed as shown in the figures in Attachment 3 and in accordance with Exhibit 3D-1, Soils and Geosynthetics Construction Quality Assurance Plan. Following installation of the final cover and during the early stages of vegetative growth on the landfill surface, mulching, slope re-grading, and mowing will be performed as required to complete vegetative coverage and effective erosion control. See Attachment 2 for more information regarding permanent erosion control and site drainage.

Periodic inspections of the final cover surface are required during the remaining operational life of the site and during the post-closure maintenance period.

3.0 CLOSURE ACTIVITIES

Closure activities on individual landfill cells may occur throughout the active life of the Post Oak Landfill facility. These activities will involve installation of the final cover, construction of drainage and erosion control attributes, and establishment of vegetative cover. This process may continue until all cells have been closed. All areas, regardless of the time of closure, will be closed in accordance with the closure plan, Final Cover Evaluation Report (FCER) and applicable regulations.

3.1 MAXIMUM AREA REQUIRING FINAL COVER (330.457(e)(2))

For early landfill operations, the maximum area of landfill ever requiring final cover is 25 acres. This area corresponds to two active cells (roughly 22.7 acres) plus 10% to account for sideslopes. Since the closure will occur over numerous years as the landfill is developed and filled, the closure cost developed for this permit is based on the cost, in current dollars, of hiring a third party to close this 25 acre area. At least annually, the facility will:

1. review the landfill's past waste acceptance rate and current fill areas not already closed;

2. project future and waste acceptance rates and expected new fill area needs at least one year into the future;

3. recalculate the expected cost to close the landfill should closure occur within the coming year; and

4. document the results of these evaluations in the operating record.

If this calculated amount exceeds the closure cost estimate approved by TCEQ, an updated estimate and financial assurance mechanism will be submitted to TCEQ that reflects the appropriate amount of financial assurance.

3.2 MAXIMUM INVENTORY OF WASTES (330.457(e)(3))

The inventory of wastes (waste capacity) in this landfill are municipal solid wastes which are compacted in place at the working face as they are received. The landfill disposal airspace of this landfill, as calculated in Appendix 3A, is approximately 87 million cubic yards (approximately 331 acres x 163 ft approximate average depth), representing the volume between the top of liner system and the bottom of final cover and includes waste, daily and intermediate cover soils. A waste utilization factor of 0.8 tons/cy was assumed in the waste capacity calculations (i.e. on average, each cubic yard of airspace will be composed of soil and 1600 pounds of waste). This yields a waste capacity of 69,640,000 tons.

Appendix 3A contains the estimated waste receipt rates for the projected life of the landfill.

3.3 EVAPORATION POND (330.459)

The facility's evaporation pond will be closed with the remainder of the facility. The closure plan for the evaporation pond is:

1) Any leachate in the evaporation pond at the initiation of closure activities will be allowed to evaporate. However, in the event that adverse weather prevents leachate evaporation, the cost to dispose of a volume of leachate equaling one-half (50%) of the volume of the evaporation pond has been included in the closure cost estimate. For the

purposes of the closure cost estimate, it has been assumed that the larger pond (designed for an average daily contaminated water flow of 5,000 gallons) specified in Exhibit 3C-5 of this Application will be installed at the Site.

2) Any sediment left in the pond after the removal of the leachate and other contaminated water will be removed, sampled for concentrations of total metals[1], characterized for disposal, and disposed of at a 3rd party off-site disposal facility.

3) After the sediment is removed, the synthetic liner will be removed, cut up, and disposed of at a 3rd party off-site disposal facility.

4) After the liner is removed, the clay underlying the former liner will be sampled for concentrations of total metals. Samples will be preferentially collected at locations where there is evidence of a liner leak or penetration. If there is no such evidence, then one sample will be collected from each sidewall and two samples will be collected from the base of the pond. The analytical results will be used to determine if a release has occurred.

[1] For the purposes of this application, total metals will refer to the following metals: antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, and silver.

4.0 CLOSURE OF CITIZEN CONVENIENCE AREA (330.459)

Materials in the citizen convenience area will be placed in the landfill or transported offsite for disposal, as appropriate. As a conservative measure costs for disposal of this material at an off-site, 3rd party landfill are provided as part of the closure costs. Convenience area structures will either be dismantled and disposed offsite, or will be decontaminated and remain onsite. During closure activities, Post Oak will conduct a visual inspection of the facilities, and if there is evidence of a release from any portion of the convenience area to the environment, Post Oak will investigate the potential release and take appropriate measure to remediate any actual release.

5.0 CLOSURE COMPLETION SCHEDULE (330.457(E)(4) AND 330.165(C))

No later than 30 days after the landfill unit reaches capacity and has received its final volume of waste, final closure activities shall begin and suitable barriers shall be erected to prevent the unauthorized dumping of solid wastes after closure. If a unit has remaining capacity and there is a reasonable likelihood that the unit will receive additional wastes, no later than one year after the most recent receipt of wastes,, but has stopped accepting waste temporarily, closure may be delayed up to one year or as approved by the executive director in accordance with 30 TAC 330.457(f)(3). In such cases, an intermediate cover will be installed, in accordance with 30 TAC 330.165(c), on areas that have received waste but will be inactive for longer than 180 days. No waste will be received at the facility after the waste capacity of the landfill is reached. Any inventory of recyclable materials remaining onsite will be removed and transported offsite for recycling at an authorized facility, as appropriate, upon final closure of the facility. Additionally, any wastes generated onsite after waste capacity of the landfill is reached, will be sent offsite to an authorized disposal facility. All waste, waste residues, and any recoverable materials will be removed from the facility storage and processing area and units will be decontaminated. If there is evidence of a release from any of the units, the operator shall investigate the potential release and remediate any confirmed releases in accordance with Commission rules.

No later than 90 days before final site closure begins, public notice for final closure of the landfill facility will be published in the newspaper with the largest circulation in the area of the landfill, provided to TCEQ, and placed in the facility's Operating Record in accordance with 330.461(a). The name, address and physical location of the landfill facility, the permit number, and the last

date that waste is to be received will be included in the published notice. An adequate number of copies of the Closure and Post-Closure Plans will be provided for public review.

No later than 45 days before final site closure begins, written notification of the intent to close the landfill facility will be submitted to TCEQ and also placed in the Site Operating Record. Signs will be posted at all points of access notifying facility users of the upcoming closure date to help prevent unauthorized dumping of wastes after the facility is closed.

No later than 180 days after landfill unit closure activities are initiated, final closure activities for all waste management units on the facility are to be completed. These activities include placing the compacted soil infiltration layer, erosion protection layer, and vegetation. TCEQ approval will be requested if circumstances require more than 180 days to complete final closure.

Within 10 days of completion of the site closure activities, an Affidavit to the Public, meeting the requirements found in 330.19, will be filed in the deed records in the office of the County Clerk of Guadalupe County in accordance with 330.457(g). A certified copy of the Affidavit to the Public will be submitted to TCEQ by registered mail and also filed in the Site Operating Record. The Affidavit will include a metes and bounds description of the limits of disposal areas and may include a site plan illustrating the area actually filled with solid waste. In addition, a certified notation on the deed to the facility will be made that notifies any potential buyer of the property that the land had been used as a landfill and use of the land is restricted by provisions in the Post-closure Care Plan and by TCEQ rule. Within 10 days after completion of closure of all landfill units, a certified copy of the modified deed will be submitted to the executive director. A copy of the modified deed will also placed in the operating record.

Post-closure will commence immediately upon the date final closure is approved by the Executive Director.

6.0 CLOSURE CERTIFICATION (330.457(f)(5))

Following completion of all final closure activities, Post Oak will submit a documented certification, signed by an independent professional engineer, verifying that final closure has been completed in accordance with the approved final closure plan. The certification will be submitted to the Executive Director by registered mail for review and approval. The submittal to

the Executive Director will include all applicable documentation necessary for certification of final closure. Once approved, this certification will be placed in the operating record.

Following receipt of the closure documentation and an inspection record from the TCEQ regional office, TCEQ may acknowledge the termination of operations and closure and deem the landfill property closed.

7.0 COST ESTIMATE FOR FINAL CLOSURE (330.63(j), 330.503, AND 330.505)

A closure cost estimate has been prepared in accordance with 30 TAC Chapter 330, Subchapter L and developed based on the cost, in current dollars, of hiring a third party to close the largest area of all disposal units requiring final cover at any time during the active life. Two closure cost estimates have been prepared for Post Oak. Table 7A-1 provides a closure cost estimate to close the initial fill area. The initial fill area is about 25 acres and during early landfill operations, is considered the largest area ever requiring final cover. Closure costs for the waste citizen convenience area assume that a third party will remove any remaining waste inventory for offsite disposal and, if necessary, conduct decontamination activities of the citizen convenience area structures. The cost estimate (Table 7A-1) is presented in Appendix 7A of this plan and represents the amount of financial assurance that must be provided for the site per 330.503, Subchapter K.

A second closure cost estimate has also been provided as Table 7A-2. It provides the anticipated costs to close a significant portion of the landfill (a 100-acre portion of the waste footprint, the Citizen Convenience area, and support areas). This cost estimate is based on a scenario where the landfill has received its final volume of waste but a significant portion of the landfill (100 acres) has not received final cover. As such it represents a significant potential amount of financial assurance that could be required after the landfill reaches final fill volume.

During the active life of the site, the applicant will annually adjust the closure cost estimates for inflation. Any inflation adjustments must be made within 60 days prior to the anniversary date of the establishment of the closure financial instrument(s). Financial assurance must be provided per 330.503, Subchapter K.

Also during the active life of the site, the cost estimate presented in Table 7A-1 and the amount of financial assurance may either be increased or reduced if the maximum area of the site

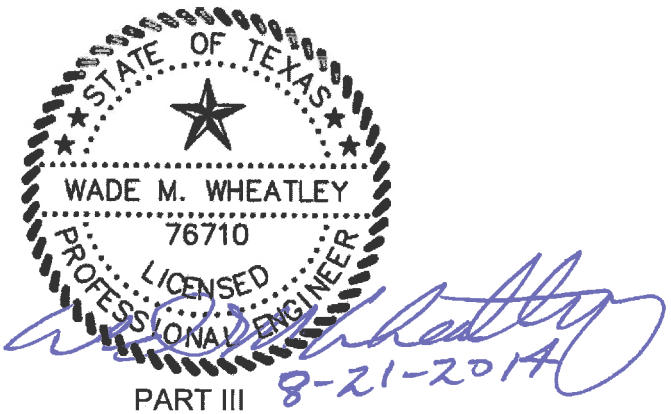
requiring final cover changes. A reduction in the cost estimate must be approved by the TCEQ as a Permit modification. After the TCEQ has approved the modification, Post Oak will submit a request to reduce the cost estimate and the financial assurance within 60 days prior to the anniversary date for the annual review and shall include the documentation necessary for the annual review.

APPENDIX 7A
CLOSURE COST ESTIMATES

TABLE 7A-1 - POST OAK LANDFILL
CLOSURE COST ESTIMATE – LARGEST AREA REQUIRING CLOSURE

ENGINEERING	UNIT	COST	QUANTITY	TOTAL COST
Boundary and Topographic Survey	LS	$15,000	1	$15,000
Site Evaluation	LS	5,000	1	5,000
Development of Final Closure Construction Plans	AC	1,000	25	25,000
Construction Administration, Bidding and Award	LS	10,000	1	10,000
Administrative/Affidavit to the Public	LS	3,000	1	3,000
Environmental Evaluation of Former Evaporation Pond	AC	2,000	4	8,000
Closure Inspection and Testing	AC	5,000	25	125,000
SUBTOTAL				$191,000
10% Contingency				19,100
ENGINEERING TOTAL				$210,100
CONSTRUCTION				
1.5' Cohesive Soil Infiltration Layer	CY	5.00	60,500	302,500
LLDPE Geomembrane	AC	16,500	25	412,500
Geosynthetic Drainage Layer	AC	14,000	25	350,000
2' Soil Erosion Layer	CY	2.00	80,700	161,400
Backfill for Unfilled Excavation	CY	2.00	277,000	554,000
Final Grading and Drainage	AC	3,500	25	87,500
Vegetative Cover	AC	3,000	34	102,000
Site Fencing and Security Repairs	LS	2,500	1	2,500
Gas Monitoring Probe Installation	EA	3,500	2	7,000
Leachate/Contaminated Water Disposal	GAL	0.15	1,387,075	210,000
Disposal of Evaporation Pond Sediment	CY	50	1,620	81,000
Disposal of Evaporation Pond Liner	CY	50	1,050	52,500
Removal of material at CCA & 3rd party disposal	LS	16,500	1	16,500
SUBTOTAL				$2,339,400
10% Contingency				233,940
CONSTRUCTION TOTAL				$2,573,340
SUBTOTAL CONSTRUCTION + ENGINEERING				$2,783,440
LEGAL FEES **(10%)**				278,344

TOTAL CLOSURE COST = $3,061,784



NOTES:

The waste footprint of this landfill, as defined in the site development plan, is approximately 331 acres. Based on the planned site operations, the largest portion of the landfill which could require final cover at any given time is estimated as 25 acres (two open cells (Cells 1 and 2) + 10% to account for slopes). The cost estimate includes placing final cover and providing testing and certifications for this 25 acre area as well as the citizen collection area.

TABLE 7A-1 - POST OAK LANDFILL
CLOSURE COST ESTIMATE COST DESCRIPTIONS

Cost Description	Unit Rate	Costing Assumptions
Boundary and Topographic Survey	$15,000 – LS	Cost based on recent experience.
Site Evaluation	$5,000 – LS	Cost based on experience and similar submittals.
Development of Final Closure Construction Plans	$1,000/AC	Cost based on experience and similar submittals.
Construction Administration, Bidding and Award	$10,000 – LS	Cost based on experience and similar submittals.
Administrative/Affidavit to the Public	$3,000 – LS	Cost based on a recent project.
Closure Inspection and Testing	$5,000/AC	Cost based on experience and similar submittals.
1.5' Clay Soil Cover	$5/CY	
LLDPE Geomembrane	$16,500/AC	Cost based on recent landfill capping quote.
Drainage Layer	$14,000/AC	
2' Topsoil Layer	$2/CY	Cost based on a recent quote. On-site source of topsoil is available. Average dimension of backfill = 2200 lf x 170 ft wide x 20 ft deep = 277,000 cy
Backfill for Unfilled Excavation	$2/CY	
Final Grading and Drainage	$3,500/AC	Cost based on a recent quote.
Vegetative Cover	$3,000/AC	Cost based on a recent quote. This cost estimate assumes that two landfill cells+ 10% plus the surface area of the unfilled excavation that will be backfilled will be vegetated = 25 ac + 9 ac = 34 ac.
Site Fencing and Security	$2,500 -- LS	Cost based on experience and similar submittals.
Environmental Evaluation of Former Evaporation Pond	$2,000/AC	Cost based on experience. Assumes an analytical cost of $140 per sample plus 8 staff hours ($680) to collect the samples. The additional cost represents consulting time to characterize the sediment waste and evaluate the results of the clay liner samples.
Gas Monitoring Probe Installation	$3,500 EA	Cost based on experience. Includes a per foot drilling/well installation cost for two 35 foot deep probes. Also includes a mob charge, costs per surface completion, and cost for well report. Assumes that 1 probe will be installed every 1,000 feet along the south and west perimeter of cells 1 and 2 for a total of 2 probes.
Leachate/Contaminated Water Disposal	$0.15/GAL	Cost based on experience. Because the proposed evaporation pond has a design capacity of 4.25 acre-feet, the disposal volume has been assumed to be 4.25 acre-feet (185,130 cubic feet / 1,385,075 gallons of water).
Disposal of Evaporation Pond Sediment	$50/CY	The cost estimate assumes an average of 3 inches of sediment will be removed from the base of the pond. Because the base of the larger pond is 418 feet x 418 feet, the volume of sediment is estimated at 3,236 cubic yards).
Disposal of Evaporation Pond Liner	$50/CY	The estimate to remove the liner assumes that the total surface area of the liner is 5.2 acres (based on the 4 acre design size + 30%), and that a minimum of soil will be removed and disposed of with the liner (i.e., the liner thickness is ~1.5 inches).

Cost Description	Unit Rate	Costing Assumptions
Removal of material at CCA	$16,500 -- LS	Disposal of 90 cy of material at $50/cy, including recyclables, at $50/cy. Assumes disposal/processing at 3rd party facility. Also assumes transportation for MSW, recyclables, used oil, used oil filters, lead acid batteries, white goods, and scrap tires at $1500 per trip.

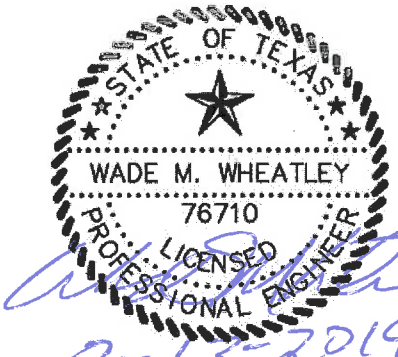
TABLE 7A-2 - POST OAK LANDFILL
CLOSURE COST ESTIMATE – CLOSURE OF SIGNIFICANT PORTION OF LANDFILL

ENGINEERING	UNIT	COST	QUANTITY	TOTAL COST
Boundary and Topographic Survey	AC	$150	331	$49,650
Site Evaluation	LS	10,000	1	10,000
Development of Final Closure Construction Plans	AC	500	100	50,000
Construction Administration, Bidding and Award	LS	25,000	1	25,000
Administrative/Affidavit to the Public	LS	3,000	1	3,000
Environmental Evaluation of Former Evaporation Pond	AC	2,000	4	8,000
Closure Inspection and Testing	AC	2,500	100	250,000
SUBTOTAL				$395,650
10% Contingency				39,565
ENGINEERING TOTAL				$435,215
CONSTRUCTION				
1.5' Cohesive Soil Infiltration Layer	CY	5.00	242,000	1,210,000
LLDPE Geomembrane	AC	16,500	100	1,650,000
Geosynthetic Drainage Layer	AC	14,000	100	1,400,000
2' Soil Erosion Layer	CY	2.00	322,800	645,600
Backfill for Unfilled Excavation	CY	2.00	0	0
Final Grading and Drainage	AC	3,500	100	350,000
Vegetative Cover	AC	3,000	100	300,000
Site Fencing and Security Repairs	LS	2,500	100	2,500
Leachate/Contaminated Water Disposal	GAL	0.15	1,387,075	210,000
Disposal of Evaporation Pond Sediment	CY	50	1,620	81,000
Disposal of Evaporation Pond Liner	CY	50	1,050	52,500
Removal of material at CCA & 3rd party disposal	LS	16,650	1	16,500
SUBTOTAL				$5,918,100
10% Contingency				591,810
CONSTRUCTION TOTAL				$6,509,910
SUBTOTAL CONSTRUCTION + ENGINEERING				$6,945,125
LEGAL FEES (10%)				694,513

TOTAL CLOSURE COST = $7,639,638

NOTES:

The waste footprint of this landfill, as defined in the site development plan, is approximately 331 acres. This cost estimate represents the cost to close a 100-acre portion of the landfill.



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NOTES:

The waste footprint of this landfill, as defined in the site development plan, is approximately 331 acres. This cost estimate represents the cost to close a 100-acre portion of the landfill.

TABLE 7A-2 - POST OAK LANDFILL
CLOSURE COST ESTIMATE COST DESCRIPTIONS

Cost Description	Unit Rate	Costing Assumptions
Boundary and Topographic Survey	$300/AC	Per acre modification of cost presented in Table 7A-1. Value ½ as large as the cost presented in Table 7A-1 used here based on an economy of scale.
Site Evaluation	$100/AC	Per acre modification of cost presented in Table 7A-1. Value ½ as large as the cost presented in Table 7A-1 used here based on an economy of scale.
Development of Final Closure Construction Plans	$500/AC	Cost based on experience and similar submittals. Value ½ as large as the cost presented in Table 7A-1 used here based on an economy of scale.
Construction Administration, Bidding and Award	$25,000 – LS	Cost based on experience and similar submittals. Assumes an economy of scale over similar value provided in Table 7A-1.
Administrative/Affidavit to the Public	$3,000 – LS	Cost based on a recent project.
Closure Inspection and Testing	$4,000/AC	Cost based on experience and similar submittals. Assumes an economy of scale over similar value provided in Table 7A-1.
1.5' Clay Soil Cover	$5/CY	Cost based on recent landfill capping quote. Quantity of 60,500 obtained by dividing value presented in Table 7A-1 (60,500) by 25 acres and then multiplying it by 100 acres.
LLDPE Geomembrane	$16,500/AC	Cost based on recent landfill capping quote.
Drainage Layer	$14,000/AC	
2' Soil Erosion Layer	$2/CY	Cost based on a recent quote. Quantity of 322,800 obtained by dividing value presented in Table 7A-1 (80,700) by 25 acres and then multiplying it by 100 acres.
Backfill for Unfilled Excavation	$2/CY	Cost based on a recent quote. On-site source of topsoil is available. Because this cost estimate assumes that the landfill has been completely filled, a cost for $0 is provided here.
Final Grading and Drainage	$3,500/AC	Cost based on a recent quote.
Vegetative Cover	$3,000/AC	Cost based on a recent quote.
Site Fencing and Security	$2,500 -- LS	Cost based on experience and similar submittals.
Environmental Evaluation of Former Evaporation Pond	$2,000/AC	Cost based on experience. Assumes an analytical cost of $140 per sample plus 8 staff hours ($680) to collect the samples. The additional cost represents consulting time to characterize the sediment waste and evaluate the results of the clay liner samples.
Leachate/Contaminated Water Disposal	$0.15/GAL	Cost based on experience. Because the proposed evaporation pond has a design capacity of 8.5 acre-feet, the disposal volume has been assumed to be 4.25 acre-feet (185,130 cubic feet / 1,385,075 gallons of water) due to ability to recirculate half the leachate over the 100 acres of unclosed landfill.
Disposal of Evaporation Pond	$50/CY	The cost estimate assumes an average of 3 inches of

Cost Description	Unit Rate	Costing Assumptions
Sediment		sediment will be removed from the base of the pond. Because the base of the larger pond is 418 feet x 418 feet, the volume of sediment is estimated at 3,236 cubic yards).
Disposal of Evaporation Pond Liner	$50/CY	The estimate to remove the liner assumes that the total surface area of the liner is 5.2 acres (based on the 4 acre design size + 30%), and that a minimum of soil will be removed and disposed of with the liner (i.e., the liner thickness is ~1.5 inches).
Removal of material at CCA	$16,500 -- LS	Disposal of 90 cy of material, including recyclables, at $50/cy. Assumes disposal/processing at 3rd party facility. Also assumes transportation for MSW, recyclables, used oil, used oil filters, lead acid batteries, white goods, and scrap tires at $1500 per trip.