

**SITEWIDE
CLOSURE, POST-CLOSURE
AND
CORRECTIVE MEASURES
COST ESTIMATES**

*[NOTE: Portions of these Cost Estimates are being modified. These modifications are based on those requested by CWM Chemical Services, L.L.C. as part of their Part 373 Permit modification application for the RMU-2 Landfill and associated units. The Department has also made some proposed modifications to these cost estimates in order to make them acceptable for our tentative approval. All proposed modifications to the current Department-approved cost estimates are highlighted. Items/Costs proposed for addition or removal are indicated in **RED**. Certain spreadsheets to be added or removed are identified by a **RED NOTE**.]*

Revised: January 2014

**Table 1 - Summary of Site & RMU-1
Closure, Post-Closure & Corrective Measures Cost Estimate
CWM Chemical Services, L.L.C., Model City, New York
(January 2014 Department Approved Revised Estimate – With 2013 Inflation Adjustment)**

Closure Cost Estimate Summary

No.	Facility Activity Area	Total Cost: Base = 2010 Offsite Waste Disposal
1.0	PCB Warehouse	\$1,001,965
2.0	Drum Management Building	\$962,097
3.0	Fuels & PCB Management Area	\$220,984
4.0	Stabilization Area	\$1,227,316
5.0	AWTS & CSAs	\$1,266,540
6.0	FAC Ponds	\$10,268,621
7.0	CSA 29 (Truck Wash Building)	\$18,509
8.0	CSA 11 (South Trailer Park)	\$553,363
9.0	Surface Impoundments (Closed)	\$0
10.0	Laboratories	\$98,793
11.0	Roadways	\$37,195
12.0	Site Monitoring (during closure)	\$259,187
13.0	3 rd Party Leach. Trt't (during closure)	\$988,460
14.0	Residuals Management Unit – 1	\$3,367,731
	Totals	\$20,270,760

Post-Closure Cost Estimate Summary

No.	Facility Activity Area	Post-Closure One Year Cost: Base = 2010	Post-Closure Period	30-Year Post-Closure Costs
PCC-1	SLF 1 – 6 (Post-Cl)	\$611,261	30	\$18,337,820
PCC-2	SLF 7 (Post-Cl)	\$243,792	30	\$7,313,752
PCC-3	SLF 10 (Post-Cl)	\$231,706	30	\$6,951,166
PCC-4	SLF 11 (Post-Cl)	\$323,147	30	\$9,694,415
PCC-5	SLF 12 (Post-Cl)	\$248,737	30	\$7,462,111
PCC-6	Resid Mgmt Unit 1 (Post-Cl)	\$300,564	30	\$9,016,922
PCC-7	Lagoons/Salts (Post-Cl)	\$36,015	30	\$1,080,444
PCC-8	Process Tank Area (Post-Cl)	\$40,469	30	\$1,214,055
CA-1	Corrective Measures	\$426,828	30	\$12,804,855
	Totals	\$2,462,518	n/a	\$73,875,541

Closure	\$20,270,760
Post-Closure & Corrective Measures	\$73,875,541
Subtotal	\$94,146,301
Plus General Contingency	\$1,435,230
Subtotal	\$95,581,531
Previous Adjustments for inflation	\$2,040,081
Subtotal	\$97,621,612
Adjustment for inflation 2011-2012¹	\$1,782,615
Adjusted Total Cost Estimate	\$99,404,227

1. The US Department of Commerce – Bureau of Economic Analysis updated the National Income and Product Accounts Table 1.1.9. Implicit Price Deflators for Gross Domestic Product on August 5, 2013 for the year 2012. An implicit price deflator and an adjustment for inflation has been applied to the cost estimate. <http://www.bea.gov/national/nipaweb/>

Implicit Price Deflators for Gross Domestic Product
2013 Rate = 105.002 (2012 GDP) ÷ 103.119 (2011 GDP) =

2012	105.002
2011	103.119

Inflation Factor
1.018

Table 2
Summary of RMU-2 and Associated Units
Closure, Post-Closure & Corrective Measures Cost Estimates
Additions & Increased Totals
CWM Chemical Services, L.L.C., Model City, New York

1	2	3	4	5	6	7	8	9	10
No.	Facility Activity Area	Closure Cost Base = 2011 Offsite Disp.	Closure Cost Deflat. 2012 ¹ Offsite Disp.	Post-Closure 1 Year Cost Base = 2011	Post-Closure 1 Year Cost Deflat. 2012 ¹	Post-Closure Period	30-Year Post-Closure Costs	Total Clos./P-Clos. Increase ³	New Total Cost Estimate ⁴
15.01	RMU-2 (1 cell)	\$4,810,069	\$4,897,903	\$30,781	\$31,343	30	\$940,290	\$5,838,193	\$105,242,420
6.04	New Fac Pond 5	\$503,418	\$512,611	n/a	n/a	n/a	n/a	\$512,611	\$105,755,031
5.32	AWTS (Fac Pond 5 tank)	\$3,752	\$3,821	n/a	n/a	n/a	n/a	\$3,821	\$105,758,852
15.02	RMU-2 (2 cells)	\$10,330,917	\$10,519,564	\$49,836	\$50,746	30	\$1,522,380	\$6,203,751	\$111,962,603
15.03	RMU-2 (3 cells)	\$11,505,630	\$11,715,728	\$67,913	\$69,153	30	\$2,074,590	\$7,586,567	\$119,549,170
15.04	RMU-2 (4 cells)	\$12,439,038	\$12,666,181	\$78,636	\$80,072	30	\$2,402,160	\$7,481,774	\$127,030,944
2.01	New Drum Manag. Bldg.	\$981,858	\$999,787	n/a	n/a	n/a	n/a	\$999,787	\$128,030,731
4.01	New Stab. Trailer Park ²	\$679,964	\$692,380	n/a	n/a	n/a	n/a	\$692,380	\$128,723,111
15.05	RMU-2 (5 cells)	\$15,203,934	\$15,481,565	\$95,396	\$97,138	30	\$2,914,140	\$10,913,931	\$139,637,042
8.01	New Full Trailer Park	\$1,155,461	\$1,176,560	n/a	n/a	n/a	n/a	\$1,176,560	\$140,813,602
15.06	RMU-2 (6 cells)	\$15,928,417	\$16,219,277	\$127,652	\$129,983	30	\$3,899,490	\$8,912,459	\$149,726,061

FOOTNOTES:

1. **Columns 4 & 6:** The costs presented in these columns have been adjusted for inflation from their 2011 amounts (Columns 3 & 5) to their 2012 values using an Inflation Factor of 1.018. This Factor is derived by dividing the 2012 IPD for GDP of 105.002 by the 2011 IPD for GDP of 103.119. [Column 3 amounts x 1.037 = Column 4 amounts; and Column 5 amounts x 1.037 = Column 6 amounts]
2. **Sheet 4.01:** The Closure Cost for the New Stabilization Trailer Park (Column 3 amount) was determined by subtracting the total Stabilization Facility Closure Cost on **revised** Spreadsheet 4.01 [\$1,907,280] which includes the new trailer park, from the total Stabilization Facility Closure Cost on the **un-revised** Spreadsheet 4.01 which does not include the new trailer park [\$1,227,316].
3. **Column 9:** The dollar values in Column 9 represent the amount of increase in financial assurance required for each new storage unit and each RMU-2 cell upon their placement into operation. For each storage unit the amount of increase [Column 9] is the unit's 2012 closure cost estimate [Column 4]. For each RMU-2 cell the amount of the increase [Column 9] is the total closure and post-closure cost for the landfill up to and including each new cell, minus the total closure and post-closure cost of all previously operational cells (if any) [e.g., For RMU-2 (3 cells), the amount of increase for the 3rd cell (Column 9) = the closure cost estimate for 3 cells (Column 4: \$11,715,728) + the post-closure cost estimate for 3 cells (Column 8: \$2,074,590) minus the total closure and post-closure cost for 2 cells (Column 9: \$6,203,751). The amounts of each increase presented in Column 9 are in 2012 dollars and must be adjusted annually for inflation in accordance with Condition O.3 in Module I of the Part 373 Permit.
4. **Column 10:** The dollar values in Column 10 represent the cumulative total amount of financial assurance required after each increase, starting with the baseline total of \$99,404,227. These amounts are in 2012 dollars and must be adjusted for inflation as described in Footnote 3. These amounts may also be decreased subsequent to Department approval in accordance with Condition O.5 in Module I and Condition G.3 in Exhibit A in Schedule 1 of Module I of the Part 373 Permit.

CLOSURE COST ESTIMATE

1.0 PCB Warehouse

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
1.1 Inventory Verification						production rate = two persons req'd @ average of two drums/minute/crew with a 10-min break/hour	
Laborer	27.3	hours	\$39.00	\$1,065	\$1,065	2726 drums @ 100 drums/hr / 27.3 hours @ 1 units/crew = 27.3 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification (Subt: Assemblies 1.1 thru 1.1)				\$1,065	\$1,065	survey and inventory of maximum capacity of PCB Warehouse activity	(note: labor rate provided by local contractor)
1.2 Load PCB Solids Drums						production rate = 80 drums/hour/person; Facility experience	
Laborer	34.2	hours	\$39.00	\$1,334	\$1,334	1363 drums @ 80 drums/hr = 17.0 hours @ 2 units/crew = 34.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	17.1	hours	\$22.21	\$380	\$380	1363 drums @ 80 drums/hr = 17.0 hours @ 1 units/crew = 17.1 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	17.1	hours	\$6.26	\$107	\$107	1363 drums @ 80 drums/hr = 17.0 hours @ 1 units/crew = 17.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load PCB Sol Drms to L'Fill				\$1,821	\$1,821		
1.3 Transport to Onsite Landfill						assumes on-site disposal	
Road Tractor (4 x 2, 30-ton)	8.5	hours	\$32.45	\$0	\$276	1363 drums @ 80 drums/load = 17.1 loads @ 0.5 hr/load = 8.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	8.5	hours	\$45.00	\$0	\$383	1363 drums @ 80 drums/load = 17.1 loads @ 0.5 hr/load = 8.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	8.5	hours	\$6.26	\$0	\$53	1363 drums @ 80 drums/load = 17.1 loads @ 0.5 hr/load = 8.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp Drms to Onsite L'Fill				\$0	\$712		
1.4 Unload PCB Solids Drums/L'Fill						assumes on-site disposal: production rate = 80 drums/hour/person; Facility experience	
Laborer	34.2	hours	\$39.00	\$0	\$1,334	1363 drums @ 80 drums/load = 17.1 loads @ 2 units/crew = 34.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	17.1	hours	\$22.21	\$0	\$380	1363 drums @ 80 drums/load = 17.1 loads @ 1 units/crew = 17.1 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	17.1	hours	\$6.26	\$0	\$107	1363 drums @ 80 drums/load = 17.1 loads @ 1 units/crew = 17.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Drms at Onsite L'Fill				\$0	\$1,821		
1.5 Offsite Disp:PCB Solids Drm						assumes off-site land disposal; 80 drms/load	
Offsite Transportation	6583.5	miles	\$3.50	\$23,042	\$0	1363 drums @ 80 drums/ld = 17.1 loads @ 385 miles/trip = 6583.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Landfill	1363	drums	\$100.00	\$136,300	\$0	1363.00 drums	HWC/ETC 2004 & CWM 2011
Subt - Offsite Disp:PCB Solids Drm (Subt: Assemblies 1.2 thru 1.5)				\$159,342	\$0	loading, off-site transporting, and off-site disposal of drummed PCB solids	
				\$161,163	\$4,353		
1.6 Load Drums for Bulking						production rate = 80 drums/hour; facility experience	
Laborer	34.2	hours	\$39.00	\$1,334	\$1,334	1363 drums @ 80 drums/hr = 17.1 hours @ 2 units/crew = 34.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	17.1	hours	\$22.21	\$380	\$380	1363 drums @ 80 drums/hr = 17.1 hours @ 1 units/crew = 17.1 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	17.1	hours	\$6.26	\$107	\$107	1363 drums @ 80 drums/hr = 17.1 hours @ 1 units/crew = 17.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Drums for Bulking				\$1,821	\$1,821		
1.7 Transport to Onsite Bulking						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	8.5	hours	\$32.45	\$276	\$276	1363 drums @ 80 drum/load = 17.1 loads @ 0.5 hours/trip = 8.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	8.5	hours	\$45.00	\$383	\$383	1363 drums @ 80 drum/load = 17.1 loads @ 0.5 hours/trip = 8.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	8.5	hours	\$6.26	\$53	\$53	1363 drums @ 80 drum/load = 17.1 loads @ 0.5 hours/trip = 8.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transport Drums to Bulking				\$712	\$712		

1.0 PCB Warehouse

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
1.8 Unload Drums for Bulking							
						production rate = 80 drums/hour; facility experience	
Laborer	34.2	hours	\$39.00	\$1,334	\$1,334	1363 drums @ 80 drums/hr = 17.1 hours @ 2 units/crew = 34.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	17.1	hours	\$22.21	\$380	\$380	1363 drums @ 80 drums/hr = 17.1 hours @ 1 units/crew = 17.1 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	17.1	hours	\$6.26	\$107	\$107	1363 drums @ 80 drums/hr = 17.1 hours @ 1 units/crew = 17.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Drums for Bulking (Subt: Assemblies 1.6 thru 1.8)				\$1,821	\$1,821	loading, onsite transporting, and unloading of drummed PCB liquids/sludges for bulking	
				\$4,353	\$4,353		
1.9 Bulk Liquids into Tankers							
						prod'n rate = facility estimate = 5 min/drum (bulking only); employs a 2-person crew	
Laborer	26.7	hours	\$39.00	\$1,041	\$1,041	160 drums @ 12 drums/hr = 13.3 hours @ 2 units/crew = 26.7 hours	two laborers; rate 2011 3rd party quote
Pumping Equipment	13.3	hours	\$71.47	\$951	\$951	160 drums @ 12 drums/hr = 13.3 hours @ 1 units/crew = 13.3 hours	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,000 Gallons)	0	hours	\$6.31	\$0	\$0		T&D rate below includes tanker
Decon Drums (no decon performed)	0	drums	\$0.00	\$0	\$0	0 drums	
Subt - PCB Liquids into Tankers				\$1,992	\$1,992		
1.10 Transport Liquids Offsite							
						capacity per 5,000-gal tanker = ninety (90) 55-gal drums	
Transport in 5,000 Gal Tanker	3058	miles	\$3.50	\$10,703	\$10,703	160 drums @ 90 drms/tankr = 1.8 (↑2) loads @ 1529 miles/trip = 3058 miles	Rate: transporters quote/site experience
Subt - Offsite Transp/PCB Liquids				\$10,703	\$10,703		
1.11 Offsite Liquids Disposal							
						incineration of liquid PCB wastes	
Disposal Cost (Incin PCB Liquids)	8800	gallons	\$4.68	\$41,184	\$41,184	160 drums @ 55 gal/drum = 8800 gallons	HWC/ETC 2004 & Current third party rate
Subt - Offsite Liquids Disposal (Subt: Assemblies 1.9 thru 1.11)				\$41,184	\$41,184	bulking and off-site transportation and disposal of PCB liquids	
				\$53,879	\$53,879		
1.12 Bulk Sludges for Offsite T&D							
						prod'n rate = facility estimate = 5 min/drum (bulking only); employs 2-person crew	
Laborer	200.6	hours	\$39.00	\$7,823	\$7,823	1203 drums @ 12 drums/hr = 100.3 hours @ 2 units/crew = 200.6 hours	one forklift oper plus one helper; rate 2011 3rd party quote
Forklift	100.3	hours	\$22.21	\$2,228	\$2,228	1203 drums @ 12 drums/hr = 100.3 hours @ 1 units/crew = 100.3 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Dump Trailer (20 CY)	100.3	hours	\$5.20	\$522	\$522	1203 drums @ 12 drums/hr = 100.3 hours @ 1 units/crew = 100.3 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Decon Drums (no decon performed)	0	drums	\$0.00	\$0	\$0	0 drums	
Subt - Bulk PCB Sludges for T&D				\$10,573	\$10,573		
1.13 Transport Sludges Offsite							
						capacity per 22-ton dump trailer = eighty-eight (88) drums @ 500# per drum	
Truck Transport @ 88 drums/load	21406	miles	\$2.70	\$57,796	\$57,796	1203 drums @ 88 drum/load = 13.7 (↑14) loads @ 1529 miles/trip = 21406 miles	Rate: transporters quote/site experience
Subt - Transport Sludges Offsite				\$57,796	\$57,796		
1.14 Offsite Sludges Disposal							
						incineration of PCB sludges; 500Lb/drum facility estimate	
Disposal Cost (Incin PCB Sludges)	601500	pounds	\$0.64	\$384,960	\$384,960	1203 drums @ 500 lbs/drm = 601500 pounds	Current CWM 2011 third party rate
Subt - Offsite Sludges Disposal (Subt: Assemblies 1.12 thru 1.14)				\$384,960	\$384,960	bulking and offsite transportation and disposal of PCB sludges	
				\$453,329	\$453,329		

1.0 PCB Warehouse

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
1.15 Load Empty Drums						prod'n rate = 160 drums/hour (assume double the rate of full drums @ site experience)	
Laborer	17.0	hours	\$39.00	\$663	\$663	1363 drums @ 160 drums/hr = 8.5 hours @ 2 units/crew = 17.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	8.5	hours	\$22.21	\$189	\$189	1363 drums @ 160 drums/hr = 8.5 hours @ 1 units/crew = 8.5 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40 ton)	8.5	hours	\$6.26	\$53	\$53	1363 drums @ 160 drums/hr = 8.5 hours @ 1 units/crew = 8.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Empty Drums				\$905	\$905		
1.16 Transp Drums to On-Site Shrd						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	8.5	hours	\$32.45	\$276	\$0	1363 drums @ 80 drums/load = 17.1 loads @ 0.5 hr/trip = 8.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	8.5	hours	\$45.00	\$383	\$0	1363 drums @ 80 drums/load = 17.1 loads @ 0.5 hr/trip = 8.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40 ton)	8.5	hours	\$6.26	\$53	\$0	1363 drums @ 80 drums/load = 17.1 loads @ 0.5 hr/trip = 8.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transport Drums to Shredder				\$712	\$0		
1.17 Unload Empty Drums						prod'n rate = 160 drums/hour (assume double the rate of full drums @ site experience)	
Laborer	17.0	hours	\$39.00	\$663	\$0	1363 drums @ 160 drums/hr = 8.5 hours @ 2 units/crew = 17.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	8.5	hours	\$22.21	\$189	\$0	1363 drums @ 160 drums/hr = 8.5 hours @ 1 units/crew = 8.5 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40 ton)	8.5	hours	\$6.26	\$53	\$0	1363 drums @ 160 drums/hr = 8.5 hours @ 1 units/crew = 8.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Empty Drums				\$905	\$0		
1.18 Onsite Drum Shredding						prod'n = 80 drums/hour; debris shredded into rolloff	
Laborer	34	hours	\$39.00	\$1,326	\$0	1363 drums @ 80 drums/hr = 16.6 hours @ 2 units/crew = 34.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Shredder	17.0	hours	\$329.70	\$5,605	\$0	1363 drums @ 80 drums/hr = 16.6 hours @ 1 unit/crew = 17.0 hours	2004 DEC Rate * Implicit Deflator
Rolloff (30-CY)	17.0	hours	\$19.02	\$323	\$0	1363 drums @ 80 drums/hr = 16.6 hours @ 1 unit/crew = 17.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Onsite Drum Shredding				\$7,254	\$0		
1.19 On-site Transp of Empty Drms						Transport whole drums to onsite landfill for disposal: production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	8.5	hours	\$32.45	\$0	\$276	1363 drums @ 80 drums/load = 17.1 loads @ 0.5 hr/trip = 8.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	8.5	hours	\$45.00	\$0	\$383	1363 drums @ 80 drums/load = 17.1 loads @ 0.5 hr/trip = 8.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	8.5	hours	\$6.26	\$0	\$53	1363 drums @ 80 drums/load = 17.1 loads @ 0.5 hr/trip = 8.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp Mat'l to Landfill				\$0	\$712	Drums crushed in landfill	
1.20 Unload Empty Drum						prod'n rate = 160 drums/hour (assume double the rate of full drums @ site experience)	
Laborer	8.5	hours	\$39.00	\$0	\$332	1363 drums @ 160 drums/hr = 8.5 hours @ 1 units/crew = 8.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader (small)	8.5	hours	\$14.39	\$0	\$122	1363 drums @ 160 drums/hr = 8.5 hours @ 1 units/crew = 8.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Flatbed Trailer (40-ton)	8.5	hours	\$6.26	\$0	\$53	1363 drums @ 160 drums/hr = 8.5 hours @ 1 units/crew = 8.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Drums at Landfill				\$0	\$507		
1.21 Offsite Disp/Shred'd Drums						assumes off-site non-haz land disposal of shredded drums; 20 tons/load	
Offsite Transportation	5	miles	\$3.25	\$16	\$0	13.6 tons @ 20 tons/load = 0.7 loads (↑1.0) @ 5 miles/trip = 5.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Landfill	13.6	tons	\$35.00	\$476	\$0	1363 drums @ 20 lbs/drum = 13.6 tons @ 1 tons/CY = 13.6 CY	Modern Disposal/Site Experience
Subt - Offsite Shrd'd Drums Disp'l				\$492	\$0		

1.0 PCB Warehouse

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
1.21a Containment Pan Demolition						2010 SW Permit Modification: 4 containment pans for 160 liquid drums	
Pan Demolition Lump Sum	4	Each	\$600.00	\$2,400	\$2,400	2,240 gals containment equivalent to 4-560 gal tank: unit rate = \$600/tank	Site Experience
Subt - Pan Demolition				\$2,400	\$2,400		
1.21b On-site Transp of Pans						production rate = 0.5 hours for onsite travel: 470 SF/pan	
Road Tractor (4 x 2, 30-ton)	0.5	hours	\$32.45	\$0	\$16	4 pans = 1880 SF @ 1 CF/48 SF = 39.2 CF = 1.5 CY	
Driver	0.5	hours	\$45.00	\$0	\$23	470 SF/pan @ 1 CF/48 SF = 9.8 CF @ 480 lb/CF = 2.4 tons	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY)	0.5	hours	\$19.02	\$0	\$10		dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Onsite Transp Pans				\$0	\$48		
1.21c Offsite T&D - Pan Demo							
Offsite Transportation	385	miles	\$3.25	\$1,251	\$0	1 Rolloff @ 1 rolloff/load = 1 load @ 385 miles/trip = 385 miles	Rate: transporters quote/site experience
Offsite Disposal - Landfill	1.5	CY	\$337.50	\$506	\$0	4 pans = 1880 SF @ 1 CF/48 SF = 39.2 CF = 1.5 CY	DEC 2004 Estimate accounting for inflation
Subt - Offsite Disp:PCB Whs Pans (Subt: Assemblies 1.15 thru 1.21c)				\$1,758	\$0	<i>onsite drum shredding and off-site disposal: off-site pan disposal</i>	
				\$14,425	\$4,572		
1.22 Decon PCB W'house (Wash)						production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	148.8	hours	\$39.00	\$5,803	\$5,803	15626 SF @ 105 SF/hr = 148.8 hours @ 1 units/crew = 148.8 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer		hours	\$4.04	\$0	\$0	Vacuum-Pressure Wash Combo Used Below	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper		hours	\$3.41	\$0	\$0		RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	148.8	hours	\$22.94	\$3,413	\$3,413	15626 SF @ 105 SF/hr = 148.8 hours @ 1 units/crew = 148.8 hours	2001 Rate * Implicit Deflator
Subt - Decon PCB W'house (wash)				\$9,216	\$9,216		
1.23 Decon PCB W'house (Rinse)						production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	148.8	hours	\$39.00	\$5,803	\$5,803	Vacuum-Pressure Wash Combo Used	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer		hours	\$4.04	\$0	\$0		RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper		hours	\$3.41	\$0	\$0	15626 SF @ 105 SF/hr = 148.8 hours @ 1 units/crew = 148.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	148.8	hours	\$22.94	\$3,413	\$3,413		2001 Rate * Implicit Deflator
Subt - Decon PCB W'house (rinse)				\$9,216	\$9,216		
1.24 Decon Water Samp/Dispose						production rate = 0.5 hours/sample for two techs	
Technician	2.0	hours	\$38.00	\$76	\$76	2.0 samp @ 0.5 hr/samp = 1.0 hours @ 2 units/crew = 2.0 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	2.0	samp	\$105.00	\$210	\$210	2.0 areas @ 1.0 samp/area = 2.0 samples	analytical price: average of three quotes
On-site Water Disposal	1562.6	gal	\$0.0313	\$49	\$49	15626 SF @ 0.05 gal/sf/wa = 781.3 gallons + 0.05 gal/SF/rinse = 781.3 gals	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt Decon Water Samp/Dispose				\$335	\$335		
1.25 PCB Wipe & Destruct Samp						production rate = 0.5 hours/sample for two techs based upon facility exp	
Technician	38	hours	\$38.00	\$1,444	\$1,444	38.0 samp @ 0.5 hr/samp = 19.0 hours @ 2 units/crew = 38.0 hours	technician rate: rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	2	samp	\$446.67	\$893	\$893	2.0 areas @ 1.0 samp/area = 2.0 samples	analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	36	samp	\$83.33	\$3,000	\$3,000	15626 SF @ 625 SF/samp = 25.0 samples 11 samp post rinse = 36 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemblies 1.22 thru 1.25)				\$5,337	\$5,337	<i>building decontamination and sampling</i>	
				\$24,105	\$24,105		

Total Labor Hours

840.0

1.0 PCB Warehouse

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
1.26 PPE Usage & H&S Planning						Level C @ 75%; Mod Level C @ 25% for total non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Modified Level C	26.2	days	\$9.00	\$236	\$236	839.5 hours @ 8 hr/day = 104.9 days @ 25% "Mod C" days = 26.2 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	78.7	days	\$25.00	\$1,968	\$1,968	839.5 hours @ 8 hr/day = 104.9 days @ 75% "C" days = 78.7 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	21	hours	\$75.00	\$1,575	\$1,575	839.5 hours @ 0.025 hr/hr = 21.0 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt -PPE Usage/H&S Planning				\$3,778	\$3,778		
1.27 Supervision						4 weeks for closure of PCB warehouse	
Foreman	160	hours	\$65.00	\$10,400	\$10,400	4 weeks @ 40 hrs/wk = 160.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$10,400	\$10,400		
1.28 Certification						Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	12.6	hours	\$130.00	\$1,638	\$1,638	839.5 hours @ 0.015 hr/hr = 12.6 hours	Engineer rate: 2011 3rd party quote
Clerical	12.6	hours	\$45.00	\$567	\$567	839.5 hours @ 0.015 hr/hr = 12.6 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$2,205	\$2,205		
<i>(Subt: Assemblies 1.26 thru 1.28)</i>				\$16,383	\$16,383	<i>supervision, health & safety, and certification</i>	

1.0 PCB Warehouse	Direct Cost	Total	Basic	\$728,702	\$562,038
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1.0 PCB Warehouse			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost OffSite Disposal	Cost Range
Direct Costs/Basic Disposal		\$728,702	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$51,009	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$29,148	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$43,722	note: DEC uses 6%
Engineering During Construction	2.00%	\$14,574	note: DEC uses 2%
General Contractor Profit	6.00%	\$43,722	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$182,175	
Subt: AWTS - PCB W'house		\$910,877	
Plus Contingency	10.00%	\$91,088	CWM and DEC 10%
Tot: PCB W'house		\$1,001,965	

Cost References:

"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

2.0 Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.1 Inventory Verification							
						production rate = two persons req'd @ average of two drums/minute/crew with a 10-min break/hour	
Laborer	44.5	hours	\$39.00	\$1,736	\$1,736	4452 drums @ 100 drums/hr = 44.5 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$1,736	\$1,736		
<i>Subt: Assemblies 2.1 thru 2.1)</i>				\$1,736	\$1,736	<i>survey and inventory of maximum capacity of Drum Management Building</i>	
2.2 Load Solids Drms for O/S L'Fill							
						production rate = 80 drums/hour/person; Facility experience	
Laborer	82.6	hours	\$39.00	\$3,221	\$3,221	3305 drums @ 80 drums/hr = 41.3 hours @ 2 units/crew = 82.6 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	41.3	hours	\$22.21	\$917	\$917	3305 drums @ 80 drums/hr = 41.3 hours @ 1 units/crew = 41.3 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	41.3	hours	\$6.26	\$259	\$259	3305 drums @ 80 drums/hr = 41.3 hours @ 1 units/crew = 41.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Drums for Onsite L'Fill				\$4,397	\$4,397		
2.3 Trans Solids Drms to O/S L'Fill							
						assumes on-site disposal	
Road Tractor (4 x 2, 30-ton)	20.7	hours	\$32.45	\$0	\$672	3305 drums @ 80 drums/load = 41.3 loads @ 0.5 hr/load = 20.7 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	20.7	hours	\$45.00	\$0	\$932	3305 drums @ 80 drums/load = 41.3 loads @ 0.5 hr/load = 20.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	20.7	hours	\$6.26	\$0	\$130	3305 drums @ 80 drums/load = 41.3 loads @ 0.5 hr/load = 20.7 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp Drms to Onsite L'Fill				\$0	\$1,733		
2.4 Unload Sol Drms at O/S L'Fill							
						assumes on-site disposal	
Laborer	20.7	hours	\$39.00	\$0	\$807	3305 drums @ 80 drums/load = 41.3 loads @ 0.5 hr/load = 20.7 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	20.7	hours	\$22.21	\$0	\$460	3305 drums @ 80 drums/load = 41.3 loads @ 0.5 hr/load = 20.7 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	20.7	hours	\$6.26	\$0	\$130	3305 drums @ 80 drums/load = 41.3 loads @ 0.5 hr/load = 20.7 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Drms at Onsite L'Fill				\$0	\$1,397		
2.5 Offsite Disp - Solids Drums							
						assumes off-site land disposal; 80 drms/load; Fac est assumes on-site disposal	
Offsite Transportation	15900.5	miles	\$3.50	\$55,652	\$0	3305 drums @ 80 drums/ld = 41.3 loads @ 385 miles/trip = 15900.5miles	Rate: transporters quote/site experience
Offsite Disposal - Landfill	3305	drums	\$100.00	\$330,500	\$0	3305 drums	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite Disp - Solids Drums				\$386,152	\$0		
<i>(Subt: Assemblies 2.2 thru 2.5)</i>				\$390,549	\$7,527	<i>loading, off-site transporting, and off-site disposal of drummed solids</i>	
2.6 Load Drums for O/S Aque Trt							
						production rate = 80 drums/hour; facility experience	
Laborer	11.7	hours	\$39.00	\$456	\$456	469 drums @ 80 drums/hr = 5.9 hours @ 2 units/crew = 11.7 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	5.9	hours	\$22.21	\$131	\$131	469 drums @ 80 drums/hr = 5.9 hours @ 1 units/crew = 5.9 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	5.9	hours	\$6.26	\$37	\$37	469 drums @ 80 drums/hr = 5.9 hours @ 1 units/crew = 5.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Drms for Onsite Aq/Tr				\$624	\$624		
2.7 Transp to O/S Aqueous Treat							
						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	2.9	hours	\$32.45	\$94	\$94	469 drums @ 80 drum/load = 5.9 loads @ = 0.5 hours/trip = 2.9 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	2.9	hours	\$45.00	\$131	\$131	469 drums @ 80 drum/load = 5.9 loads @ = 0.5 hours/trip = 2.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	2.9	hours	\$6.26	\$18	\$18	469 drums @ 80 drum/load = 5.9 loads @ = 0.5 hours/trip = 2.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp to Onsite Aque Treat				\$243	\$243		

2.0 Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.8 Unload/Empty Drms:O/S AqTrt							
						production rate = 80 drm/hr; facility experience	
Laborer	11.7	hours	\$39.00	\$456	\$456	469 drums @ 80 drums/hr = 11.7 hours @ 2 units/crew =	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	5.9	hours	\$22.21	\$131	\$131	469 drums @ 80 drums/hr = 11.7 hours @ 1 units/crew =	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	5.9	hours	\$6.26	\$37	\$37	469 drums @ 80 drums/hr = 11.7 hours @ 1 units/crew =	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unl/Emp Drms: O/S Aqu Trt				\$624	\$624		
2.9 Onsite Aqueous Treatment							
Onsite Aqueous Treatment	25795	gal	\$0.1526	\$3,936	\$3,936	469 drums @ 55 gal/drum = 25795.0 gallons	On-site treatment costs: other (gate receipts) wastewater source
Subt - Onsite Aqueous Treatment				\$3,936	\$3,936		
(Subt: Assemblies 2.6 thru 2.9)				\$5,428	\$5,428	loading, onsite transporting, unloading, and onsite disposal of drummed liquids	
2.10 Load Org Liq Drms for Bulking							
						production rate = 80 drums/hour; facility experience	
Laborer	14.0	hours	\$39.00	\$546	\$546	558 drums @ 80 drums/hr = 7.0 hours @ 2 units/crew =	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	7.0	hours	\$22.21	\$155	\$155	558 drums @ 80 drums/hr = 7.0 hours @ 1 units/crew =	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton) not req'd	0	hours	\$6.26	\$0	\$0	0 drums @ 80 drums/hr = 0.0 hours @ 1 units/crew =	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Org Liq Drms - Bulking				\$701	\$701		
2.11 Onsite Transportation							
N/A	0	hours	\$0.00	\$0	\$0	onsite bulking performed at Drum Management Building by forklift; no transportation costs incurred 0 drums @ 80 drum/load = 0.0 loads @ 0.5 hours/trip = 0.0 hours	drums moved solely by forklift at Drum Mgmt Bldg
Subt - Onsite Transportation				\$0	\$0		
2.12 Unload Org Liq Drms/Bulking							
						production rate = 80 drums/hour; facility experience	
Laborer	14	hours	\$39.00	\$546	\$546	558 drums @ 80 drums/hr = 7.0 hours @ 2 units/crew =	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	7	hours	\$22.21	\$155	\$155	558 drums @ 80 drums/hr = 7.0 hours @ 1 units/crew =	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton) not req'd	0	hours	\$6.26	\$0	\$0	0 drums @ 80 drums/hr = 0.0 hours @ 1 units/crew =	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Org Liq Drms/Bulking				\$701	\$701		
2.13 Bulk Org Liquids into Tankers							
						prod'n rate = 5 min/drum; employs a 2-person crew + equipment	
Laborer	93	hours	\$39.00	\$3,627	\$3,627	558 drums @ 12 drums/hr = 46.5 hours @ 2 units/crew =	two laborers; rate 2011 3rd party quote
Pumping Equipment	46.5	hours	\$71.47	\$3,323	\$3,323	558 drums @ 12 drums/hr = 46.5 hours @ 1 units/crew =	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer - 5,500 Gallons	46.5	hours	\$6.31	\$293	\$293	558 drums @ 12 drums/hr = 46.5 hours @ 1 units/crew =	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Bulk Org Liq into Tankers				\$7,244	\$7,244		
(Subt: Assemblies 2.10 thru 2.13)				\$8,647	\$8,647	loading, onsite transporting, and bulking drummed organic liquids	
2.14 Transp Org Liquids Offsite							
						capacity per 5,500-gal tanker = one hundred (100) 55-gal drums	
Transport in 5,500-gal Tankers	8562.4	miles	\$3.50	\$29,968	\$29,968	558 drums @ 100 drm/tankr = 5.6 loads @ 1529 miles/trip =	Rate: transporters quote/site experience
Subt - Transp Org Liquids Offsite				\$29,968	\$29,968		
2.15 Transp Ramp Liquids Offsite							
						two standing 5,500-gal tankers parked at West ramp = 11,000 gallons	
Transport two 5,500 Gal Tankers	3058	miles	\$3.50	\$10,703	\$10,703	11000 gals @ 5500 gal/tankr = 2.0 loads @ 1529 miles/trip =	Rate: transporters quote/site experience
Subt - Transp Org Liquids Offsite				\$10,703	\$10,703		

2.0 Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.16 Offsite Org Liquids Disposal						offsite incineration of non-PCB liquids	
Disposal Cost - Liquids (558 drums)	30690	gallons	\$3.15	\$96,674	\$96,674	558 drums @ 55 gal/drum = 30690 gallons	HWC/ETC 2004 & Current third party rate
Disposal Cost - Liquids (2 Tankers)	11000	gallons	\$3.15	\$34,650	\$34,650	2.0 tankr @ 5500 gal/tankr = 11000 gallons	HWC/ETC 2004 & Current third party rate
Subt - Offsite Org Liq Disposal				\$131,324	\$131,324		
<i>(Subt: Assemblies 2.14 thru 2.16)</i>				\$171,995	\$171,995	<i>offsite T&D of liquids</i>	
2.17 Load Empty Drums						production rate = 160 drums/hour (double the rate of full drums)	
Laborer	12.8	hours	\$39.00	\$499	\$499	1027 drums @ 160 drums/hr = 6.4 hours @ 2 units/crew = 12.8 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	6.4	hours	\$22.21	\$142	\$142	1027 drums @ 160 drums/hr = 6.4 hours @ 1 units/crew = 6.4 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	6.4	hours	\$6.26	\$40	\$40	1027 drums @ 160 drums/hr = 6.4 hours @ 1 units/crew = 6.4 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Empty Drums				\$681	\$681	Loaded for on-site shredding & offsite disposal or for onsite disposal	
2.18 Transp Drums to Onsite Shrd						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	6.4	hours	\$32.45	\$208	\$0	1027 drums @ 80 drum/load = 12.8 loads @ 0.5 hours/trip = 6.4 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	6.4	hours	\$45.00	\$288	\$0	1027 drums @ 80 drum/load = 12.8 loads @ 0.5 hours/trip = 6.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	6.4	hours	\$6.26	\$40	\$0	1027 drums @ 80 drum/load = 12.8 loads @ 0.5 hours/trip = 6.4 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp to Onsite Shredder				\$536	\$0		
2.19 Unload Empty Drums						production rate = 160 drums/hour (double the rate of full drums)	
Laborer	12.8	hours	\$39.00	\$499	\$0	1027 drums @ 160 drums/hr = 6.4 hours @ 2 units/crew = 12.8 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	6.4	hours	\$22.21	\$142	\$0	1027 drums @ 160 drums/hr = 6.4 hours @ 1 units/crew = 6.4 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	6.4	hours	\$6.26	\$40	\$0	1027 drums @ 160 drums/hr = 6.4 hours @ 1 units/crew = 6.4 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Empty Drums				\$681	\$0		
2.20 Onsite Drum Shredding						prod'n = 80 drums/hour; debris shredded into rolloff	
Laborer	25.7	hours	\$39.00	\$1,002	\$0	1027 drums @ 80 drums/hr = 12.8 hours @ 2 units/crew = 25.7 hours	one shredder oper + one helper; rate 2011 3rd party quote
Shredder	12.8	hours	\$329.70	\$4,220	\$0	1027 drums @ 80 drums/hr = 12.8 hours @ 1 units/crew = 12.8 hours	2004 DEC Rate * Implicit Deflator
Rolloff (30-CY)	12.8	hours	\$19.02	\$243	\$0	1027 drums @ 80 drums/hr = 12.8 hours @ 1 units/crew = 12.8 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Onsite Drum Shredding				\$5,466	\$0		
2.21 Transp Drms: onsite L'fill						Transport whole drums to onsite landfill for disposal: production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	6.4	hours	\$32.45	\$0	\$208	1027 drums @ 80 drums/load = 12.8 loads @ 0.5 hours/trip = 6.4 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	6.4	hours	\$45.00	\$0	\$288	1027 drums @ 80 drums/load = 12.8 loads @ 0.5 hours/trip = 6.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	6.4	hours	\$6.26	\$0	\$40	1027 drums @ 80 drums/load = 12.8 loads @ 0.5 hours/trip = 6.4 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp Mat'l to Landfill				\$0	\$536	Drums crushed in landfill	
2.22 Unload Empty Drum						prod'n rate = 160 drums/hour (assume double the rate of full drums @ site experience)	
Laborer	6.4	hours	\$39.00	\$0	\$250	1027 drums @ 160 drums/hr = 6.4 hours @ 1 units/crew = 6.4 hours	one loader oper + one helper; rate 2011 3rd party quote
Loader (medium)	6.4	hours	\$14.39	\$0	\$92	1027 drums @ 160 drums/hr = 6.4 hours @ 1 units/crew = 6.4 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Flatbed Trailer (40-ton)	6.4	hours	\$6.26	\$0	\$40	1027 drums @ 160 drums/hr = 6.4 hours @ 1 units/crew = 6.4 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Epty Drum at Landfill				\$0	\$382	Drums crushed in landfill	

2.0 Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.23 Offsite Disp/Shrd'd Drums						assumes off-site land disposal of shredded drums; 20 tons/load	
Offsite Transportation	5.0	miles	\$3.25	\$16	\$0	10.3 tons @ 20 tons/load = 0.5 (↑1) loads @ 5 miles/trip = 5.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Non-Haz Landfill	10.3	tons	\$35.00	\$361	\$0	1027 drums @ 20 lbs/drum = 10.3 tons @ 1 tons/CY = 10.3 tons	Modern Disposal/Site Experience
Subt - Offsite Shrd'd Drums Disp'l (Subt: Assemblies 2.17 thru 2.23)				\$377	\$0		
				\$7,741	\$1,599	onsite drum shredding and off-site non-haz disposal	
2.24 Load Spec Treat for O/S T&D						production rate = 40 drums/hour; site experience	
Laborer	6	hours	\$39.00	\$234	\$234	120 drums @ 40 drums/hr = 3.0 hours @ 2 pers/crew = 6.0 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	3	hours	\$22.21	\$67	\$67	120 drums @ 40 drums/hr = 3.0 hours @ 1 units/crew = 3.0 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Dump Trailer (22 ton)	3	hours	\$5.20	\$16	\$16	120 drums @ 40 drums/hr = 3.0 hours @ 1 units/crew = 3.0 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Spec Trt for O/S T&D				\$316	\$316		
2.25 Transport Spec Trt Offsite						Estimate based on a per drum basis for special treatment waste: max 120 drums	
Truck Transport @ 88 drums/load	0	miles	\$0.00	\$0	\$0		
Transport per drum	120	drum	\$50.00	\$6,000	\$6,000	Facility estimate based on per drum rate	rate = site experience
Subt - Transport Spec Trt Offsite				\$6,000	\$6,000		
2.26 Offsite Spec Trt Disposal						disposal price of \$500/drum	
Disposal Cost (Misc Drums)	120	drum	\$500.00	\$60,000	\$60,000	120 drums	site estimate of \$500/drum for unknown wastes
Subt - Offsite Spec Trt Disposal (Subt: Assemblies 2.24 thru 2.26)				\$60,000	\$60,000	offsite T&D of drums requiring special treatment	
				\$66,316	\$66,316		
2.27 Decon Drm Mgmt Bldg (wash)						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	208.9	hours	\$39.00	\$8,147	\$8,147	21933 SF @ 105 SF/hr = 208.9 hours @ 1 pers/crew = 208.9 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer		hours	\$4.04	\$0	\$0	Vacuum-Pressure Wash Combo Used	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper		hours	\$3.41	\$0	\$0	not required	RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	208.9	hours	\$22.94	\$4,792	\$4,792	21933 SF @ 105 SF/hr = 208.9 hours @ 1 units/crew = 208.9 hours	2001 Rate * Implicit Deflator
Subt - Decon Drm Mgt Bldg (Wash)				\$12,939	\$12,939		
2.28 Decon Drum Mgt Bldg (Rinse)						production rate = 105 SF/hr for 1-person crew w/ one unit; facility experience	
Laborer	208.9	hours	\$39.00	\$8,147	\$8,147	21933 SF @ 105 SF/hr = 208.9 hours @ 2 pers/crew = 208.9 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer		hours	\$4.04	\$0	\$0	Vacuum-Pressure Wash Combo Used	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper		hours	\$3.41	\$0	\$0	not required	RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	208.9	hours	\$22.94	\$4,792	\$4,792	21933 SF @ 105 SF/hr = 208.9 hours @ 1 units/crew = 208.9 hours	2001 Rate * Implicit Deflator
Subt - Decon Drm Mgt Bldg (Rinse)				\$12,939	\$12,939		
2.29 Decon Water Samp/Dispose						production rate = 0.5 hours/sample for two techs; DEC treatment unit price = \$0.1042/gallon	
Technician	4.0	hours	\$38.00	\$152	\$152	4.0 samp @ 0.5 hr/samp = 2.0 hours @ 2 pers/crew = 4.0 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	4.0	samp	\$105.00	\$420	\$420	4.0 samples	analytical price: average of three quotes
On-site Water Disposal	4386.6	gal	\$0.0313	\$137	\$137	21933 SF @ 0.05 gal/sf/wa = 2193.3 0.05 gal/sf/rinse = 2193.3 gals	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$709	\$709		

2.0 Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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2.30 PCB Wipe & Destruct Samp						production rate = 0.5 hours/sample for two techs based upon facility exp	
Technician	35.1	hours	\$38.00	\$1,334	\$1,334	35.1 samp @ 0.5 hr/samp = 17.55 hours @ 2 pers/crew = 35.1 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0	samp	\$446.67	\$0	\$0	concrete core samples and TCLP not required - permit	analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	35.1	samp	\$83.33	\$2,925	\$2,925	21933 SF @ 625 SF/samp = 35.1 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$4,259	\$4,259		
<i>(Subt: Assemblies 2.27 thru 2.30)</i>				\$30,847	\$30,847	<i>building decontamination and sampling</i>	

Total Labor Hours 849.2

2.31 PPE Usage & H&S Planning						Level C @ 75%; Mod Level C @ 25% for total non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Mod Level C	26.6	days	\$9.00	\$239	\$239	849.2 hours @ 8 hr/day = 106.2 days @ 25% "Mod C" days = 26.6 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	79.6	days	\$25.00	\$1,990	\$1,990	849.2 hours @ 8 hr/day = 106.2 days @ 75% "C" days = 79.6 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	21.2	hours	\$75.00	\$1,590	\$1,590	849.2 hours @ 2.5% hr/hr = 21.2 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$3,819	\$3,819		
2.32 Supervision						4 weeks for closure of Drum Management Building	
Foreman	160	hours	\$65.00	\$10,400	\$10,400	4 weeks @ 40 hrs/wk = 160.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$10,400	\$10,400		
2.33 Certification						Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	12.74	hours	\$130.00	\$1,656	\$1,656	849.2 hours @ 0.015 hr/hr = 12.74 hours	Engineer rate: 2011 3rd party quote
Clerical	12.74	hours	\$45.00	\$573	\$573	849.2 hours @ 0.015 hr/hr = 12.74 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$2,230	\$2,230		
<i>(Subt: Assemblies 2.31 thru 2.33)</i>				\$16,449	\$16,449	<i>supervision, health & safety, and certification</i>	

2.0 Drum Mgmt Bldg	Direct Cost	Total	Basic	\$699,707	\$310,542
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2.0 Drum Management Building			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost OffSite Disposal	Cost Range
Direct Costs/Basic Disposal		\$699,707	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$48,979	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$27,988	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$41,982	note: DEC uses 6%
Engineering During Construction	2.00%	\$13,994	note: DEC uses 2%
General Contractor Profit	6.00%	\$41,982	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$174,927	
Subtotal - Drum Storage Bldg		\$874,633	
Plus Contingency	10.00%	\$87,463	CWM and DEC 10%
Total - Drum Stor Bldg		\$962,097	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

NOTE: Sheet to be added.

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.01.0 Inventory Verification						production rate = two persons req'd @ average of two drums/minute/crew with a 10-min break/hour	
Laborer	40.9	hours	\$39.00	\$1,595	\$1,595	4,088 drums @ 100 drums/hr = 40.9 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$1,595	\$1,595		
<i>Subt: Assemblies 2.01.1)</i>				\$1,595	\$1,595	<i>survey and inventory of maximum capacity of Drum Management Building</i>	
2.01.2 Load Solids Drms for O/S L'Fill						production rate = 80 drums/hour/person; Facility experience	
Laborer	76.8	hours	\$39.00	\$2,995	\$2,995	3068 drums @ 80 drums/hr = 38.4 hours @ 2 units/crew = 76.8 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	38.4	hours	\$22.21	\$853	\$853	3068 drums @ 80 drums/hr = 38.4 hours @ 1 units/crew = 38.4 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	38.4	hours	\$6.26	\$240	\$240	3068 drums @ 80 drums/hr = 38.4 hours @ 1 units/crew = 38.4 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Drums for Onsite L'Fill				\$4,088	\$4,088		
2.01.3 Trans Solids Drms to O/S L'Fill						assumes on-site disposal	
Road Tractor (4 x 2, 30-ton)	19.2	hours	\$32.45	\$0	\$623	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	19.2	hours	\$45.00	\$0	\$864	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	19.2	hours	\$6.26	\$0	\$120	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp Drms to Onsite L'Fill				\$0	\$1,607		
2.01.4 Unload Sol Drums at O/S L'Fill						assumes on-site disposal	
Laborer	19.2	hours	\$39.00	\$0	\$749	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	19.2	hours	\$22.21	\$0	\$426	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	19.2	hours	\$6.26	\$0	\$120	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Drms at Onsite L'Fill				\$0	\$1,295		
2.01.5 Offsite Disp - Solids Drums						assumes off-site land disposal; 80 drms/load; Fac est assumes on-site disposal	
Offsite Transportation	14784	miles	\$3.50	\$51,744	\$0	3068 drums @ 80 drums/ld = 38.4 loads @ 385 miles/trip = 14,784 miles	Rate: transporters quote/site experience
Offsite Disposal - Landfill	3068	drums	\$100.00	\$306,800	\$0	3068 drums	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite Disp - Solids Drums				\$358,544	\$0		
<i>(Subt: Assemblies 2.01.2 thru 2.01.5)</i>				\$362,632	\$6,991	<i>loading, off-site transporting, and off-site disposal of drummed solids</i>	
2.01.6 Load Drums for O/S Aque Trt						production rate = 80 drums/hour; facility experience	
Laborer	10.2	hours	\$39.00	\$398	\$398	410 drums @ 80 drums/hr = 5.1 hours @ 2 units/crew = 10.2 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	5.1	hours	\$22.21	\$113	\$113	410 drums @ 80 drums/hr = 5.1 hours @ 1 units/crew = 5.1 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	5.1	hours	\$6.26	\$32	\$32	410 drums @ 80 drums/hr = 5.1 hours @ 1 units/crew = 5.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Drms for Onsite Aq/Tr				\$543	\$543		
2.01.7 Transp to O/S Aqueous Treat						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	2.6	hours	\$32.45	\$84	\$84	410 drums @ 80 drum/load = 5.1 loads @ = 0.5 hours/trip = 2.6 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	2.6	hours	\$45.00	\$117	\$117	410 drums @ 80 drum/load = 5.1 loads @ = 0.5 hours/trip = 2.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	2.6	hours	\$6.26	\$16	\$16	410 drums @ 80 drum/load = 5.1 loads @ = 0.5 hours/trip = 2.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp to Onsite Aque Treat				\$218	\$218		

NOTE: Sheet to be added.

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.01.8 Unload/Empty Drms:O/S AqTrt						production rate = 80 drm/hr; facility experience	
Laborer	10.2	hours	\$39.00	\$398	\$398	410 drums @ 80 drums/hr = 5.1 hours @ 2 units/crew = 10.2 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	5.1	hours	\$22.21	\$113	\$113	410 drums @ 80 drums/hr = 5.1 hours @ 1 units/crew = 5.1 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	5.1	hours	\$6.26	\$32	\$32	410 drums @ 80 drums/hr = 5.1 hours @ 1 units/crew = 5.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unl/Emp Drms: O/S Aqu Trt				\$543	\$543		
2.01.9 Onsite Aqueous Treatment							
Onsite Aqueous Treatment	22550	gal	\$0.1526	\$3,441	\$3,441	410 drums @ 55 gal/drum = 22,550 gallons	On-site treatment costs: other (gate receipts) wastewater source
Subt - Onsite Aqueous Treatment				\$3,441	\$3,441		
<i>(Subt: Assemblies 2.01.6 thru 2.01.9)</i>				\$4,745	\$4,745	<i>loading, onsite transporting, unloading, and onsite disposal of drummed liquids</i>	
2.01.10 Load Org Liq Drms for Bulking						production rate = 80 drums/hour; facility experience	
Laborer	12.2	hours	\$39.00	\$476	\$476	490 drums @ 80 drums/hr = 6.1 hours @ 2 units/crew = 12.2 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	6.1	hours	\$22.21	\$135	\$135	490 drums @ 80 drums/hr = 6.1 hours @ 1 units/crew = 6.1 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton) not req'd	0	hours	\$6.26	\$0	\$0	0 drums @ 80 drums/hr = 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Org Liq Drms - Bulking				\$611	\$611		
2.01.11 Onsite Transportation						onsite bulking performed at Drum Management Building by forklift; no transportation costs incurred	
N/A	0	hours	\$0.00	\$0	\$0	0 drums @ 80 drum/load = 0.0 loads @ 0.5 hours/trip = 0.0 hours	drums moved solely by forklift at Drum Mgmt Bldg
Subt - Onsite Transportation				\$0	\$0		
2.01.12 Unload Org Liq Drms/Bulking						production rate = 80 drums/hour; facility experience	
Laborer	12.2	hours	\$39.00	\$476	\$476	490 drums @ 80 drums/hr = 6.1 hours @ 2 units/crew = 12.2 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	6.1	hours	\$22.21	\$135	\$135	490 drums @ 80 drums/hr = 6.1 hours @ 1 units/crew = 6.1 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton) not req'd	0	hours	\$6.26	\$0	\$0	0 drums @ 80 drums/hr = 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Org Liq Drms/Bulking				\$611	\$611		
2.01.13 Bulk Org Liquids into Tankers						prod'n rate = 5 min/drum; employs a 2-person crew + equipment	
Laborer	81.6	hours	\$39.00	\$3,182	\$3,182	490 drums @ 12 drums/hr = 40.8 hours @ 2 units/crew = 81.6 hours	two laborers; rate 2011 3rd party quote
Pumping Equipment	40.8	hours	\$71.47	\$2,916	\$2,916	490 drums @ 12 drums/hr = 40.8 hours @ 1 units/crew = 40.8 hours	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer - 5,500 Gallons	40.8	hours	\$6.31	\$257	\$257	490 drums @ 12 drums/hr = 40.8 hours @ 1 units/crew = 40.8 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Bulk Org Liq into Tankers				\$6,356	\$6,356		
<i>(Subt: Assemblies 2.01.10 thru 2.01.13)</i>				\$7,578	\$7,578	<i>loading, onsite transporting, and bulking drummed organic liquids</i>	

NOTE: Sheet to be added.

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.01.14 Transp Org Liquids Offsite						capacity per 5,500-gal tanker = one hundred (100) 55-gal drums	
Transport in 5,500-gal Tankers	7492	miles	\$3.50	\$26,222	\$26,222	490 drums @ 100 drm/tankr = 4.9 loads @ 1529 miles/trip = 7,492 miles	Rate: transporters quote/site experience
Subt - Transp Org Liquids Offsite				\$26,222	\$26,222		
2.01.15 Transp Ramp Liquids Offsite						two standing 5,500-gal tankers parked at West ramp = 11,000 gallons	
Transport two 5,500 Gal Tankers	3058	miles	\$3.50	\$10,703	\$10,703	11000 gals @ 5500 gal/tankr = 2.0 loads @ 1529 miles/trip = 3058.0 miles	Rate: transporters quote/site experience
Subt - Transp Org Liquids Offsite				\$10,703	\$10,703		
2.01.16 Offsite Org Liquids Disposal						offsite incineration of non-PCB liquids	
Disposal Cost - Liquids (558 drums)	26950	gallons	\$3.15	\$84,893	\$84,893	490 drums @ 55 gal/drum = 26950 gallons	HWC/ETC 2004 & Current third party rate
Disposal Cost - Liquids (2 Tankers)	11000	gallons	\$3.15	\$34,650	\$34,650	2.0 tankr @ 5500 gal/tankr = 11000 gallons	HWC/ETC 2004 & Current third party rate
Subt - Offsite Org Liq Disposal				\$119,543	\$119,543		
(Subt: Assemblies 2.01.14 thru 2.01.16)				\$156,468	\$156,468	offsite T&D of liquids	
2.01.17 Incinerables From Transf. Rm. Empty Transformers						prod'n rate = 1,650 gals/hr; RSM/UP p. 9-171 (33-19-0101); 6 transformers @ 344.2 gals each	2,065 gal. from Transformer Flush Area
Laborer	2.6	hours	\$39.00	\$101	\$101	2,065 gals @ 1650 gals/hr = 1.3 hours @ 2 units/crew = 2.6 hours	two laborers; rate 2011 3rd party quote
Pumping Equipment	1.3	hours	\$71.47	\$93	\$93	2,065 gals @ 1650 gals/hr = 1.3 hours @ 1 units/crew = 1.3 hours	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer - 5,000 Gals	1.3	hours	\$6.31	\$8	\$8	2,065 gals @ 1650 gals/hr = 1.3 hours @ 1 units/crew = 1.3 hours	T&D rate below includes tanker
Subt - Empty Transformers				\$203	\$203		
2.01.18 Transp Transformer Liqs Offsite						capacity per tanker = 5 000 gallons capacity per tanker = 5,000 gallons	
Transport in 5,000 Gal Tanker	1529	miles	\$3.50	\$5,352	\$5,352	2,065 gals @ 5000 gal/tankr = 0.4 loads (↑1.0)@ 1529 miles/load = 1529.0 miles	Rate: transporters quote/site experience
Subt - Transp't Transformer Liquids				\$5,352	\$5,352		
2.01.19 Dispose of Transformer Liquids						liquid PCB wastes	
Disposal Cost - PCB Liquids	2065	gallons	\$4.68	\$9,664	\$9,664	2,065 gallons	HWC/ETC 2004 & Current third party rate
Subt - Transformer O/S Liq Dispos'l				\$9,664	\$9,664		
(Subt: Assemblies 3.2 thru 3.4)				\$15,218	\$15,218	empty transformers and T&D PCB liquids	
2.01.20 Load Empty Drums						production rate = 160 drums/hour (double the rate of full drums)	
Laborer	11.2	hours	\$39.00	\$437	\$437	900 drums @ 160 drums/hr = 5.6 hours @ 2 units/crew = 11.2 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	5.6	hours	\$22.21	\$124	\$124	900 drums @ 160 drums/hr = 5.6 hours @ 1 units/crew = 5.6 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	5.6	hours	\$6.26	\$35	\$35	900 drums @ 160 drums/hr = 5.6 hours @ 1 units/crew = 5.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Empty Drums				\$596	\$596	Loaded for on-site shredding & offsite disposal or for onsite disposal	
2.01.21 Transp Drums to Onsite Shrd						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	5.7	hours	\$32.45	\$185	\$0	900 drums @ 80 drum/load = 11.3 loads @ 0.5 hours/trip = 5.7 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	5.7	hours	\$45.00	\$257	\$0	900 drums @ 80 drum/load = 11.3 loads @ 0.5 hours/trip = 5.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	5.7	hours	\$6.26	\$36	\$0	900 drums @ 80 drum/load = 11.3 loads @ 0.5 hours/trip = 5.7 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp to Onsite Shredder				\$477	\$0		

NOTE: Sheet to be added.

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.01.22 Unload Empty Drums						production rate = 160 drums/hour (double the rate of full drums)	
Laborer	11.2	hours	\$39.00	\$437	\$0	900 drums @ 160 drums/hr = 5.6 hours @ 2 units/crew = 11.2 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	5.6	hours	\$22.21	\$124	\$0	900 drums @ 160 drums/hr = 5.6 hours @ 1 units/crew = 5.6 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	5.6	hours	\$6.26	\$35	\$0	900 drums @ 160 drums/hr = 5.6 hours @ 1 units/crew = 5.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Empty Drums				\$596	\$0		
2.01.23 Onsite Drum Shredding						prod'n = 80 drums/hour; debris shredded into rolloff	
Laborer	22.6	hours	\$39.00	\$881	\$0	900 drums @ 80 drums/hr = 11.3 hours @ 2 units/crew = 22.6 hours	one shredder oper + one helper; rate 2011 3rd party quote
Shredder	11.3	hours	\$329.70	\$3,726	\$0	900 drums @ 80 drums/hr = 11.3 hours @ 1 units/crew = 11.3 hours	2004 DEC Rate * Implicit Deflator
Rolloff (30-CY)	11.3	hours	\$19.02	\$215	\$0	900 drums @ 80 drums/hr = 11.3 hours @ 1 units/crew = 11.3 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Onsite Drum Shredding				\$4,822	\$0		
2.01.24 Transp Drms: onsite L'fill						Transport whole drums to onsite landfill for disposal: production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	5.6	hours	\$32.45	\$0	\$182	900 drums @ 80 drums/load = 11.3 loads @ 0.5 hours/trip = 5.6 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	5.6	hours	\$45.00	\$0	\$252	900 drums @ 80 drums/load = 11.3 loads @ 0.5 hours/trip = 5.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	5.6	hours	\$6.26	\$0	\$35	900 drums @ 80 drums/load = 11.3 loads @ 0.5 hours/trip = 5.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp Mat'l to Landfill				\$0	\$469	Drums crushed in landfill	
2.01.25 Unload Empty Drum						prod'n rate = 160 drums/hour (assume double the rate of full drums @ site experience)	
Laborer	5.6	hours	\$39.00	\$0	\$218	900 drums @ 160 drums/hr = 5.6 hours @ 1 units/crew = 5.6 hours	one loader oper + one helper; rate 2011 3rd party quote
Loader (medium)	5.6	hours	\$14.39	\$0	\$81	900 drums @ 160 drums/hr = 5.6 hours @ 1 units/crew = 5.6 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Flatbed Trailer (40-ton)	5.6	hours	\$6.26	\$0	\$35	900 drums @ 160 drums/hr = 5.6 hours @ 1 units/crew = 5.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Epty Drum at Landfill				\$0	\$334	Drums crushed in landfill	
2.01.26 Offsite Disp/Shrd'd Drums						assumes off-site land disposal of shredded drums; 20 tons/load	
Offsite Transportation	5.0	miles	\$3.25	\$16	\$0	9 tons @ 20 tons/load = 0.5 (↑1) loads @ 5 miles/trip = 5.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Non-Haz Landfill	10.3	tons	\$35.00	\$361	\$0	900 drums @ 20 lbs/drum = 9 tons @ 1 tons/CY = 9 tons	Modern Disposal/Site Experience
Subt - Offsite Shrd'd Drums Disp'l				\$377	\$0		
(Subt: Assemblies 2.01.20 thru 2.01.26)				\$6,868	\$1,399	onsite drum shredding and off-site non-haz disposal	
2.01.27 Load Spec Treat for O/S T&D						production rate = 40 drums/hour; site experience	
Laborer	6	hours	\$39.00	\$234	\$234	120 drums @ 40 drums/hr = 3.0 hours @ 2 pers/crew = 6.0 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	3	hours	\$22.21	\$67	\$67	120 drums @ 40 drums/hr = 3.0 hours @ 1 units/crew = 3.0 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Dump Trailer (22 ton)	3	hours	\$5.20	\$16	\$16	120 drums @ 40 drums/hr = 3.0 hours @ 1 units/crew = 3.0 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Spec Trt for O/S T&D				\$316	\$316		
2.01.28 Transport Spec Trt Offsite						Estimate based on a per drum basis for special treatment waste: max 120 drums	
Truck Transport @ 88 drums/load	0	miles	\$0.00	\$0	\$0		
Transport per drum	120	drum	\$50.00	\$6,000	\$6,000	Facility estimate based on per drum rate	rate = site experience
Subt - Transport Spec Trt Offsite				\$6,000	\$6,000		

NOTE: Sheet to be added.

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.01.29 Offsite Spec Trt Disposal						disposal price of \$500/drum	
Disposal Cost (Misc Drums)	120	drum	\$500.00	\$60,000	\$60,000	120 drums	site estimate of \$500/drum for unknown wastes
Subt - Offsite Spec Trt Disposal				\$60,000	\$60,000		
<i>(Subt: Assemblies 2.01.27 thru 2.01.29)</i>				\$66,316	\$66,316	<i>offsite T&D of drums requiring special treatment</i>	
2.01.30 Decon Drm Mgmt Bldg (wash)						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	47,557 = Areas 1-9 + fuels pump area & Bladder tank area
Laborer	452.9	hours	\$39.00	\$17,663	\$17,663	47,557 SF @ 105 SF/hr = 452.9 hours @ 1 pers/crew = 452.9 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer		hours	\$4.04	\$0	\$0	Vacuum-Pressure Wash Combo Used	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper		hours	\$3.41	\$0	\$0	not required	RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	452.9	hours	\$22.94	\$10,390	\$10,390	47,557 SF @ 105 SF/hr = 452.9 hours @ 1 units/crew = 452.9 hours	2001 Rate * Implicit Deflator
Subt - Decon Drm Mgt Bldg (Wash)				\$28,053	\$28,053		
2.01.31 Decon Drum Mgt Bldg (Rinse)						production rate = 105 SF/hr for 1-person crew w/ one unit; facility experience	
Laborer	905.8	hours	\$39.00	\$35,326	\$35,326	47,557 SF @ 105 SF/hr = 452.9 hours @ 2 pers/crew = 905.8 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer		hours	\$4.04	\$0	\$0	Vacuum-Pressure Wash Combo Used	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper		hours	\$3.41	\$0	\$0	not required	RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	452.9	hours	\$22.94	\$10,390	\$10,390	47,557 SF @ 105 SF/hr = 452.9 hours @ 1 units/crew = 452.9 hours	2001 Rate * Implicit Deflator
Subt - Decon Drm Mgt Bldg (Rinse)				\$45,716	\$45,716		
2.01.32 Decon Water Samp/Dispose						production rate = 0.5 hours/sample for two techs; DEC treatment unit price = \$0.1042/gallon	
Technician	8.0	hours	\$38.00	\$304	\$304	8 samp @ 0.5 hr/samp = 4 hours @ 2 pers/crew = 8 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	8.0	samp	\$105.00	\$840	\$840	8 samples	analytical price: average of three quotes
On-site Water Disposal	4,755.80	gal	\$0.0313	\$149	\$149	47,557 SF @ 0.05 gal/sf/wa = 2,377.9 gal 0.05 gal/sf/rinse = 2,377.9 gals	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$1,293	\$1,293		
2.01.33 PCB Wipe & Destruct Samp						production rate = 0.5 hours/sample for two techs based upon facility exp	
Technician	79	hours	\$38.00	\$3,002	\$3,002	79 samp @ 0.5 hr/samp = 39.5 hours @ 2 pers/crew = 79 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0	samp	\$446.67	\$0	\$0	concrete core samples and TCLP not required - permit	analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	79	samp	\$83.33	\$6,583	\$6,583	47,557 SF @ 625 SF/samp + 1 dup/20 samp. = 79 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$9,585	\$9,585		
<i>(Subt: Assemblies 2.01.30 thru 2.01.33)</i>				\$84,646	\$84,646	<i>building decontamination and sampling</i>	

Total Labor Hours 1801.3

NOTE: Sheet to be added.

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.01.34 PPE Usage & H&S Planning						Level C @ 75%; Mod Level C @ 25% for total non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Mod Level C	56.3	days	\$9.00	\$507	\$507	1,801.3 hours @ 8 hr/day = 225.2 days @ 25% "Mod C" days = 56.3 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	168.9	days	\$25.00	\$4,223	\$4,223	1,801.3 hours @ 8 hr/day = 225.2 days @ 75% "C" days = 168.9 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	45	hours	\$75.00	\$3,375	\$3,375	1,801.3 hours @ 2.5% hr/hr = 45 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$8,104	\$8,104		
2.01.35 Supervision						4 weeks for closure of Drum Management Building	
Foreman	160	hours	\$65.00	\$10,400	\$10,400	4 weeks @ 40 hrs/wk = 160.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$10,400	\$10,400		
2.01.36 Certification						Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	27	hours	\$130.00	\$3,510	\$3,510	1,801.3 hours @ 0.015 hr/hr = 27 hours	Engineer rate: 2011 3rd party quote
Clerical	27	hours	\$45.00	\$1,215	\$1,215	1,801.3 hours @ 0.015 hr/hr = 27 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$4,725	\$4,725		
<i>(Subt: Assemblies 2.01.34 thru 2.01.36)</i>				\$23,229	\$23,229	<i>supervision, health & safety, and certification</i>	

2.01 New Drum Mgmt Bldg	Direct Cost	Total	Basic	\$714,078	\$352,968
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NOTE: Sheet to be added.

2.01 New Drum Management Building			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost OffSite Disposal	Cost Range
Direct Costs/Basic Disposal		\$714,078	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$49,985	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$28,563	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$42,845	note: DEC uses 6%
Engineering During Construction	2.00%	\$14,282	note: DEC uses 2%
General Contractor Profit	6.00%	\$42,845	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$178,520	
Subtotal - Drum Storage Bldg		\$892,598	
Plus Contingency	10.00%	\$89,260	CWM and DEC 10%
Total - New Drum Management Bldg		\$981,858	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)

"RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)

"RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

3.0 Fuels & PCB Mgmt Area

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
3.1 Inventory Verification						production rate = two persons @ 2 hrs each for four activity areas = 8 hrs = 1.0y total	
Laborer	8	hours	\$39.00	\$312	\$312	2 areas @ 2 hrs/area = 4.0 hours @ 2 units/crew = 8.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification (Subt: Assemblies 1.1 thru 1.1)				\$312	\$312		(note: labor rate provided by local contractor)
3.2 Empty Transformers					\$160,716	prod'n rate = 1,650 gals/hr; RSM/UP p. 9-171 (33-19-0101); 11 transformers @ 386 gals each	
Laborer	5.1	hours	\$39.00	\$199	\$199	4246 gals @ 1650 gals/hr = 2.6 hours @ 2 units/crew = 5.1 hours	two laborers; rate 2011 3rd party quote
Pumping Equipment	2.6	hours	\$71.47	\$186	\$186	4246 gals @ 1650 gals/hr = 2.6 hours @ 1 units/crew = 2.6 hours	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer - 5,000 Gals	2.6	hours	\$6.31	\$16	\$16	4246 gals @ 1650 gals/hr = 2.6 hours @ 1 units/crew = 2.6 hours	T&D rate below includes tanker
Subt - Empty Transformers				\$401	\$401		
3.3 Transp Transformer Liqs Offsite						capacity per tanker = 5 000 gallons capacity per tanker = 5,000 gallons	
Transport in 5,000 Gal Tanker	1529.0	miles	\$3.50	\$5,352	\$5,352	4246 gals @ 5000 gal/tanker = 0.8 loads (↑1.0)@ 1529 miles/load = 1529.0 miles	Rate: transporters quote/site experience
Subt - Transp't Transformer Liquids				\$5,352	\$5,352		
3.4 Dispose of Transformer Liquids						liquid PCB wastes	
Disposal Cost - PCB Liquids	4246	gallons	\$4.68	\$19,871	\$19,871	4246 gallons	HWC/ETC 2004 & Current third party rate
Subt - Transformer O/S Liq Dispos'l (Subt: Assemblies 3.2 thru 3.4)				\$19,871	\$19,871	empty transformers and T&D PCB liquids	
				\$25,624	\$25,624		
3.5 Load 12-ton Transf + 2-ton Pan						prod'n rate = 3 hours/transformer + pan: 12-ton transformer + 2-ton pan (11' x 7' x .67' @ 75#/CF)	
Laborer	66	hours	\$39.00	\$2,574	\$2,574	11 tr/pan @ 3 hr/tr-pan = 33.0 hours @ 2 units/crew = 66.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Yard Crane (25-ton)	33	hours	\$86.31	\$2,848	\$2,848	11 tr/pan @ 3 hr/tr-pan = 33.0 hours @ 1 units/crew = 33.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Equipment Operator (Crane)	33	hours	\$50.00	\$1,650	\$1,650	11 tr/pan @ 3 hr/tr-pan = 33.0 hours @ 1 units/crew = 33.0 hours	loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	33	hours	\$6.26	\$207	\$207	11 tr/pan @ 3 hr/tr-pan = 33.0 hours @ 1 units/crew = 33.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Transf/Pans OnSite L/F				\$7,279	\$7,279		
3.6 Trans Transf/Pans to Onsite L/F						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	5.5	hours	\$32.45	\$0	\$178	11 tr/pan @ 1 tr-pan/load = 11.0 loads @ 0.5 hr/load = 5.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	5.5	hours	\$45.00	\$0	\$248	11 tr/pan @ 1 tr-pan/load = 11.0 loads @ 0.5 hr/load = 5.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	5.5	hours	\$6.26	\$0	\$34	11 tr/pan @ 1 tr-pan/load = 11.0 loads @ 0.5 hr/load = 5.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp Transf/Pans O/S L'Fill				\$0	\$460	onsite disposal of transformers and pans	
3.7 Unload Transf/Pans at O/S L/F						prod'n rate = 2 hours/transformer + pan: 12-ton transformer + 2-ton pan	
Laborer	22	hours	\$39.00	\$0	\$858	11 tr/pan @ 2 hr/tr-pan = 22.0 hours @ 1 units/crew = 22.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Yard Crane (25-ton)	22	hours	\$86.31	\$0	\$1,899	11 tr/pan @ 2 hr/tr-pan = 22.0 hours @ 1 units/crew = 22.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Equipment Operator (Crane)	22	hours	\$50.00	\$0	\$1,100	11 tr/pan @ 2 hr/tr-pan = 22.0 hours @ 1 units/crew = 22.0 hours	loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	22	hours	\$6.26	\$0	\$138	11 tr/pan @ 2 hr/tr-pan = 22.0 hours @ 1 units/crew = 22.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Transf/Pans Onsite				\$0	\$3,995	onsite disposal of transformers and pans	

3.0 Fuels & PCB Mgmt Area

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
3.8 Offsite Disp - Transf/Pans						assumes off-site land disposal; 1 trans-pan/load; Facility Estimate assumes on-site disposal	
Offsite Transportation	4235.0	miles	\$3.50	\$14,823	\$0	11 tr/pan @ 1 tr-pan/load = 11.0 loads @ 385 miles/trip = 4235.0 miles	Rate: transporters quote/site experience
Offsite Disposal	2233	CF	\$12.50	\$27,913	\$0	11 units @ 14 ton/unit = 154.0 ton @ 2 ton/CY = 77 CY	DEC 2004 Estimate accounting for inflation
Subt - Offsite Transf/Pans Disposal				\$42,735	\$0		
(Subt: Assemblies 3.5 thru 3.8)				\$50,014	\$11,734	loading, transport & off-site land disposal of 11 transformers + pans; offsite T&D for transformer oil	
3.9 Transp T.O. Liquids Offsite						two (2) standing 6,000-gal tankers parked @ T.O. Bldg Unloading Ramp = 12,000 gallons	
Transport in 6,000 Gal Tanker	3058	miles	\$3.50	\$10,703	\$10,703	12000 gals @ 6000 gal/tanker = 2.0 loads @ 1529 miles/trip = 3058.0 miles	Rate: transporters quote/site experience
Subt - Transp T.O. Liquids Offsite				\$10,703	\$10,703		
3.10 Offsite T.O. Liquids Disposal						PCB liquid wastes	
Disposal Cost - Liquids	12000	gallons	\$4.68	\$56,160	\$56,160	12000 gallons	HWC/ETC 2004 & Current third party rate
Subt - Offsite T.O. Liquids Disposal				\$56,160	\$56,160		
(Subt: Assemblies 3.9 thru 3.10)				\$66,863	\$66,863	offsite T&D of two (2) 6,000-gallon tankers	
3.11 Decon T.O. Bldg/ramp (Wash)						production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	79.4	hours	\$39.00	\$3,097	\$3,097	8342 SF @ 105 SF/hr = 79.4 hours @ 1 units/crew = 79.4 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	0	hours	\$4.04	\$0	\$0	not applicable	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	0	hours	\$0.83	\$0	\$0	not applicable	RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	79.4	hours	\$22.94	\$1,821	\$1,821	8342 SF @ 105 SF/hr = 79.4 hours @ 1 units/crew = 79.4 hours	equip't price: average of three quotes
Subt - Decon T.O. Bldg/ramp (wash)				\$4,918	\$4,918		
3.12 Decon T.O. Bldg/ramp (Rinse)						production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	79.4	hours	\$39.00	\$3,097	\$3,097	8342 SF @ 105 SF/hr = 79.4 hours @ 2 units/crew = 79.4 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	0	hours	\$4.04	\$0	\$0	not applicable	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	0	hours	\$0.83	\$0	\$0	not applicable	RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	79.4	hours	\$22.94	\$1,821	\$1,821	8342 SF @ 105 SF/hr = 79.4 hours @ 1 units/crew = 79.4 hours	equip't price: average of three quotes
Subt - Decon T.O. bldg/ramp (rinse)				\$4,918	\$4,918		
3.13 Decon Water Samp/Dispose						production rate = 0.5 hours/sample for two techs; facility treatment unit price = \$0.0273/gallon	
Technician	2.2	hours	\$38.00	\$84	\$84	2.2 samp @ 0.5 hr/samp = 1.1 hours @ 2 units/crew = 2.2 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	2.2	samp	\$105.00	\$231	\$231	2.0 areas 1.1 samp/area = 2.2 samples	analytical price: average of three quotes
On-site Water Disposal	834.2	gal	\$0.0313	\$26	\$26	8342 SF @ 0.05 gal/sf/wa = 417.1 gallons + 0.05 gal/SF/rinse = 834.2 gals	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$341	\$341		

3.0 Fuels & PCB Mgmt Area

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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3.14 PCB Wipe & Destruct Samp						production rate = 0.5 hours/sample for two techs; rate same as facility's	
Technician	15.3	hours	\$38.00	\$581	\$581	15.3 samp @ 0.5 hr/samp = 7.7 hours @ 2 units/crew 15.3 hours	technician rate: rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	2	samp	\$446.67	\$893	\$893	2.0 areas @ 1.0 samp/area = 2.0 samples	analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	13.3	samp	\$83.33	\$1,108	\$1,108	8342 SF @ 625 SF/samp = 13.3 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$2,583	\$2,583		
(Subt: Assemblies 3.11 thru 3.14)				\$12,760	\$12,760	decontamination, sampling, and analysis of T.O. Building and Unloading Ramp	

Total Non-Super hours 304.9

3.15 PPE Usage & H&S Planning						Level C @ 75%; Mod Level C @ 25% for total non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Mod Level C	9.5	days	\$9.00	\$86	\$86	304.9 hours @ 8 hr/day = 38.1 days @ 25% "Mod C" days = 9.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	28.6	days	\$25.00	\$715	\$715	304.9 hours @ 8 hr/day = 38.1 days @ 75% "C" days = 28.6 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	7.6	hours	\$75.00	\$570	\$570	304.9 hours @ 2.5% hr/hr = 7.6 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$1,371	\$1,371		
3.16 Supervision						1 week for closure of Fuels & PCB Management Area	
Foreman	40	hours	\$65.00	\$2,600	\$2,600	1 week @ 40 hrs/wk = 40.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$2,600	\$2,600		
3.17 Certification						Engineer @ 8 hrs and Clerical @8 hrs: site experience	
Engineer	6.7	hours	\$130.00	\$871	\$871	304.9 hours @ 0.015 hr/hr = 6.7 hours	Engineer rate: 2011 3rd party quote
Clerical	6.7	hours	\$45.00	\$302	\$302	304.9 hours @ 0.015 hr/hr = 6.7 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$1,173	\$1,173		
(Subt: Assemblies 3.15 thru 3.17)				\$5,143	\$5,143	supervision, health & safety, and certification	

3.0 Fuels/PCB Management	Direct Cost	Total	Basic	\$160,716	\$122,435
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3.0 Fuels/PCB Management Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost OffSite Disposal	Cost Range
Direct Costs/Basic Disposal		\$160,716	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$11,250	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$6,429	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$9,643	note: DEC uses 6%
Engineering During Construction	2.00%	\$3,214	note: DEC uses 2%
General Contractor Profit	6.00%	\$9,643	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$40,179	
Subtotal - Fuels/PCB Mgmt Area		\$200,894	\$226,124
Plus Contingency	10.00%	\$20,089	CWM and DEC 10%
Total - Fuels/PCB Mgmt Area		\$220,984	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)

"RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)

"RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

NOTE: Sheet to be removed.

4.0 Stabilization

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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	Inventory
RCRA Solids – Shredder/Landfill	300 drums/75 cu. yds.
RCRA Solids - Stab/Landfill	83 rolloffs/1040 tons
RCRA Solids - Macro/Landfill	18 rolloffs/288 tons
PCB Liquids - Incineration	5 tankers/27,500 gals

4.1 Inventory Verification						prod'n rates: 2 drums/min/crew (100 drums/hour); and 8 tanker or rolloff/hour/crew; two persons required;	
Laborer	6	hours	\$39.00	\$234	\$234	300 drums @ 100 drums/hr = 3.0 hours @ 2 units/crew = 6.0 hours	HASP req's two; loaded labor rate 2011 3rd party quote
Laborer	20.8	hours	\$39.00	\$811	\$811	83 rolloffs @ 8 rolloffs/hr = 10.4 hours @ 2 units/crew = 20.8 hours	HASP req's two; loaded labor rate 2011 3rd party quote
Laborer	2.5	hours	\$39.00	\$98	\$98	5 tankers @ 4 rolloffs/hr = 1.2 hours @ 2 units/crew = 2.5 hours	HASP req's two; loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$1,143	\$1,143		
(Subt: Assemblies 4.1)				\$1,143	\$1,143	survey and inventory of capacity of Stabilization area	

4.2 Transp All Rolloffs: Onsite Stab for Offsite disp						production rate = 0.5 hours/rolloff for on-site travel (all rolloffs previously existing at site)	
Road Tractor (4 x 2, 30-ton)	32.5	hours	\$32.45	\$1,055	\$0	65 rolloffs @ 1 rolloff/load = 65.0 loads @ 0.5 hours/trip = 32.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	32.5	hours	\$45.00	\$1,463	\$0	65 rolloffs @ 1 rolloff/load = 65.0 loads @ 0.5 hours/trip = 32.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0	hours	\$19.02	\$0	\$0	0 rolloffs @ 1 rolloff/load = 0.0 loads @ 0.5 hours/trip = 0.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subtotal -Transport Rolloffs Onsite				\$2,517	\$0		

4.2a Transp All Rolloffs: Onsite Stab for Onsite disp						production rate = 0.5 hours/rolloff for on-site travel (all rolloffs previously existing at site)	
Road Tractor (4 x 2, 30-ton)	32.5	hours	\$32.45	\$0	\$1,055	65 rolloffs @ 1 rolloff/load = 65.0 loads @ 0.5 hours/trip = 32.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	32.5	hours	\$45.00	\$0	\$1,463	65 rolloffs @ 1 rolloff/load = 65.0 loads @ 0.5 hours/trip = 32.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0	hours	\$19.02	\$0	\$0	0 rolloffs @ 1 rolloff/load = 0.0 loads @ 0.5 hours/trip = 0.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subtotal -Transport Rolloffs Onsite				\$0	\$2,517		

4.3 Stabilization (non-Macro mat'l) for Offsite disp						prod'n rate = 100 tons/hour = 800 tons/day (non-Macro Room material); 30 CY roll = 16 tons	
PROCESS TONS (incl kiln dust)	1196.0	TONS	n/a			65 rolloffs @ 30 CY each @ 16 tons/rolloff + 15% kiln dust = 1196.0 tons	30 CY/rolloff = 16 ton material/rolloff
Cement Kiln Dust - Mat'l&Delv Cost	156.0	tons	\$48.00	\$7,488	\$0	65 rolloffs @ 30 CY each @ 16 tons/rolloff + 15% kiln dust = 1196.0 tons	CWM actual 2011 costs
Stabilization Cost	1040.0	tons	\$25.00	\$26,000	\$0	Facility combined rate for material & delivery	CWM actual 2011 costs inc. labor & equipment
TCLP Testing - RCRA (EPA 1311)	21.7	samp	\$348.33	\$7,559	\$0	65 rolloffs @ 3 ro's/samp = 21.7 samples	average of 3 third party labs; one sample per 3 rolloffs
Subt - Stabilization				\$41,047	\$0	Facility include in stabilization rate; inc. labor & equipment	

4.3a Stabilization (non-Macro mat'l) for Onsite disp						prod'n rate = 100 tons/hour = 800 tons/day (non-Macro Room material); 30 CY roll = 16 tons	
PROCESS TONS (incl kiln dust)	1196.0	TONS	n/a			65 rolloffs @ 30 CY each @ 16 tons/rolloff + 15% kiln dust = 1196.0 tons	30 CY/rolloff = 16 ton material/rolloff
Cement Kiln Dust - Mat'l&Delv Cost	156.0	tons	\$48.00	\$0	\$7,488	65 rolloffs @ 30 CY each @ 16 tons/rolloff + 15% kiln dust = 1196.0 tons	CWM actual 2011 costs
Stabilization Cost	1040.0	tons	\$25.00	\$0	\$26,000	Facility combined rate for material & delivery	CWM actual 2011 costs inc. labor & equipment
TCLP Testing - RCRA (EPA 1311)	21.7	samp	\$348.33	\$0	\$7,559	65 rolloffs @ 3 ro's/samp = 21.7 samples	average of 3 third party labs; one sample per 3 rolloffs
Subt - Stabilization				\$0	\$41,047	Facility include in stabilization rate; inc. labor & equipment	

NOTE: Sheet to be removed.

4.0 Stabilization

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
4.4 Load non-Macro Rolloffs						facility include in stabilization cost	
Laborer	0	hours	\$39.00	\$0	\$0	Not required	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0	hours	\$19.18	\$0	\$0		RSM/HC p. 467 (line item 01 54 33 20 0460)
Equipment Operator (Medium)	0	hours	\$45.00	\$0	\$0		loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0	hours	\$19.02	\$0	\$0		dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Load non-Macro Rolloffs				\$0	\$0		
4.5 Transp Rolloffs to Onsite L'fill						production rate = 0.25 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	16.2	hours	\$32.45	\$0	\$526	65 rolloffs @ 1 rolloff/load = 65.0 loads @ 0.25 hours/trip = 16.2 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	16.2	hours	\$45.00	\$0	\$729	65 rolloffs @ 1 rolloff/load = 65.0 loads @ 0.25 hours/trip = 16.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Transp RO's to Onsite Landfill				\$0	\$1,255	Assembly estimate assumes on-site disposal	
4.6 Unload non-Macro Rolloffs						production rate = 0.25 hours for unload in landfill	
Laborer	16.2	hours	\$39.00	\$0	\$632	65 rolloffs @ 1 rolloff/load = 65.0 loads @ 0.25 hours/trip = 16.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	16.2	hours	\$19.18	\$0	\$311	65 rolloffs @ 1 rolloff/load = 65.0 loads @ 0.25 hours/trip = 16.2 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Equipment Operator (Medium)	16.2	hours	\$45.00	\$0	\$729	65 rolloffs @ 1 rolloff/load = 65.0 loads @ 0.25 hours/trip = 16.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0	hours	\$19.02	\$0	\$0		dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Unload RO's at Onsite L'Fill				\$0	\$1,672	Assembly estimate assumes on-site disposal	
4.7 Offsite Landfill Disp/Solids						assumes off-site land disposal; 42 roll-offs	
Offsite Transportation - Solids	28798.0	miles	\$3.25	\$93,594	\$0	1196 tons @ 16 tons/load = 74.8 loads @ 385 miles/trip = 28798 miles	Rate: transporters quote/site experience
Offsite Disp - Haz Rolloff Solids	1196.0	tons	\$133.00	\$159,068	\$0	65 rolloffs @ 30 CY each @ 16 tons/rolloff + 15% kiln dust = 1196.0 tons	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Off-site Landfill/non-Macro				\$252,662	\$0		
4.8 Stab n/Encap n (Macro mat'l)						production rate = 40 tons/hour = 320 tons/day (Macro material): for onsite disposal	
PROCESS TONS (incl kiln dust)	419.2	TONS				18 rolloffs @ 30 CY each @ 0.675 ton/CY + 15% absorbent = 419.2 tons	1 CY = 1,350# (0.675 ton) @ 50# per CF for "loose" mat'l
Laborer	41.9	hours	\$39.00	\$1,634	\$0	419.2 tons @ 40 tons/hr @ 10.5 hours @ 4 units/crew = 41.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	21	hours	\$50.00	\$1,050	\$0	419.2 tons @ 40 tons/hr @ 10.5 hours @ 2 units/crew = 21.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	10.5	hours	\$19.18	\$201	\$0	419.2 tons @ 40 tons/hr @ 10.5 hours @ 1 units/crew = 10.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader (Medium)	10.5	hours	\$14.39	\$151	\$0	419.2 tons @ 40 tons/hr @ 10.5 hours @ 1 units/crew = 10.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Absorbent Additive	81	CY	\$38.70	\$3,135	\$0	18 rolloffs @ 30 CY each @ 15% additive = 81 CY	2004 DEC Rate * Implicit Deflator
Encapsulation Container	18.0	units	\$1,000.00	\$18,000	\$0	18.0 units	CWM actual 2011 costs
Rolloff (30-CY) (not used)	0.0	units	\$19.02	\$0	\$0	0.0 units	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stab'n/Encap'n - Macro Mat'l				\$24,171	\$0		
4.9 Transp Macro Encap'n Onsite						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	9.0	hours	\$32.45	\$0	\$292	18 rolloffs @ 1 rolloff/load = 18.0 loads @ 0.5 hours/trip = 9.0 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	9.0	hours	\$45.00	\$0	\$405	18 rolloffs @ 1 rolloff/load = 18.0 loads @ 0.5 hours/trip = 9.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0	hours	\$19.02	\$0	\$0		RSM/HC p. 472 (line item 01 54 33 40 6600)
Subtotal - Transp Macro Encap'n				\$0	\$697	Assembly estimate assumes on-site disposal	

NOTE: Sheet to be removed.

4.0 Stabilization

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
4.10 Offsite Macro Encap'n						assumes off-site land disposal; 18 macro-encap. conts. on-site disposal	
Offsite Transp'n - Encap Containers	6930.0	miles	\$3.25	\$22,523	\$0	18.0 contain @ 1 cont/load = 18.0 loads @ 385 miles/trip = 6930.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Encap Containers	510.0	CY	\$337.50	\$172,125	\$0	18.0 contain @ 30 CY/cont = 510.0 CY	DEC 2004 Estimate accounting for inflation
Subt - Offsite Landfill Disp/Solids				\$194,648	\$0		
(Subt: Assemblies 4.2 thru 4.10)				\$515,044	\$47,187	onsite stabilization and offsite or onsite disposal of all Macro Room material	
4.11 Shred Drums with Contents						Shredding of drums not necessary. Drums transported direct to onsite landfill or offsite landfill	
Laborer	0	hours	\$39.00	\$0	\$0		loaded labor rate: loaded labor rate 2011 3rd party quote
Drum Shredder	0	hours	\$329.70	\$0	\$0		2004 DEC Rate * Implicit Deflator
Rolloff (30-CY)	0	hours	\$19.02	\$0	\$0		RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Drums for Offsite L'fill				\$0	\$0		
4.11a Load Full Solids Drums						production rate = 80 drums/hour/person; Facility experience	
Laborer	3.8	hours	\$39.00	\$0	\$148	300 drums @ 80 drums/hr = 3.8 loads @ 2 units/crew = 3.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	1.9	hours	\$22.21	\$0	\$42	300 drums @ 80 drums/hr = 3.8 loads @ 1 units/crew = 1.9 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	1.9	hours	\$6.26	\$0	\$12	300 drums @ 80 drums/hr = 3.8 loads @ 1 units/crew = 1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load PCB Sol Drms to L'Fill				\$0	\$202		
4.12 Transp Full Drms: onsite L'fill						Assumes onsite land disposal; 0.5 hr per load to onsite landfill	
Road Tractor (4 x 2, 30-ton)	1.9	hours	\$32.45	\$0	\$62	300 drums @ 80 drums/load = 3.8 loads @ 0.5 hr/load = 1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	1.9	hours	\$45.00	\$0	\$86	300 drums @ 80 drums/load = 3.8 loads @ 0.5 hr/load = 1.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	1.9	hours	\$6.26	\$0	\$12	300 drums @ 80 drums/load = 3.8 loads @ 0.5 hr/load = 1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Shrd Drms to Onsite Landfill				\$0	\$159		
4.13 Unload Full Drms: onsite L'fill						assumes on-site disposal: production rate = 80 drums/hour/person; Facility experience	
Laborer	3.8	hours	\$39.00	\$0	\$148	300 drums @ 80 drums/hr = 3.8 loads @ 2 units/crew = 3.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	1.9	hours	\$22.21	\$0	\$42	300 drums @ 80 drums/hr = 3.8 loads @ 1 units/crew = 1.9 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	1.9	hours	\$6.26	\$0	\$12	300 drums @ 80 drums/hr = 3.8 loads @ 1 units/crew = 1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Full Drums				\$0	\$202		
4.14 Offsite Disp Full Drums						assumes off-site land disposal; volume based on 4 drums/CY (+ drum contents)	
Offsite Transp'n - Drum Mat'l	1463.0	miles	\$3.50	\$5,121	\$0	300 drums @ 80 drums/ld = 3.8 loads @ 385 miles/trip = 1463.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Drum Mat'l	300	drums	\$100.00	\$30,000	\$0	300 drums	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite L/F Disp: Full Drums				\$35,121	\$0	disposal of 300 drums with contents from drum shred area	
(Subt: Assemblies 4.11 thru 4.14)				\$35,121	\$564		
4.15 Offsite T&D - Tankers						five 5,500-gal existing tankers loaded and parked at stabilization parking area	
Offsite Transp'n - 5.5K-gal Tankers	7645.0	miles	\$3.50	\$26,758	\$26,758	5 tankers @ 1529 miles/load = 7645.0 miles	Rate: transporters quote/site experience
Off-site Disp - Incin Bulk PCB Liqs	27500.0	gallons	\$4.68	\$128,700	\$128,700	5 tankers @ 5500 gals/tankr = 27500.0 gals	HWC/ETC 2004 & Current third party rate
Subt - Offsite T&D - Tankers				\$155,458	\$155,458	offsite transportation and disposal of 10 five-thousand gallon tankers from stabilization area	
(Subt: Assemblies 4.15)				\$155,458	\$155,458		

NOTE: Sheet to be removed.

4.0 Stabilization

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
4.16 Decon Equipment						prod'n rate = 52.5 SF/hr (1/2 of RSM/UP p. 9-167, 33-17-0813, as wash & rinse are combined)	
Reagent Silo/Hopper	19.0	hours	\$121.50	\$2,309	\$2,309	2 units @ 500 SF each = 1000.0 SF @ 52.5 SF/hour = 19.0 hours	2004 DEC Rate * Implicit Deflator
Control Room	19.0	hours	\$121.50	\$2,309	\$2,309	1 units @ 1000 SF each = 1000.0 SF @ 52.5 SF/hour = 19.0 hours	assume 20' x 10' x 10' (L x W x H)
Air Compressor/Ancillary Equip't	1.9	hours	\$121.50	\$231	\$231	1 units @ 100 SF each = 100.0 SF @ 52.5 SF/hour = 1.9 hours	assume 100 SF
Hydraulic Skid/Ancillary Equip't	14.3	hours	\$121.50	\$1,737	\$1,737	1 units @ 750 SF each = 750.0 SF @ 52.5 SF/hour = 14.3 hours	assume 750 SF
Drum Shredder	0.0	hours	\$121.50	\$0	\$0	Drum Shredder cleaned and removed 2009	
Knuckle Boom	9.5	hours	\$121.50	\$1,154	\$1,154	1 units @ 500 SF each = 500.0 SF @ 52.5 SF/hour = 9.5 hours	assume 500 SF
Backhoe	1.9	hours	\$121.50	\$231	\$231	1 units @ 100 SF each = 100.0 SF @ 52.5 SF/hour = 1.9 hours	assume 100 SF
Subt - Decon Equip't (wash & rinse)				\$7,970	\$7,970	7 units 3450.0 SF total	
4.17 Decon Water Samp/Dispose						production rate = 0.5 hours/sample for two techs; facility treatment unit price = \$0.0273/gallon	
Technician	7.7	hours	\$38.00	\$293	\$293	7.7 samp @ 0.5 hr/samp = 3.8 hours @ 2 units/crew = 7.7 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	7.7	samp	\$105.00	\$809	\$809	7.0 units @ 1.1 samp/unit = 7.7 samples	analytical price: average of three quotes
Onsite Water Disposal	3150.0	gal	\$0.0313	\$99	\$99	3450.0 SF @ 0.5 gal/sf/wa = 2100.0 gallons + 0.25 gal/sf/rinse = 1050.0 gallons	facility o/s mild waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$1,200	\$1,200		
4.18 PCB Wipe Samples						production rate = 0.5 hours/sample for two techs; rate same as facility's	
Technician	7.7	hours	\$38.00	\$293	\$293	7.7 samp @ 0.5 hr/samp = 3.8 hours @ 2 units/crew = 7.7 hours	technician rate: rate 2011 3rd party quote
PCB Analysis/Wipe Test (SW 8081/8082)	7.7	samp	\$83.33	\$642	\$642	7.0 units @ 1.1 samp/unit = 7.7 samples	analytical price: average of three quotes
Subt - Wipe Samples				\$934	\$934		
4.19 Dismant/Load Equipment						prod'n rate = 150 SF/hr (based upon removing one 20K-gal tank in 8 hrs: 1,225 SF div. by 8 = 153 sf)	
Laborer	46.0	hours	\$39.00	\$1,794	\$1,794	3450 SF @ 150 SF/hour 23.0 hours 2 units/crew = 46.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment (300 amp towable)	23.0	hours	\$4.90	\$113	\$113	3450 SF @ 150 SF/hour 23.0 hours 1 units/crew = 23.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Yard Crane (25-ton)	23.0	hours	\$86.31	\$1,985	\$1,985	3450 SF @ 150 SF/hour 23.0 hours 1 units/crew = 23.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Equipment Operator (Crane)	23.0	hours	\$50.00	\$1,150	\$1,150	3450 SF @ 150 SF/hour 23.0 hours 1 units/crew = 23.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Dismantle Equipment				\$5,042	\$5,042		
(Subt: Assemblies 4.16 thru 4.19)				\$15,146	\$15,146	decontaminating and dismantling Equipment	
4.20 Demo/Load/Trans Ducts/Bagh						prod'n rates: 125 LF/hr (ductwork) = 7 days; four days/unit (baghouses) = 32 days; total = 39 days	
Dismantle/Cut/Load Ductwork	7040.0	LF	\$2.14	\$15,066	\$15,066	7040 LF @ 3 SF/LF = 21120.0 SF @ 0.021 CF/SF = 16.4 CY	2004 DEC Rate * Implicit Deflator
Dismantle/Cut/Load Baghouses	8.0	each	\$7,340.17	\$58,721	\$58,721	8 units @ 2500 SF/unit = 20000.0 SF @ 0.021 CF/SF = 15.6 CY	2001 Rate * Implicit Deflator
Subt - Dismantle Ducts/Baghouses				\$73,787	\$73,787		

NOTE: Sheet to be removed.

4.0 Stabilization

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
4.21 Unload/Stabilize/Encapsulate						production rate = 15 tons/hour = 120 tons/day; includes shredding and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	37.2	TONS				32.0 CY @ 1.0125 ton/CY + 15% kiln dust = 37.2 tons	1 CY = 2,025# (1.0125 ton) @ 75# per CF
Laborer	5.0	hours	\$39.00	\$195	\$195	37.2 tons @ 15 tons/hr @ 2.5 hours @ 2 units/crew = 5.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	7.4	hours	\$45.00	\$333	\$333	37.2 tons @ 15 tons/hr @ 2.5 hours @ 3 units/crew = 7.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	2.5	hours	\$19.18	\$48	\$48	37.2 tons @ 15 tons/hr @ 2.5 hours @ 1 units/crew = 2.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	2.5	hours	\$14.39	\$36	\$36	37.2 tons @ 15 tons/hr @ 2.5 hours @ 1 units/crew = 2.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	2.5	hours	\$329.70	\$824	\$824	37.2 tons @ 15 tons/hr @ 2.5 hours @ 1 units/crew = 2.5 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	2.5	hours	\$136.29	\$341	\$341	37.2 tons @ 15 tons/hr @ 2.5 hours @ 1 units/crew = 2.5 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	\$0	32.0 CY @ 1.0125 ton/CY @ 15% kiln dust = 4.9 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	\$0	4.9 tons @ 20 ton/load = 0.2 loads	
Cement Kiln Dust - Mat'l&Delv Cost	4.9	tons	\$48.00	\$235	\$235		CWM actual 2011 costs
Encapsulation Containers	2.0	units	\$1,000.00	\$2,000	\$2,000	37.2 tons @ 18.6 ton/unit = 2.0 containers	CWM actual 2011 costs
Rolloffs (30-CY)	5.0	hours	\$19.02	\$95	\$95	37.2 tons @ 18.6 tons/unit = 2.0 rolloffs @ 2.5 hours/rolloff = 5.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$4,107	\$4,107		
4.22 Transp Encap Units onsite L'F						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	1.0	hours	\$32.45	\$0	\$32	2 rolloffs @ 1 rolloff/load = 2.0 loads @ 0.5 hours/trip = 1.0 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	1.0	hours	\$45.00	\$0	\$45	2 rolloffs @ 1 rolloff/load = 2.0 loads @ 0.5 hours/trip = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0.0	hours	\$19.02	\$0	\$0		RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Shrd Drms to Onsite Landfill				\$0	\$77	Transport to onsite landfill for disposal	
4.23 Offsite Disp/Bghouse-Duct						assumes off-site disposal; 2 macro-encap cont.; stabilized/encap. Baghouse debris	
Offsite Transp - Baghouse/Duct	770.0	miles	\$3.25	\$2,503	\$0	37.2 tons @ 18.6 tons/load = 2.0 loads @ 385 miles/trip = 770.0 miles	Rate: transporters quote/site experience
Offsite Disp'l - Baghouse/Duct Deb	36.8	CY	\$337.50	\$12,420	\$0	37.2 tons @ 1.013 tons/CY = 36.8 CY @ 27 CF/CY = 993.0 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite B'house/Duct Disp'l				\$14,923	\$0		
<i>(Subt: Assemblies 4.20 thru 4.23)</i>				\$92,817	\$77,972	<i>demolition, stabilization, encapsulation, and off-site disposal of ductwork and baghouses</i>	
4.24 Decon Stab'n Areas (wash)						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	628.6	hours	\$39.00	\$24,515	\$24,515	66009 SF @ 105 SF/hr = 628.6 hours @ 1 units/crew = 628.6 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	396.4	hours	\$4.04	\$1,601	\$1,601	41619 SF @ 105 SF/hr = 396.4 hours @ 1 units/crew = 396.4 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	0.0	hours	\$0.83	\$0	\$0		RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	232.3	hours	\$22.94	\$5,329	\$5,329	24390 SF @ 105 SF/hr = 232.3 hours @ 1 units/crew = 232.3 hours	equip't price: average of three quotes
Subt - Decon Stab'n Areas (wash)				\$31,445	\$31,445	Pressure wash containment areas, walls, pits, & vacuum-pressure wash floors	
4.25 Decon Stab'n Areas (rinse)						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	232.3	hours	\$39.00	\$9,060	\$9,060	24390 SF @ 105 SF/hr = 232.3 hours @ 1 units/crew = 232.3 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	0.0	hours	\$4.04	\$0	\$0		RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	0.0	hours	\$0.83	\$0	\$0		RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	232.3	hours	\$22.94	\$5,329	\$5,329	24390 SF @ 105 SF/hr = 232.3 hours @ 1 units/crew = 232.3 hours	equip't price: average of three quotes
Subt - Decon Stab'n Areas (rinse)				\$14,389	\$14,389	Rinse floor areas only	

NOTE: Sheet to be removed.

4.0 Stabilization

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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4.26 Decon Water Samp/Dispose						production rate = 0.5 hours/sample for two techs;	
Technician	13.2	hours	\$38.00	\$502	\$502	13.2 samp @ 0.5 hr/samp = 6.6 hours @ 2 units/crew 13.2 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	13.2	samp	\$105.00	\$1,386	\$1,386	12.0 areas @ 1.1 samp/area = 13.2 samples	analytical price: average of three quotes
On-site Water Disposal (wash only)	20809.5	gal	\$0.0313	\$651	\$651	41619 SF @ 0.5 gal/sf/wa = 20809.5 gallons	site waters waste treat price ; vol @ 0.5 gal/sf (equip lit)
On-site Water Disposal (wash-rinse)	1219.5	gal	\$0.0313	\$38	\$38	24390 SF @ 0.05 gal/sf/wa = 1219.5 gallons + 0.05 gal/sf/rinse = 1219.5 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$2,577	\$2,577		
4.27 PCB Wipe & Destruct Samp						production rate 0.5 hours/sample for two techs; rate same as facility's	
Technician	75.4	hours	\$38.00	\$2,865	\$2,865	74.4 samp @ 0.5 hr/samp = 37.7 hours @ 2 units/crew = 75.4 hours	technician rate: rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	2.0	samp	\$446.67	\$893	\$893	2.0 areas @ 1 samp/area = 2.0 samples Uncoated concrete areas	analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	75.4	samp	\$83.33	\$6,283	\$6,283	47129.0 SF @ 625 SF/samp = 75.4 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$10,042	\$10,042		
(Subt: Assemblies 4.24 thru 4.27)				\$58,452	\$58,452	decontamination & sampling of floors, sumps, and pits	

Total Non-Super hours 1263.6

4.28 PPE Usage & H&S Planning						Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Mod Level C	39.5	days	\$9.00	\$356	\$356	1263.6 hours @ 8 hr/day = 158.0 days @ 25% "Mod C" days = 39.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	118.5	days	\$25.00	\$2,963	\$2,963	1263.6 hours @ 8 hr/day = 158.0 days @ 75% "C" days = 118.5 days	75% of non-supv hrs in Level C (price: \$25/day)
Health & Safety Officer	31.6	hours	\$75.00	\$2,370	\$2,370	1263.6 hours @ 2.5% hr/hr = 31.6 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$5,688	\$5,688		
4.29 Supervision						4 weeks for closure of Stabilization	
Foreman	160	hours	\$65.00	\$10,400	\$10,400	4 weeks @ 40 hrs/wk = 160.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$10,400	\$10,400		
4.30 Certification						Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory labor hours for all tasks	
Engineer	19	hours	\$130.00	\$2,470	\$2,470	1263.6 hours @ 0.015 hr/hr = 19.0 hours	Engineer rate: 2011 3rd party quote
Clerical	19	hours	\$45.00	\$855	\$855	1263.6 hours @ 0.015 hr/hr = 19.0 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$3,325	\$3,325		
(Subt: Assemblies 4.28 thru 4.30)				\$19,413	\$19,413	supervision, health & safety, and certification	

4.0 Stabilization Activity	Direct Cost	Total	Basic	\$892,593	\$375,334
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NOTE: Sheet to be removed.

4.0 Stabilization			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost OffSite Disposal	Cost Range
Direct Costs/Basic Disposal		\$892,593	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$62,482	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$35,704	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$53,556	note: DEC uses 6%
Engineering During Construction	2.00%	\$17,852	note: DEC uses 2%
General Contractor Profit	6.00%	\$53,556	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$223,148	
Subtotal - Stabilization Activity		\$1,115,741	
Plus Contingency	10.00%	\$111,574	CWM and DEC 10%
Total - Stabilization		\$1,227,316	

Cost References:

- "RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
- "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
- "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

Overall Site-Wide Closure Cost Estimate

20-Dec-13

NOTE: Sheet to be added.

4.01 Stabilization (revised)												
Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Price - Offsite Disposal	2011 CWM Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate				In-house Pricing References		
4.01.1 Inventory Verification							prod'n rates: 2 min/drum (100 drums/hour); and 8 tankers or 4 rollofs/hour; two persons required					
Laborer	6.0	hours	\$39.00	\$234	\$234	300 drums @	100 drums/hr =	3.0 hours @	2 units/crew =	6.0 hours	HASP req's two; loaded labor rate 2011 3rd party quote	
Laborer	27.3	hours	\$39.00	\$1,063	\$1,063	109 rollofs @	0.125 hr/rolloff =	13.6 hours @	2 units/crew =	27.3 hours	HASP req's two; loaded labor rate 2011 3rd party quote	
Laborer	8.0	hours	\$39.00	\$312	\$312	16 tankers @	0.25 hr/tanker =	4.0 hours @	2 units/crew =	8.0 hours	HASP req's two; loaded labor rate 2011 3rd party quote	
Subtotal - Inventory Verification				\$1,609	\$1,609							
(Subt: Assemblies 4.01.1)				\$1,609	\$1,609	survey and inventory of maximum capacity of Stabilization area						
4.01.2 Transp Rollofs: Onsite Stab							production rate = 0.5 hours/rolloff for on-site travel (all rollofs previously existing at site)					
Road Tractor (4 x 2, 30-ton)	45.5	hours	\$32.45	\$1,476	\$1,476	91 rollofs @	1 rolloff/load =	91.0 loads @	0.5 hours/trip =	45.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)	
Driver	45.5	hours	\$45.00	\$2,048	\$2,048	91 rollofs @	1 rolloff/load =	91.0 loads @	0.5 hours/trip =	45.5 hours	HASP req's two; loaded labor rate 2011 3rd party quote	
Rolloff (30-CY) (existing equip't)	0.0	hours	\$19.02	\$0	\$0	0 rollofs @	1 rolloff/load =	0.0 loads @	0.5 hours/trip =	0.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)	
Subtotal - Transport Rollofs Onsite	91.0	ea @	\$38.73	\$3,524	\$3,524							
4.01.3 Stabilization (non-Macro)							prod'n rate = 100 tons/hour = 800 tons/day (non-Macro Room material); 30 CY roll = 16 tons					
PROCESS TONS (incl kiln dust)	1674.4	TONS	n/a			91 rollofs @	30 CY each @	16 tons/roll +	15% kiln dust =	1674.4 tons	30 CY/rolloff = 16 ton material/rolloff	
Cement Kiln Dust - Mat'l/Deliv Cost	218.4	tons	\$48.00	\$10,483	\$10,483	91 rollofs @	30 CY each @	16 tons/roll +	15% kiln dust =	218.4 tons	CWM actual 2011 costs	
Stabilization Cost	1456.0	tons	\$25.00	\$36,400	\$36,400	Facility combined rate for mat. & del.		91.0 rollofs @	16 tons/roll	1,456 tons	CWM actual 2011 costs inc. labor & equipment	
TCLP Testing - RCRA (EPA 1311)	30.3	samp	\$348.33	\$10,566	\$10,566	91 rollofs @	3 ro's/samp =	30.3 samples			average of 3rd party labs; 1 sample per 3 rollofs	
Subt - Stabilization	91.0	ton @	\$631.31	\$57,449	\$57,449							
4.01.4 Load non-Macro Rollofs							facility included in stabilization cost					
Laborer	0.0	hours	\$39.00	\$0	\$0							
Backhoe (1 CY)	0.0	hours	\$19.18	\$0	\$0							
Equipment Operator (Medium)	0.0	hours	\$25.00	\$0	\$0							
Rolloff (30-CY) (existing equip't)	0.0	hours	\$19.02	\$0	\$0							
Subt - Load non-Macro Rollofs	0.0	tons @		\$0	\$0							
4.01.5 Transp Rollofs to Onsite L'fill							production rate = 0.25 hours for onsite travel					
Road Tractor (4 x 2, 30-ton)	22.8	hours	\$32.45	\$0	\$738	91 rollofs @	1 rolloff/load =	91.0 loads @	0.25 hours/trip =	22.8 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)	
Driver	22.8	hours	\$45.00	\$0	\$1,024	91 rollofs @	1 rolloff/load =	91.0 loads @	0.25 hours/trip =	22.8 hours	loaded labor rate: 2011 3rd party quote	
Subt - Transp RO's to Onsite Landfill	91.0	ea @	\$0.00	\$0	\$1,762							

Overall Site-Wide Closure Cost Estimate
20-Dec-13

NOTE: Sheet to be added.

4.01 Stabilization (revised)												
Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Price - Offsite Disposal	2011 CWM Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate				In-house Pricing References		
4.01.6 Unload non-Macro Rolloffs						production rate = 0.25 hours for onsite travel						
Laborer	22.8	hours	\$39.00	\$0	\$887	91 rolloffs @	1 rolloff/load =	91.0 loads @	0.25 hours/trip =	22.8 hours	loaded labor rate: 2011 3rd party quote	
Backhoe (1 CY)	22.8	hours	\$19.18	\$0	\$436	91 rolloffs @	1 rolloff/load =	91.0 loads @	0.25 hours/trip =	22.8 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)	
Equipment Operator (Medium)	22.8	hours	\$45.00	\$0	\$1,024	91 rolloffs @	1 rolloff/load =	91.0 loads @	0.25 hours/trip =	22.8 hours	loaded labor rate: 2011 3rd party quote	
Rolloff (30-CY) (existing equip't)	0.0	hours	\$19.02	\$0								
Subt - Unload RO's at Onsite L'Fill	91.0	loads @	\$0.00	\$0	\$2,347							
4.01.7 Offsite Landfill Disp/Solids						assumes off-site land disposal; 91 roll-offs; Facility Estimate assumes on-site disposal						
Offsite Transportation - Solids	40290.3	miles	\$3.25	\$130,943	\$0	1674.4 tons	16 tons/load =	104.7 loads @	385 miles/trip =	40290.3 miles	Rate: transporters quote	
Offsite Disp - Haz Rolloff Solids	1674.4	tons	\$133.00	\$222,695	\$0	91 rolloffs @	30 CY each @	16 tons/roll +	15% kiln dust =	1674.4 tons	HWC/ETC 2004 & CWM 2011 industry pricing	
Subt - Off-site Landfill/non-Macro	1674.4	tons @	\$211.20	\$353,639	\$0							
4.01.8 Stab'n/Encap'n (Macro mat'l)						production rate = 40 tons/hour = 320 tons/day (Macro material)						
PROCESS TONS (incl kiln dust)	419.2	TONS	n/a			18 rolloffs @	30 CY each @	0.675 ton/CY +	15% absorbent =	419.2 tons	1 CY = 1,350# (0.675 ton) @ 50# per CF for "loose" mat'l	
Laborer	41.9	hours	\$39.00	\$1,635	\$0	419.2 tons @	40 tons/hr @	10.5 hours @	4 units/crew =	41.9 hours	loaded labor rate: 2011 3rd party quote	
Equipment Operator (Medium)	21.0	hours	\$50.00	\$1,048	\$0	419.2 tons @	40 tons/hr @	10.5 hours @	2 units/crew =	21.0 hours	loaded labor rate: 2011 3rd party quote	
Backhoe (1 CY)	10.5	hours	\$19.18	\$201	\$0	419.2 tons @	40 tons/hr @	10.5 hours @	1 units/crew =	10.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)	
Loader (Small)	10.5	hours	\$14.39	\$151	\$0	419.2 tons @	40 tons/hr @	10.5 hours @	1 units/crew =	10.5 hours	RSM/HC p. 468 (line item 01 54 33 20 0410)	
Absorbent Additive	81.0	CY	\$38.70	\$3,135	\$0	18 rolloffs @	30 CY each @	15% additive =	81 CY		2004 DEC Rate adjusted for inflation	
Encapsulation Container	18.0	units	\$1,000.00	\$18,000	\$0	18.0 units					CWM 2011 costs	
Rolloff (30-CY) (not used)	0.0	units	\$19.02	\$0	\$0	0.0 units						
Subt - Stab'n/Encap'n - Macro Mat'l	419.2	tons @	\$57.66	\$24,169	\$0							
4.01.9 Transp Macro Encap Onsite						production rate = 0.5 hours for onsite travel						
Road Tractor (4 x 2, 30-ton)	9.0	hours	\$32.45	\$0	\$292	18 rolloffs @	1 rolloff/load =	18.0 loads @	0.5 hours/trip =	9.0 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)	
Driver	9.0	hours	\$45.00	\$0	\$405	18 rolloffs @	1 rolloff/load =	18.0 loads @	0.5 hours/trip =	9.0 hours	loaded labor rate: 2011 3rd party quote	
Rolloff (30-CY) (existing equip't)	0.0	hours	\$19.02	\$0	\$0							
Subtotal - Transp Macro Encap'n	18.0	ea @	\$0.00	\$0	\$697							
4.01.10 Offsite Macro Encap'n						assumes off-site land disposal; 18 macro-encap. Conts						
Offsite Transp'n - Encap Containers	6930.0	miles	\$3.25	\$22,523	\$0	18.0 contain @	1 cont/load =	18.0 loads @	385 miles/trip =	6930.0 miles	Rate: transporters quote	
Offsite Disposal - Encap Containers	540.0	CY	\$337.50	\$182,250	\$0	18.0 contain @	30 CY/cont =	540.0 CY			DEC 2004 Estimate accounting for inflation	
Subt - Offsite Landfill Disp/Solids				\$204,773	\$0							
(Subt: Assemblies 4.01.2 - 4.01.10)	109.0	tons @	\$5,904.16	\$643,553	\$65,780	onsite stabilization and off-site disposal of all Macro Room material						

Overall Site-Wide Closure Cost Estimate
20-Dec-13

NOTE: Sheet to be added.

4.01 Stabilization (revised)						Basis of Production and Quantities for In-house Estimate				In-house Pricing References	
Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Price - Offsite Disposal	2011 CWM Price - Onsite Disposal						
4.01.11 Load Drums: onsite L'fill						production rate = 80 drums/hour/person					
Laborer	3.8	hours	\$39.00	\$0	\$146	300 drums @	160 drums/hr =	1.9 hours @	2 units/crew =	3.8 hours	loaded labor rate: 2011 3rd party quote
Forklift	1.9	hours	\$22.21	\$0	\$42	300 drums @	160 drums/hr =	1.9 hours @	1 units/crew =	1.9 hours	DEC 2004 Estimate accounting for inflation
Flatbed Trailer (40-ton)	1.9	hours	\$6.26	\$0	\$12	300 drums @	160 drums/hr =	1.9 hours @	1 units/crew =	1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Shrd Drms to Onsite Landfill	160	CY @	\$0.00	\$0	\$200						
4.01.12 Transp Drms: onsite L'fill						assumes 0.5 hours per load to onsite landfill					
Road Tractor (4 x 2, 30-ton)	1.9	hours	\$32.45	\$0	\$61	300 drums @	80 drums/hr =	3.8 loads @	0.5 hours/load =	1.9 hours	loaded labor rate: 2011 3rd party quote
Driver	1.9	hours	\$45.00	\$0	\$84	300 drums @	80 drums/hr =	3.8 loads @	0.5 hours/load =	1.9 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	1.9	hours	\$6.26	\$0	\$12	300 drums @	80 drums/hr =	3.8 loads @	0.5 hours/load =	1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Shrd Drms to Onsite Landfill	80	CY @	\$0.00	\$0	\$157						
4.01.13 UnLoad Drums: onsite L'fill						production rate = 80 drums/hour/person					
Laborer	3.8	hours	\$39.00	\$0	\$146	300 drums @	160 drums/hr =	1.9 hours @	2 units/crew =	3.8 hours	loaded labor rate: 2011 3rd party quote
Forklift	1.9	hours	\$22.21	\$0	\$42	300 drums @	160 drums/hr =	1.9 hours @	1 units/crew =	1.9 hours	DEC 2004 Estimate accounting for inflation
Flatbed Trailer (40-ton)	1.9	hours	\$6.26	\$0	\$12	300 drums @	160 drums/hr =	1.9 hours @	1 units/crew =	1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Shrd Drms to Onsite Landfill	160	CY @	\$0.00	\$0	\$200						
4.01.14 Offsite Disp Drums						assumes off-site land disposal; volume based on 4 drums/CY (+ drum contents)					
Offsite Transp'n - Shrd'd Drum Mat'l	1443.8	miles	\$3.50	\$5,053		300 drums @	80 drums/load =	3.8 loads @	385 miles/trip =	1443.8 miles	Rate: transporters quote
Offsite Disposal - Shrd'd Drum Mat'l	300.0	drums	\$100.00	\$30,000		300 drums					HWC/ETC 2004 & CWM 2011 industry pricing
Subt - Offsite L/F Disp: Shr'd Drums				\$35,053							
(Subt: Assems 4.01.11 - 4.01.14)	300	CY @	\$116.84	\$35,053	\$556	off-site disposal of 300 drums with contents from drum shred area					
4.01.15 Offsite T&D - Tankers						five 5,500-gal existing tankers loaded and parked at stabilization parking area					
Offsite Transp'n - 5.5K-gal Tankers	24464.0	miles	\$3.50	\$85,624	\$85,624	16 tankers @	1529 miles/load =			24464.0 miles	Rate: transporters quote
Off-site Disp - Incin Bulk PCB Liqs	88000.0	gallons	\$4.68	\$411,840	\$411,840	16 tankers @	5500 gals/tankr =			88000.0 gals	HWC/ETC 2004 & CWM 2011 industry pricing
Subt - Offsite T&D - Tankers				\$497,464	\$497,464						
(Subt: Assemblies 4.01.15)	88000	gals @	\$5.65	\$497,464	\$497,464	offsite transportation and disposal of 16 five-thousand gallon tankers from stabilization area					

Overall Site-Wide Closure Cost Estimate
20-Dec-13

NOTE: Sheet to be added.

4.01 Stabilization (revised)				2011 CWM	2011 CWM	Basis of Production and Quantities for In-house Estimate				In-house Pricing References	
Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	Price - Offsite Disposal	Price - Onsite Disposal						
4.01.16 Decon Equipment						prod'n rate = 52.5 SF/hr (1/2 of RSM/UP p. 9-167, 33-17-0813, as wash & rinse are combined)					
Reagent Silo/Hopper	19.0	hours	\$121.50	\$2,314	\$2,314	2 units @	500 SF each =	1000.0 SF @	52.5 SF/hour =	19.0 hours	assume two units @ 500 SF each
Control Room	19.0	hours	\$121.50	\$2,314	\$2,314	1 units @	1000 SF each =	1000.0 SF @	52.5 SF/hour =	19.0 hours	assume 20' x 10' x 10' (L x W x H)
Air Compressor/Ancillary Equip't	1.9	hours	\$121.50	\$231	\$231	1 units @	100 SF each =	100.0 SF @	52.5 SF/hour =	1.9 hours	assume 100 SF
Hydraulic Skid/Ancillary Equip't	14.3	hours	\$121.50	\$1,736	\$1,736	1 units @	750 SF each =	750.0 SF @	52.5 SF/hour =	14.3 hours	assume 750 SF
Drum Shredder	0.0	hours	\$121.50	\$0	\$0	Drum Shredder closed					
Knuckle Boom	9.5	hours	\$121.50	\$1,157	\$1,157	1 units @	500 SF each =	500.0 SF @	52.5 SF/hour =	9.5 hours	assume 500 SF
Backhoe	1.9	hours	\$121.50	\$231	\$231	1 units @	100 SF each =	100.0 SF @	52.5 SF/hour =	1.9 hours	assume 100 SF
Subt - Decon Equip't (wash & rinse)	3450.0	SF	\$2.31	\$7,984	\$7,984	7 units		3450.0 SF total			<i>rsm/up price = \$1.86/SF (wash & rinse)</i>
4.01.17 Decon Water Samp/Dispose						production rate = 0.5 hours/sample for two techs; facility treatment unit price = \$0.0273/gallon					
Technician	7.7	hours	\$38.00	\$293	\$293	7.7 samp @	0.5 hr/samp =	3.9 hours @	2 units/crew	7.7 hours	technician rate: 2011 3rd party quote
VOC Analysis (EPA 624)	7.7	samp	\$105.00	\$809	\$809	7.0 units @	1.1 samp/unit =	7.7 samples			analytical price: average of three quotes
Onsite Water Disposal	3150.0	gal	\$0.0313	\$99	\$99	3450.0 SF @	0.5 gal/sf/wa =	1725.0 gallons +	0.25 gal/sf/rinse =	862.5 gallons	facility o/s mild liq treat price; vol @ 0.5 gal/sf ('equip)
Subt - Decon Water Samp/Dispose	3150.0	gal	\$0.3809	\$1,200	\$1,200						
4.01.18 PCB Wipe Samples						production rate = 0.5 hours/sample for two techs; rate same as facility's					
Technician	7.7	hours	\$38.00	\$293	\$293	7.7 samp @	0.5 hr/samp =	3.9 hours @	2 units/crew	7.7 hours	technician rate: 2011 3rd party quote
Vol Org Analysis (SW 5035)	7.7	samp	\$83.33	\$642	\$642	7 units @	1.1 samp/unit =	7.7 samples			analytical price: average of three quotes
Subt - Wipe Samples	7.0	SF	\$133.46	\$934	\$934						
4.01.19 Dismant/Load Equipment						prod'n rate = 150 SF/hr (based upon removing one 20K-gal tank in 8 hrs: 1,225 SF div. by 8 = 153 sf)					
Laborer	46.0	hours	\$39.00	\$1,794	\$1,794	3450.0 SF @	150 SF/hour	23.0 hours	2 units/crew =	46.0 hours	loaded labor rate: 2011 3rd party quote
Welding Equipment (200 amp)	23.0	hours	\$4.90	\$113	\$113	3450 SF @	150 SF/hour	23.0 hours	1 units/crew =	23.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Yard Crane (25-ton)	23.0	hours	\$86.31	\$1,985	\$1,985	3450 SF @	150 SF/hour	23.0 hours	1 units/crew =	23.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Equipment Operator (Crane)	23.0	hours	\$50.00	\$1,150	\$1,150	3450 SF @	150 SF/hour	23.0 hours	1 units/crew =	23.0 hours	loaded labor rate: 2011 3rd party quote
Subt - Dismantle Equipment	3450.0	SF	\$1.46	\$5,042	\$5,042						
<i>(Subt: Assems 4.01.16 - 4.01.19)</i>				\$15,160	\$15,160	<i>decontaminating and dismantling Equipment</i>					

Overall Site-Wide Closure Cost Estimate
20-Dec-13

NOTE: Sheet to be added.

4.01 Stabilization (revised)						Basis of Production and Quantities for In-house Estimate				In-house Pricing References	
Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Price - Offsite Disposal	2011 CWM Price - Onsite Disposal						
4.01.20 Demo/Load/Trans Ducts						prod'n rates: 125 LF/hr (ductwork) = 7 days; four days/unit (baghouses) = 32 days; total = 39 days					
Dismantle/Cut/Load Ductwork	7040.0	LF	\$2.14	\$15,066	\$15,066	7040 LF @	3 SF/LF =	21120.0 SF @	0.021 CF/SF =	16.4 CY	2004 DEC rate adjusted for inflation
Dismantle/Cut/Load Baghouses	8.0	each	\$7,340.18	\$58,721	\$58,721	8 units @	2500 SF/unit =	20000.0 SF @	0.021 CF/SF =	15.6 CY	2001 rate adjusted for inflation
Subt - Dismantle Ducts/Baghouses				\$73,787	\$73,787						
4.01.21 Unload/Stabilize/Encaps.						production rate = 15 tons/hour = 120 tons/day; includes shredding and filling containers					
<i>PROCESS TONS (incl kiln dust)</i>	37.2	TONS	n/a			32.0 CY @	1.0125 ton/CY +	15% kiln dust =		37.2 tons	1 CY = 2,025# (1.0125 ton) @ 75# per CF
Laborer	5.0	hours	\$39.00	\$194	\$194	37.2 tons @	15 tons/hr @	2.5 hours @	2 units/crew =	5.0 hours	loaded labor rate: 2011 3rd party quote
Equipment Operator (Medium)	7.4	hours	\$45.00	\$335	\$335	37.2 tons @	15 tons/hr @	2.5 hours @	3 units/crew =	7.4 hours	loaded labor rate: 2011 3rd party quote
Backhoe (1 CY)	2.5	hours	\$19.18	\$48	\$48	37.2 tons @	15 tons/hr @	2.5 hours @	1 units/crew =	2.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	2.5	hours	\$14.39	\$36	\$36	37.2 tons @	15 tons/hr @	2.5 hours @	1 units/crew =	2.5 hours	RSM/HC p. 468 (line item 01 54 33 20 0410)
Shredder	2.5	hours	\$329.70	\$819	\$819	37.2 tons @	15 tons/hr @	2.5 hours @	1 units/crew =	2.5 hours	2004 DEC Rate adjusted for inflation
Mixing Pit/Screening/Silo	2.5	hours	\$136.29	\$338	\$338	37.2 tons @	15 tons/hr @	2.5 hours @	1 units/crew =	2.5 hours	2004 DEC Rate adjusted for inflation
Cement Kiln Dust - Mat'l/Deliv Cost	4.9	tons	\$48.00	\$233	\$233	32.0 CY @	1.0125 ton/CY @	15% kiln dust =		4.9 tons	CWM 2011 costs
Encapsulation Containers	2.0	units	\$1,000.00	\$2,002	\$2,002	37.2 tons @	18.6 ton/unit =	2.0 containers			CWM 2011 costs
Rolloffs (30-CY)	5.0	hours	\$19.02	\$95	\$95	37.2 tons @	18.6 tons/unit =	2.0 rolloffs @	2.5 hours/rolloff =	5.0 hours	equip't price: dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate	37.2	tons	\$110.07	\$4,099	\$4,099					<i>no comparable rsm/up price available</i>	
4.01.22 Transp Ecaps: onsite L'fill						assumes 0.5 hours per load to onsite landfill					
Road Tractor (4 x 2, 30-ton)	1.0	hours	\$32.45	\$0	\$32	2 rolloffs @	1 rolloff/load =	2.0 loads @	0.5 hours/load =	1.0 hours	loaded labor rate: 2011 3rd party quote
Driver	1.0	hours	\$45.00	\$0	\$45	2 rolloffs @	1 rolloff/load =	2.0 loads @	0.5 hours/load =	1.0 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Rolloffs (30-CY)	0.0	hours	\$6.26	\$0	\$0						
Subt - Shrd Drms to Onsite Landfill	1	CY @	\$0.00	\$0	\$77						
4.01.23 Offsite Disp/Bghouse-Duct						assumes off-site disposal; 2 macro-encap cont.; stabilized/encap. Baghouse debris					
Offsite Transp - Baghouse/Duct	770.8	miles	\$3.25	\$2,505	\$0	37.2 tons @	18.6 tons/load =	2.0 loads @	385 miles/trip =	770.8 miles	Rate: transporters quote
Offsite Disp'l - Baghouse/Duct Deb	36.8	CY	\$337.50	\$12,413	\$0	37.2 tons @	1.013 tons/CY =	36.8 CY @	27 CF/CY =	993.0 CF	HWC/ETC 2004 & CWM 2011 industry pricing
Subt - Offsite B'house/Duct Disp'l				\$14,918	\$0						
<i>(Subt: Assems 4.01.20 - 4.01.23)</i>				\$92,804	\$77,963	<i>demolition, stabilization, encapsulation, and off-site disposal of ductwork and baghouses</i>					
4.01.24 Decon Stab'n Areas (wash)						production rate = 105 SF/hr for 1-person crew					
Laborer	765.4	hours	\$39.00	\$29,849	\$29,849	80364 SF @	105 SF/hr =	765.4 hours @	1 units/crew =	765.4 hours	loaded labor rate: 2011 3rd party quote
Pressure Washer (3,500 psi)	408.1	hours	\$4.04	\$1,649	\$1,649	42849 SF @	105 SF/hr =	408.1 hours @	1 units/crew =	408.1 hours	wall equip't price: RSM/HC p.471 (01 54 33 40 5450)
Wet Vac	357.3	hours	\$22.94	\$8,196	\$8,196	37515 SF @	105 SF/hr =	357.3 hours @	1 units/crew =	357.3 hours	floor equip't price: RSM/HC p.473 (01 54 33 40 7800)
Subt - Decon Stab'n Areas (wash)	80364.0	SF	\$0.49	\$39,694	\$39,694	New Area: Floor = 35' x 375' = 13,125sf; Walls = 3' x 375' + 2 x 0.5 x 3' x 35' = 1230sf					

Overall Site-Wide Closure Cost Estimate
20-Dec-13

NOTE: Sheet to be added.

4.01 Stabilization (revised)											
Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Price - Offsite Disposal	2011 CWM Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate				In-house Pricing References	
4.01.25 Decon Stab'n Areas (rinse)						production rate = 105 SF/hr for 1-person crew					
Laborer	357.3	hours	\$39.00	\$13,934	\$13,934	37515 SF @	105 SF/hr =	357.3 hours @	1 units/crew =	357.3 hours	loaded labor rate: 2011 3rd party quote
Pressure Washer (3,500 psi)	0.0	hours	\$4.04	\$0	\$0						wall equip't price: RSM/HC p.471 (01 54 33 40 5450)
Wet Vac	357.3	hours	\$22.94	\$8,196	\$8,196	37515 SF @	105 SF/hr =	357.3 hours @	1 units/crew =	357.3 hours	floor equip't price: RSM/HC p.473 (01 54 33 40 7800)
Subt - Decon Stab'n Areas (rinse)				\$22,130	\$22,130						
4.01.26 Decon Water Samp/Disp						production rate = 0.5 hours/sample for two techs;					
Technician	14.3	hours	\$38.00	\$543	\$543	14.3 samp @	0.5 hr/samp =	7.2 hours @	2 units/crew	14.3 hours	technician rate: 2011 3rd party quote
VOC Analysis (EPA 624)	14.3	samp	\$105.00	\$1,502	\$1,502	13.0 areas @	1.1 samp/area =	14.3 samples			analytical price: average of three quotes
On-site Water Disposal (wash)	21424.5	gal	\$0.0313	\$671	\$671	42849 SF @	0.5 gal/sf/wa =	21425 gallons			wash water treat price: 0.5 gal/sf
On-site Water Disposal (rinse)	3751.5	gal	\$0.0313	\$117	\$117	75030 SF @	0.05 gal/sf/wa =	3752 gallons			rinse water treat price: 0.05 gal/sf
Subt - Decon Water Samp/Dispose				\$2,715	\$2,715						
4.01.27 PCB Wipe & Destruc Samp						production rate = 0.5 hours/sample for two techs; rate same as facility's					
Technician	96.4	hours	\$38.00	\$3,663	\$3,663	96.4 samp @	0.5 hr/samp =	48.2 hours @	2 units/crew	96.4 hours	technician rate: 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	2.0	samp	\$446.67	\$893	\$893	2.0 areas @	1 samp/area =	2.0 samples			analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	96.4	samp	\$83.33	\$8,034	\$8,034	60254 SF @	625 SF/samp =	96.4 samples			analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$12,590	\$12,590	New Area: Floor = 35' x 375' = 13,125sf					
(Subt: Assems 4.01.24 - 4.01.27)				\$77,130	\$77,130	decontamination & sampling of floors, sumps, and pits					
4.01.28 PPE Usage & H&S Plan						Level C @ 75%; Level D @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs					
PPE Usage - Level D	49.7	days	\$9.00	\$448	\$448	1591.4 hours @	8 hr/day =	198.9 days @	25% "D" days =	49.7 days	25% of non-supv hrs in Level D (used facility price: \$9/day)
PPE Usage - Level C	149.2	days	\$25.00	\$3,730	\$3,730	1591.4 hours @	8 hr/day =	198.9 days @	75% "C" days =	149.2 days	75% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	39.8	hours	\$75.00	\$2,984	\$2,984	1591.4 hours @	2.5% hr/hr =	39.8 hours			Safety Eng. Rate: 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$7,161	\$7,161						
4.01.29 Supervision						5 weeks for closure of Stabilizatio					
Foreman	200.0	hours	\$65.00	\$13,000	\$13,000	5.0 weeks @	40 hrs/week =	200.0 hours			outside foreman rate: 2011 price quote
Site Project Manager	0.0	hours	\$0.00	\$0	\$0	Included in General Con't indirect costs					
Subtotal - Supervision				\$13,000	\$13,000						

Overall Site-Wide Closure Cost Estimate
20-Dec-13

NOTE: Sheet to be added.

4.01 Stabilization (revised)				
Total Cost Summary				
Cost Category	Percent of Direct Cost		2011 Cost Offsite Disposal	Cost Range
Direct Costs/Basic Disposal			\$1,387,113	
Plus Indirect Costs/Profit:				
Site Activity Management Costs	7.00%		\$97,098	DEC 7%
Gen'l Contractor G&A/Home Office	4.00%		\$55,485	DEC 4%
Pre-Construction Design Costs	6.00%		\$83,227	DEC 6%
Engineering During Construction	2.00%		\$27,742	DEC 2%
General Contractor Profit	6.00%		\$83,227	DEC 6%
Indirect Costs/Basic Disposal	25.00%		\$346,778	
Subtotal - Stabilization Activity			\$1,733,891	
Plus Contingency	10.00%		\$173,389	
Total - Stabilization (revised)			\$1,907,280	

5.01 AWTS/CSAs 24/25/26

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.01.1 Inventory Verification					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	2.6	hours	\$39.00	\$101	128 drums @ 100 drums/hr = 1.3 hours @ 2 units/crew = 2.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Laborer	1.0	hours	\$39.00	\$39	2 tankers @ 0.25 hr/tanker = 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Laborer	0.5	hours	\$39.00	\$20	1 rolloffs @ 0.25 hr/rolloff = 0.3 hours @ 2 units/crew = 0.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification (Subt: Assemb 5.01.1 - 5.01.1)				\$160	conducting inventory of CSAs 24/25/26	(note: labor rate is a composite of "common bldg laborer"
5.01.2 Empty 2 Tankers					included in operation of AWT Assembly 13.0; two tankers parked at CSA 25 = 12,000 gals	
Laborer	0.0	hours	\$39.00	\$0	12000 gals @ 1650 gals/hr = 7.3 hours @ 2 units/crew = 14.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	12000 gals @ 1650 gals/hr = 7.3 hours @ 1 units/crew = 7.3 hours	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (2 @ 6K-gals)	0.0	hours	\$6.31	\$0	12000 gals @ 1650 gals/hr = 7.3 hours @ 1 units/crew = 7.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty 2 Tankers' Contents				\$0		
5.01.3 O/S Aqueous Treat:Tankers					Aqueous gate receipts cost to treat not including labor and maintenance	
Onsite Aqu Treat - Tankers	12000.0	gallons	\$0.1526	\$1,831	12000 gallons	AWTS Treatments costs "Other" = Gate receipts
Subt - O/S Aqu Trt - Tankers				\$1,831	onsite treatment of liquid wastes from two tankers	
5.01.4 Empty 128 Drums					included in operation of AWT Assembly 13.0; two tankers parked at CSA 25 = 12,000 gals	
Laborer	0.0	hours	\$39.00	\$0	128 drums @ 12 drums/hr = 10.7 hours @ 2 units/crew = 21.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$71.47	\$0	128 drums @ 12 drums/hr = 10.7 hours @ 1 units/crew = 10.7 hours	RSM/UP p. 9-171 (line item 33-19-0108)
Decon Drums	0.0	drum	\$0.00	\$0	128 drums @ 55 gals/drum = 7040.0 gals	
Subt - Empty 128 Drums' Contents				\$0		
5.01.5 O/S Aqueous Treat: Drums					Aqueous gate receipts cost to treat not including labor and maintenance	
Onsite Aqu Treat - Tankers/Drums	7040.0	gallons	\$0.1526	\$1,074	7040 gallons	AWTS Treatments costs "Other" = Gate receipts
Subt - O/S Aqu Trt - Tankers/Drums				\$1,074		
(Subt: Assemb 5.01.2 - 5.01.5)				\$2,906	onsite treatment of liquid wastes from 128 drums	
5.01.6 Offsite T&D/FiltPressSolids					32,000 Lbs (16 tons) of Filter Press Solids contained in 30-CY Rolloff parked at CSA 26	
Transportation	1529.0	hours	\$3.25	\$4,969	16.0 tons @ 16 tons/load = 1.0 loads @ 1529 miles/trip = 1529.0 miles	Rate: transporters quote/site experience
Disposal	32000.0	Lb	\$0.64	\$20,480	32000.0 Lbs	Current CWM 2011 third party rate
Subt - O/S T&D/Filter Press Solids				\$25,449		
(Subt: Assemb 5.01.6 - 5.01.6)				\$25,449	offsite transportation and disposal of 32,000 Lbs of filter press solids	
5.01.7 Load Empty Aqueos Drums					production rate = 80 drums/hour (double the rate of full drums @ RSM/UP p. 9-171,	
Laborer	1.6	hours	\$39.00	\$62	128 drums @ 80 drums/hr = 1.6 hours @ 1 units/crew = 1.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	1.6	hours	\$22.21	\$36	128 drums @ 80 drums/hr = 1.6 hours @ 1 units/crew = 1.6 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	1.6	hours	\$6.26	\$10	128 drums @ 80 drums/hr = 1.6 hours @ 1 units/crew = 1.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Empty Drums				\$108		

5.01 AWTS/CSAs 24/25/26

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.01.8 Transp Drms to Onsite Shrd					production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	0.8	hours	\$32.45	\$26	128 drums @ 80 drum/load = 1.6 loads @ 0.5 hours/trip = 0.8 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.8	hours	\$45.00	\$36	128 drums @ 80 drum/load = 1.6 loads @ 0.5 hours/trip = 0.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	0.8	hours	\$6.26	\$5	128 drums @ 80 drum/load = 1.6 loads @ 0.5 hours/trip = 0.8 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp to Onsite Shredder				\$67		
5.01.9 Unload Empty Drums					production rate = 80 drums/hour	
Laborer	1.6	hours	\$39.00	\$62	128 drums @ 80 drums/hr = 1.6 hours @ 1 units/crew = 1.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	1.6	hours	\$22.21	\$36	128 drums @ 80 drums/hr = 1.6 hours @ 1 units/crew = 1.6 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	1.6	hours	\$6.26	\$10	128 drums @ 80 drums/hr = 1.6 hours @ 1 units/crew = 1.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Empty Drums				\$108		
5.01.10 Onsite Drum Shredding					prod'n = 80 drums/hour	
Laborer	3.2	hours	\$39.00	\$125	128 drums @ 80 drums/hr = 1.6 hours @ 2 units/crew = 3.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Shredder	1.6	hours	\$328.75	\$526	128 drums @ 80 drums/hr = 1.6 hours @ 1 units/crew = 1.6 hours	2004 DEC Rate * Implicit Deflator
Rolloff (30-CY)	1.6	hours	\$19.02	\$30	128 drums @ 80 drums/hr = 1.6 hours @ 1 units/crew = 1.6 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Onsite Drum Shredding				\$681		
5.01.11 Trans Shrd Drms: onsite L'fil					Not Applicable: assumes off-site land disposal	
Road Tractor (4 x 2, 30-ton)	0.0	hours	\$32.45	\$0		RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0		loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY)	0.0	hours	\$19.02	\$0		dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Transp Shrd mat'l to Landfill				\$0		
5.01.12 Unload Shred. Drum Debris					Not Applicable: assumes off-site land disposal	
Laborer	0.0	hours	\$39.00	\$0		loaded labor rate: loaded labor rate 2011 3rd party quote
Loader (small)	0.0	hours	\$2.12	\$0		RSM/HC p. 468 (line item 01 54 33 20 3860)
Rolloff (30-CY)	0.0	hours	\$19.02	\$0		dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Unload Shrd'd Mat'l at Landfill				\$0		
5.01.13 Offsite Disp/Shrd'd Drums					assumes off-site land disposal of shredded drums; 20 tons/load	
Offsite Transportation	5.0	miles	\$3.25	\$16	1.3 tons @ 20 tons/load = 0.1 loads @ 5 miles/trip = 5 miles	Rate: transporters quote/site experience
Offsite Disposal - Landfill	1.3	tons	\$35.00	\$46	128 drums @ 20 lbs/drum = 1.3 tons @ 1 tons/CY = 1.3 CY	Modern Disposal/Site Experience
Subt - Offsite Shrd'd Drums Disp'l (Subt: Assems. 5.01.7 thru 5.01.13)				\$62		
				\$1,026	onsite drum shredding and off-site disposal	
5.01.14 Decon CSA Areas (wash)					production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	40.0	hours	\$39.00	\$1,560	4200 SF @ 105 SF/hr = 40.0 hours @ 1 unit/crew = 40.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	40.0	hours	\$4.04	\$162	4200 SF @ 105 SF/hr = 40.0 hours @ 1 unit/crew = 40.0 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	40.0	hours	\$0.83	\$33	4200 SF @ 105 SF/hr = 40.0 hours @ 1 unit/crew = 40.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA Areas (wash)				\$1,755		

5.01 AWTS/CSAs 24/25/26

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.01.15 Decon CSA Areas (rinse)					production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	40.0	hours	\$39.00	\$1,560	4200 SF @ 105 SF/hr = 40.0 hours @ 1 unit/crew = 40.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	40.0	hours	\$4.04	\$162	4200 SF @ 105 SF/hr = 40.0 hours @ 1 unit/crew = 40.0 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	40.0	hours	\$0.83	\$33	4200 SF @ 105 SF/hr = 40.0 hours @ 1 unit/crew = 40.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA Areas (rinse)				\$1,755		
5.01.16 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs;	
Technician	3.3	hours	\$38.00	\$125	3.3 samp @ 0.5 hr/samp = 1.7 hours @ 2 pers/crew = 3.3 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	3.3	samp	\$105.00	\$347	3.0 areas @ 1.1 samp/area = 3.3 samples	analytical price: average of three quotes
On-site Water Disposal	2000.0	gal	\$0.0313	\$63	4000 SF @ 0.5 gal/sf/wa = 2000.0 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$535		
5.01.17 PCB Wipe Samples					TCLP analyses not necessary according to site-wide closure plan	
Technician	9.8	hours	\$38.00	\$372	9.7 samp @ 0.5 hr/samp = 4.9 hours @ 2 pers/crew = 9.8 hours	technician rate: rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0	3.0 areas @ 1.1 samp/area = 3.3 samples	analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	6.4	samp	\$83.33	\$533	4000 SF @ 625 SF/samp = 6.4 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemb 5.01.14 - 5.01.17)				\$906 \$4,950	decontamination & sampling of CSA 24/25/26	

Total Non-Super Labor Hours 104.4

5.01.18 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	104.4 hours @ 8 hr/day = 13.1 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	3.3	days	\$9.00	\$30	104.4 hours @ 8 hr/day = 13.1 days @ 25% "Mod C" days = 3.3 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	9.8	days	\$25.00	\$245	104.4 hours @ 8 hr/day = 13.1 days @ 75% "C" days = 9.8 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	2.6	hours	\$75.00	\$195	104.4 hours @ 2.5 hr/hr = 2.6 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$470		
5.01.19 Supervision					1 day for closure of AWTS CSA 24/25/26	
Foreman	8.0	hours	\$65.00	\$520	1 day @ 8 hrs/day = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520		
5.01.20 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	1.6	hours	\$130.00	\$208	104.4 hours @ 0.015 hr/hr = 1.6 hours	Engineer rate: 2011 3rd party quote
Clerical	1.6	hours	\$45.00	\$72	104.4 hours @ 0.015 hr/hr = 1.6 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification (Subt: Assemb 5.01.18 - 5.01.20)				\$280 \$1,270		

5.01 AWTS/CSAs 24/25/26	Direct Cost	Total	Basic	\$35,760
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5.01 AWTS/CSAs 24/25/26			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Cost/Basic Disposal		\$35,760	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$2,503	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$1,430	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$2,146	note: DEC uses 6%
Engineering During Construction	2.00%	\$715	note: DEC uses 2%
General Contractor Profit	6.00%	\$2,146	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$8,940	
Subtotal - AWTS/CSAs 24/25/26		\$44,700	
Plus Contingency	10.00%	\$4,470	CWM and DEC 10%
Total - AWTS/CSAs 24/25/26		\$49,170	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.02 CSA 30 (T-130 Unload Area)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.02.1 Inventory Verification						
					prod'n rate: 15 min/tanker; two persons required	
Laborer	0.5	hours	\$39.00	\$20	1 tankers @ 0.25 hr/tanker = 0.25 hours @ 2 units/crew = 0.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$20		
(Subt: Assemb 5.02.1 - 5.02.1)				\$20	conducting inventory of CSA 30 (1 Tanker) SLF 1-6 leachate	
5.02.2 Transport Tanker Onsite						
					included in operation of AWT Assembly 13.0	
Road Tractor (4 x 2, 30-ton)	0.0	hours	\$32.45	\$0	1.0 tanker @ 1 tankr/load = 1.0 loads @ 0.5 hours/trip = 0.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	1.0 CY @ 1 CY/load = 1.0 loads @ 0.5 hours/trip = 0.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.0	hours	\$6.31	\$0	1.0 CY @ 1 CY/load = 1.0 loads @ 0.5 hours/trip = 0.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transport Tanker Onsite				\$0		
5.02.3 Empty One (1) Tanker						
					included in operation of AWT Assembly 13.0; one tanker parked at CSA 30 = 5,500 gals	
Laborer	0.0	hours	\$39.00	\$0	5500 gals @ 1650 gals/hr = 3.3 hours @ 2 units/crew 6.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	included in tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.0	hours	\$6.31	\$0	5500 gals @ 1650 gals/hr = 3.3 hours @ 1 units/crew 3.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty 1 Tankers' Contents				\$0		
5.02.4 Onsite Aqu Trt: Tankers						
					SLF 1-6 liquid waste	
Onsite Aqu Treat - Tankers	5500	gallons	\$1.8244	\$10,034	5500 gallons	AWTS treatment costs @ \$1.7836
Subt - Onsite Aqu Trt - Tankers				\$10,034		
(Subt: Assemb 5.02.2 - 5.02.4)				\$10,034	onsite treatment of liquid wastes from one (1) tanker	
5.02.5 Decon CSA 30 Area (wash)						
					production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	6.8	hours	\$39.00	\$265	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	6.8	hours	\$4.04	\$27	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	6.8	hours	\$0.83	\$6	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 30 Area (wash)				\$298		
5.02.6 Decon CSA 30 Area (rinse)						
					production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	6.8	hours	\$39.00	\$265	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	6.8	hours	\$4.04	\$27	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	6.8	hours	\$0.83	\$6	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 30 Area (rinse)				\$298		
5.02.7 Decon Water Samp/Disp						
					prod'n rate = 0.5 hours/sample for two techs; one sample area;	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	357.5	gal	\$0.0313	\$11	715 SF @ 0.5 gal/sf/wa = 357.5 gallons	site waters waste treat price ; vol @ 0.5 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$168		

5.02 CSA 30 (T-130 Unload Area)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.02.8 PCB Wipe Samples						
					No TCLP analyses necessary according to site-wide closure plan	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.55 hours @ 2 pers/crew = 1.1 hours	technician rate: rate 2011 3rd party quote
TCLP VOC & Metals Analysis		samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8080)	1.1	samp	\$83.33	\$92	715 SF @ 625 SF/samp = 1.1 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$133		
(Subt: Assemb 5.02.5 - 5.02.8)				\$899	decontamination & sampling of CSA 30	

Total Non-Super Labor Hours 16.3

5.02.9 PPE Usage/H&S Planning						
					Level C @ 75%; Mod Level C @ 25%; Level D @ 0% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	16.3 hours @ 8 hr/day = 2.0 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	0.5	days	\$9.00	\$5	16.3 hours @ 8 hr/day = 2.0 days @ 25% "D" days = 0.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	1.5	days	\$25.00	\$38	16.3 hours @ 8 hr/day = 2.0 days @ 75% "C" days = 1.5 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.4	hours	\$75.00	\$30	16.3 hours @ 2.5 hr/hr = 0.4 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$72		
5.02.10 Supervision						
					0.5 day for closure of CSA 30	
Foreman	4	hours	\$65.00	\$260	1 day @ 4 hrs/day = 4.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$260		
5.02.11 Certification						
					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.3	hours	\$130.00	\$39	16.3 hours @ 0.015 hr/hr = 0.3 hours	Engineer rate: 2011 3rd party quote
Clerical	0.3	hours	\$45.00	\$14	16.3 hours @ 0.015 hr/hr = 0.3 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$53		
(Subt: Assemb 5.02.9 - 5.02.11)				\$385		

5.02 CSA 30 (T-130 Unload Area)	Direct Cost	Total	Basic	\$11,337
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5.02 CSA 30 (T-130 Unload Area)			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$11,337	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$794	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$453	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$680	note: DEC uses 6%
Engineering During Construction	2.00%	\$227	note: DEC uses 2%
General Contractor Profit	6.00%	\$680	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$2,834	
Subtotal - CSA 30 (T-130 Unload)		\$14,171	
Plus Contingency	10.00%	\$1,417	CWM and DEC 10%
Total - CSA 30 (T-130 Unload)		\$15,588	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.03 CSA 31 (T-108 Unload Area)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.03.1 Inventory Verification						
					prod'n rate: 15 min/tanker; two persons required	
Laborer	0.5	hours	\$39.00	\$20	1 tankers @ 0.25 hr/tanker = 0.25 hours @ 2 units/crew = 0.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$20		
(Subt: Assemb 5.03.1 - 5.03.1)				\$20	conducting inventory of CSA 31 (1 Tanker) SLF-7 and SLF-11 leachate	
5.03.2 Transport Tanker Onsite						
					included in operation of AWT Assembly 13.0	
Road Tractor (4 x 2, 30-ton)	0	hours	\$32.45	\$0	1.0 tanker @ 1 tankr/load = 1.0 loads @ 0.5 hours/trip = 0.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0	hours	\$45.00	\$0	1.0 CY @ 1 CY/load = 1.0 loads @ 0.5 hours/trip = 0.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0	hours	\$6.31	\$0	1.0 CY @ 1 CY/load = 1.0 loads @ 0.5 hours/trip = 0.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transport Tanker Onsite				\$0		
5.03.3 Empty One (1) Tanker						
					included in operation of AWT Assembly 13.0; one tanker parked at CSA 31 = 5,500 gals	
Laborer	0	hours	\$39.00	\$0	5500 gals @ 1650 gals/hr = 3.3 hours @ 2 units/crew 6.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0	hours	\$0.00	\$0	included in tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0	hours	\$6.31	\$0	5500 gals @ 1650 gals/hr = 3.3 hours @ 1 units/crew 3.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty 1 Tankers' Contents				\$0		
5.03.4 Onsite Aqu Trt: Tankers						
					mildly-contaminated liquid waste	
Onsite Aqu Treat - Tankers (SLF-7 leachate)	1375	gallons	\$0.2195	\$302	5500 gallons @ 25% from SLF-7 = 1375	AWTS treatment costs @ \$0.2201
Onsite Aqu Treat - Tankers (SLF-11 leachate)	4125	gallons	\$0.3532	\$1,457	5500 gallons @ 75% from SLF-11 = 4125	AWTS treatment costs @ \$0.3539
Subt - Onsite Aqu Trt - Tankers				\$1,759		
(Subt: Assemb 5.03.2 - 5.03.4)				\$1,759	onsite treatment of liquid wastes from one (1) tanker	
5.03.5 Decon CSA 31 Area (wash)						
					production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	6.8	hours	\$39.00	\$265	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	6.8	hours	\$4.04	\$27	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	6.8	hours	\$0.83	\$6	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 31 Area (wash)				\$298		
5.03.6 Decon CSA 31 Area (rinse)						
					production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	6.8	hours	\$39.00	\$265	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	6.8	hours	\$4.04	\$27	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	6.8	hours	\$0.83	\$6	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 31 Area (rinse)				\$298		
5.03.7 Decon Water Samp/Disp						
					prod'n rate = 0.5 hours/sample for two techs; one sample area;	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	357.5	gal	\$0.0313	\$11	715 SF @ 0.5 gal/sf/wa = 357.5 gallons	site waters waste treat price ; vol @ 0.5 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$168		

5.03 CSA 31 (T-108 Unload Area)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.03.8 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.55 hours @ 2 pers/crew = 1.1 hours	technician rate: rate 2011 3rd party quote
TCLP VOC & Metals Analysis		samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8080)	1.1	samp	\$83.33	\$92	715 SF @ 625 SF/samp = 1.1 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$133		
<i>(Subt: Assemb 5.03.5 - 5.03.8)</i>				\$899	<i>decontamination & sampling of CSA 31</i>	
5.03.9 PPE Usage/H&S Planning					Level C @ 75%; Level D @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	16.3 hours @ 8 hr/day = 2.0 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	0.5	days	\$9.00	\$5	16.3 hours @ 8 hr/day = 2.0 days @ 25% "D" days = 0.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	1.5	days	\$25.00	\$38	16.3 hours @ 8 hr/day = 2.0 days @ 75% "C" days = 1.5 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.4	hours	\$75.00	\$30	16.3 hours @ 2.5% hr/hr = 0.4 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$72		
5.03.10 Supervision					0.5 day for closure of CSA 31	
Foreman	4	hours	\$65.00	\$260	1 day @ 4 hrs/day = 4.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$260		
5.03.11 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.3	hours	\$130.00	\$39	16.3 hours @ 0.015 hr/hr = 0.3 hours	Engineer rate: 2011 3rd party quote
Clerical	0.3	hours	\$45.00	\$14	16.3 hours @ 0.015 hr/hr = 0.3 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$53		
<i>(Subt: Assemb 5.03.9 - 5.03.11)</i>				\$385		
5.03 CSA 31 (T-108 Unload Area)	Direct Cost	Total	Basic	\$3,061		

5.03 CSA 31 (T-108 Unload Area)			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$3,061	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$214	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$122	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$184	note: DEC uses 6%
Engineering During Construction	2.00%	\$61	note: DEC uses 2%
General Contractor Profit	6.00%	\$184	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$765	
Subtotal - CSA 31 (T-108 Unload)		\$3,827	
Plus Contingency	10.00%	\$383	CWM and DEC 10%
Total - CSA 31 (T-108 Unload)		\$4,209	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.04 CSA 32 (T-109 Unload Area)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.04.1 Inventory Verification						
Laborer	0.5	hours	\$39.00	\$20	prod'n rate: 15 min/tanker; two persons required 1 tankers @ 0.25 hr/tanker = 0.25 hours @ 2 units/crew = 0.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification (Subt: Assemb 5.04.1 - 5.04.1)				\$20	conducting inventory of CSA 32 (1 Tanker) SLF-10	
5.04.2 Transport Tanker Onsite						
Road Tractor (4 x 2, 30-ton)	0	hours	\$32.45	\$0	production rate = 0.5 hours for on-site travel; one 5,500-gal tanker 1.0 tanker @ 1 tankr/load = 1.0 loads @ 0.5 hours/trip = 0.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0	hours	\$45.00	\$0	1.0 CY @ 1 CY/load = 1.0 loads @ 0.5 hours/trip = 0.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0	hours	\$6.31	\$0	1.0 CY @ 1 CY/load = 1.0 loads @ 0.5 hours/trip = 0.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transport Tanker Onsite				\$0		
5.04.3 Empty One (1) Tanker						
Laborer	0	hours	\$39.00	\$0	included in operation of AWT Assembly 13.0; one tanker parked at CSA 32 = 5,500 gals 5500 gals @ 1650 gals/hr = 3.3 hours @ 2 units/crew = 6.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0	hours	\$0.00	\$0	included in tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0	hours	\$6.31	\$0	5500 gals @ 1650 gals/hr = 3.3 hours @ 1 units/crew = 3.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty 1 Tankers' Contents				\$0		
5.04.4 Onsite Aqu Trt: Tankers						
Onsite Aqu Treat - Tankers	5500	gallons	\$0.2201	\$1,211	mildly-contaminated liquid waste 5500 gallons	AWTS treatment costs @ \$0.2201
Subt - Onsite Aqu Trt - Tankers (Subt: Assemb 5.04.2 - 5.04.4)				\$1,211	onsite treatment of liquid wastes from one (1) tanker	
5.04.5 Decon CSA 32 Area (wash)						
Laborer	6.8	hours	\$39.00	\$265	production rate = 105 SF/hr for 1-person crew w/ one units; facility experience 715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	6.8	hours	\$4.04	\$27	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	6.8	hours	\$0.83	\$6	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 32 Area (wash)				\$298		
5.04.6 Decon CSA 32 Area (rinse)						
Laborer	6.8	hours	\$39.00	\$265	production rate = 105 SF/hr for 1-person crew w/ one units; facility experience 715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	6.8	hours	\$4.04	\$27	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	6.8	hours	\$0.83	\$6	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 32 Area (rinse)				\$298		
5.04.7 Decon Water Samp/Disp						
Technician	1.1	hours	\$38.00	\$42	prod'n rate = 0.5 hours/sample for two techs; one sample area; 1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	357.5	gal	\$0.0313	\$11	715 SF @ 0.5 gal/sf/wa = 357.5 gallons	site waters waste treat price ; vol @ 0.5 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$168		
5.04.8 PCB Wipe Samples						
Technician	1.1	hours	\$38.00	\$42	No TCLP analyses necessary according to site-wide closure plan 1.1 samp @ 0.5 hr/samp = 0.55 hours @ 2 pers/crew = 1.1 hours	technician rate: rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)		samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	1.1	samp	\$83.33	\$92	715 SF @ 625 SF/samp = 1.1 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemb 5.04.5 - 5.04.8)				\$133	decontamination & sampling of CSA 32	

5.04 CSA 32 (T-109 Unload Area)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.04.9 PPE Usage/H&S Planning					Level C @ 75%; Level D @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	16.3 hours @ 8 hr/day = 2.0 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	0.5	days	\$9.00	\$5	16.3 hours @ 8 hr/day = 2.0 days @ 25% "D" days = 0.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	1.5	days	\$25.00	\$38	16.3 hours @ 8 hr/day = 2.0 days @ 75% "C" days = 1.5 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.4	hours	\$75.00	\$30	16.3 hours @ 2.5% hr/hr = 0.4 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$72		
5.04.10 Supervision					0.5 day for closure of CSA 31	
Foreman	4	hours	\$65.00	\$260	1 day @ 4 hrs/day = 4.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$260		
5.04.11 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.3	hours	\$130.00	\$39	16.3 hours @ 0.015 hr/hr = 0.3 hours	Engineer rate: 2011 3rd party quote
Clerical	0.3	hours	\$45.00	\$14	16.3 hours @ 0.015 hr/hr = 0.3 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$53		
<i>(Subt: Assemb 5.04.9 - 5.04.11)</i>				\$385		

5.04 CSA 32 (T-109 Unload Area)	Direct Cost	Total	Basic	\$2,513
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5.04 CSA 32 (T-109 Unload Area)			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$2,513	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$176	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$101	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$151	note: DEC uses 6%
Engineering During Construction	2.00%	\$50	note: DEC uses 2%
General Contractor Profit	6.00%	\$151	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$628	
Subtotal - CSA 32 (T-109 Unload)		\$3,141	
Plus Contingency	10.00%	\$314	CWM and DEC 10%
Total - CSA 32 (T-109 Unload)		\$3,456	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)

"RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)

"RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.05 CSA 33 (T-158 Unload Area)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.05.1 Inventory Verification						
					prod'n rate: 15 min/tanker; two persons required	
Laborer	0.5	hours	\$39.00	\$20	1 tankers @ 0.25 hr/tanker = 0.25 hours @ 2 units/crew = 0.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$20		
(Subt: Assemb 5.05.1 - 5.05.1)				\$20	conducting inventory of CSA 33 (1 Tanker) Oil/water separator	
5.05.2 Transp T.O. Liquids Offsite						
					one tanker containing 5,500 gallons	
Transport in 5,500-gal tanker	1529	miles	\$3.50	\$5,352	5500 gals @ 5500 gals/tankr = 0.9 loads @ 1529 miles/trip = 1529 miles	Rate: transporters quote/site experience
Subt - Transport Tanker Offsite				\$5,352		
5.05.3 Offsite T.O. Liq's Disposal						
Disposal Cost - Liquids	5500	gallons	\$4.68	\$25,740	5500 gallons	HWC/ETC 2004 & Current third party rate
Subt - Offsite T.O. Liquids Disposal				\$25,740		
(Subt: Assemb 5.05.2 - 5.05.3)				\$31,092	offsite T&D of one (1) tanker	
5.05.4 Decon CSA 33 Area (wash)						
					production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	6.8	hours	\$39.00	\$265	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	6.8	hours	\$4.04	\$27	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	6.8	hours	\$0.83	\$6	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 33 Area (wash)				\$298		
5.05.5 Decon CSA 33 Area (rinse)						
					production rate = 105 SF/hr for 1-person crew w/ one units; facility experience	
Laborer	6.8	hours	\$39.00	\$265	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	6.8	hours	\$4.04	\$27	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	6.8	hours	\$0.83	\$6	715 SF @ 105 SF/hr = 6.8 hours @ 1 unit/crew = 6.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 33 Area (rinse)				\$298		
5.05.6 Decon Water Samp/Disp						
					prod'n rate = 0.5 hours/sample for two techs; one sample area;	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	357.5	gal	\$0.0313	\$11	715 SF @ 0.5 gal/sf/wa = 357.5 gallons	site waters waste treat price ; vol @ 0.5 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$168		
5.05.7 PCB Wipe Samples						
					No TCLP analyses necessary according to site-wide closure plan	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.55 hours @ 2 pers/crew = 1.1 hours	technician rate: rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)		samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	1.1	samp	\$83.33	\$92	715 SF @ 625 SF/samp = 1.1 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$133		
(Subt: Assemb 5.05.4 - 5.05.7)				\$899	decontamination & sampling of CSA 33	

5.05 CSA 33 (T-158 Unload Area)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.05.8 PPE Usage/H&S Planning					Level C @ 75%; Level D @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	16.3 hours @ 8 hr/day = 2.0 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	0.5	days	\$9.00	\$5	16.3 hours @ 8 hr/day = 2.0 days @ 25% "D" days = 0.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	1.5	days	\$25.00	\$38	16.3 hours @ 8 hr/day = 2.0 days @ 75% "C" days = 1.5 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.4	hours	\$75.00	\$30	16.3 hours @ 2.5 hr/hr = 0.4 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$72		
5.05.9 Supervision					0.5 day for closure of CSA 31	
Foreman	4	hours	\$65.00	\$260	1 day @ 4 hrs/day = 4.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$260		
5.05.10 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.3	hours	\$130.00	\$39	16.3 hours @ 0.015 hr/hr = 0.3 hours	Engineer rate: 2011 3rd party quote
Clerical	0.3	hours	\$45.00	\$14	16.3 hours @ 0.015 hr/hr = 0.3 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$53		
<i>(Subt: Assemb 5.05.8 - 5.05.10)</i>				\$385		
5.05 CSA 33 (T-158 Unload Area)	Direct Cost	Total	Basic	\$32,394		

5.05 CSA 33 (T-158 Unload Area)			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$32,394	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$2,268	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$1,296	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$1,944	note: DEC uses 6%
Engineering During Construction	2.00%	\$648	note: DEC uses 2%
General Contractor Profit	6.00%	\$1,944	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$8,099	
Subtotal - CSA 33 (T-158 Unload)		\$40,493	
Plus Contingency	10.00%	\$4,049	CWM and DEC 10%
Total - CSA 33 (T-158 Unload)		\$44,542	

Cost References:

"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.06 AWTS (inside) - 10 tanks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.06.1 Inventory Verification					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	10	hours	\$39.00	\$390	10 tanks @ 0.5 hour/tank = 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$390		
(Subt: Assemb 5.06.1 - 5.06.1)				\$390	tanks: T-710, T-810, T-820, T-850, T-910, T-1010, T-1020, T-1111, T1112, and T-1310	
5.06.2 Onsite Aqueous Treatment					mildly-contaminated aqueous wastes; assume pumped directly from tanks into AWTS	
Onsite Aqueous Treatment - Tanks	52176	gals	\$0.0453	\$2,364	52176 gals	AWTS average cost for all wastewater
Subt - Onsite Aqueous Treatment				\$2,364	Average cost per gallon 2010	
(Subt: Assemb 5.06.2 - 5.06.2)				\$2,364	onsite treatment of tanks' waste liquids	
5.06.3 Steel Tank Demolition					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	3				<i>26000 gallons: 1700 SF Tanks: 47 CF @ 490 Lb/CF = 23139 Lbs</i>	<i>Steel Tanks only; estimate 490#/CF</i>
Laborer	25.5	hours	\$39.00	\$995	1700 SF @ 200 SF/hour 8.5 hours @ 3 units/crew = 25.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	17	hours	\$45.00	\$765	1700 SF @ 200 SF/hour 8.5 hours @ 2 units/crew = 17.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	8.5	hours	\$84.09	\$715	1700 SF @ 200 SF/hour 8.5 hours @ 1 units/crew = 8.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	8.5	hours	\$34.40	\$292	1700 SF @ 200 SF/hour 8.5 hours @ 1 units/crew = 8.5 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	8.5	hours	\$2.47	\$21	1700 SF @ 200 SF/hour 8.5 hours @ 1 units/crew = 8.5 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	8.5	hours	\$30.03	\$255	1700 SF @ 200 SF/hour 8.5 hours @ 1 units/crew = 8.5 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane (80-ton)	8.5	hours	\$86.31	\$734	1700 SF @ 200 SF/hour 8.5 hours @ 1 units/crew = 8.5 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	8.5	hours	\$5.41	\$46	1700 SF @ 200 SF/hour 8.5 hours @ 1 units/crew = 8.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$3,823	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.06.4 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	7				<i>26176 gallons: 2005 SF Tanks: 56 CF @ 245 Lb/CF = 13645 Lbs</i>	<i>FRP Tanks only; estimate 245#/CF</i>
Laborer	30.1	hours	\$39.00	\$1,174	2005 SF @ 200 SF/hour 10.0 hours @ 3 units/crew = 30.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	20.1	hours	\$45.00	\$905	2005 SF @ 200 SF/hour 10.0 hours @ 2 units/crew = 20.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	10	hours	\$84.09	\$841	2005 SF @ 200 SF/hour 10.0 hours @ 1 units/crew = 10.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	10	hours	\$34.40	\$344	2005 SF @ 200 SF/hour 10.0 hours @ 1 units/crew = 10.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	10	hours	\$2.47	\$25	2005 SF @ 200 SF/hour 10.0 hours @ 1 units/crew = 10.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	10	hours	\$30.03	\$300	2005 SF @ 200 SF/hour 10.0 hours @ 1 units/crew = 10.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	10	hours	\$86.31	\$863	2005 SF @ 200 SF/hour 10.0 hours @ 1 units/crew = 10.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0	hours	\$5.41	\$0	2005 SF @ 200 SF/hour 10.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$4,451	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.06.5 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	1000	LF			<i>10 tanks @ 100 LF/tank = 1000 LF @ 4 Lb/LF = 4000 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	100	hours	\$39.00	\$3,900	1000 LF @ 20 LF/hour 50.0 hours @ 2 units/crew = 100.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	50	hours	\$5.41	\$271	1000 LF @ 20 LF/hour 50.0 hours @ 1 units/crew = 50.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$4,171	in the absence of facility data, piping assumed to average 100 LF/tank	

5.06 AWTS (inside) - 10 tanks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.06.6 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	10	hours	\$39.00	\$390	5.0 pumps @ 1 pump/hr 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5	hours	\$5.41	\$27	5.0 pumps @ 1 pump/hr 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$417	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.06.7 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.6	hours	\$39.00	\$23	8.6 CY @ 15 CY/hr = 0.6 hours @ 1 units/crew	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.6	hours	\$45.00	\$27	8.6 CY @ 15 CY/hr = 0.6 hours @ 1 units/crew = 0.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.6	hours	\$30.03	\$18	8.6 CY @ 15 CY/hr = 0.6 hours @ 1 units/crew = 0.6 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.6	hours	\$5.20	\$3	8.6 CY @ 15 CY/hr = 0.6 hours @ 1 units/crew	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$72	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.06.8 Uni'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	22.3	TONS	<i>n/a</i>		8.6 CY debr + 15% kiln dust = 9.92 CY total total tonnage = 22.3 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	3	hours	\$39.00	\$117	22.3 tons @ 15 tons/hr @ 1.5 hours @ 2 units/crew = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	4.5	hours	\$45.00	\$203	22.3 tons @ 15 tons/hr @ 1.5 hours @ 3 units/crew = 4.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	1.5	hours	\$19.18	\$29	22.3 tons @ 15 tons/hr @ 1.5 hours @ 1 units/crew = 1.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	1.5	hours	\$14.39	\$22	22.3 tons @ 15 tons/hr @ 1.5 hours @ 1 units/crew = 1.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	1.5	hours	\$329.70	\$495	22.3 tons @ 15 tons/hr @ 1.5 hours @ 1 units/crew = 1.5 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	1.5	hours	\$136.29	\$204	22.3 tons @ 15 tons/hr @ 1.5 hours @ 1 units/crew = 1.5 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost		tons		\$0	1.3 tons	
Cement Kiln Dust - Delivery Cost		loads		\$0	1.3 tons @ 20 ton/load = 0.1 loads	
Cement Kiln Dust - Mat'l&Delv Cost	1.3	tons	\$48.00	\$62		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.3	units	\$1,000.00	\$300	9.9 CYs @ 30 CY/unit = 0.3 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.5	hours	\$19.02	\$10	9.9 CYs @ 30 CY/unit = 0.3 rolloffs @ 1.5 hours/rolloff = 0.5 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$1,441	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.06.9 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	385.0	miles	\$3.25	\$1,251	9.9 CY @ 30 CY/load = 0.3 loads (↑1.0) @ 385 miles/trip = 385.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	9.9	CY	\$337.50	\$3,341	9.9 CY @ 27 CF/CY = 267.9 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$4,593		
<i>(Subt: Assemb 5.06.3 - 5.06.9)</i>				\$18,966	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	
5.06.10 Decon Filter Presses (wa)					prod'n rate = 105 SF/hr for 2-person crew	
Laborer	20.1	hours	\$39.00	\$784	1055.0 SF @ 105 SF/hr = 10.0 hours @ 2 pers/crew = 20.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	20	hours	\$4.04	\$81	1055.0 SF @ 105 SF/hr = 10.0 hours @ 1 unit/crew = 10.0 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	10	hours	\$3.38	\$34	1055.0 SF @ 105 SF/hr = 10.0 hours @ 1 unit/crew = 10.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Onsite Water Disposal	7500.0	gal	\$0.0313	\$235	7500.0 gallons	facility o/s mild waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Filter Presses (wash)				\$1,133	<i>area based upon facility est. of 7.18 tons & 1 CF = 490#; material thickness assumed to be 1/3-inch</i>	

5.06 AWTS (inside) - 10 tanks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate				In-house Pricing References	
5.06.11 Decon Filter Presses (rin)										
					prod'n rate = 105 SF/hr for 2-person crew;					
Laborer	20.1	hours	\$39.00	\$784	1055.0 SF @	105 SF/hr =	10.0 hours @	2 pers/crew =	20.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	20	hours	\$4.04	\$81	1055.0 SF @	105 SF/hr =	10.0 hours @	1 unit/crew =	10.0 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	10	hours	\$3.38	\$34	1055.0 SF @	105 SF/hr =	10.0 hours @	1 unit/crew =	10.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Onsite Water Disposal	5500.0	gal	\$0.0313	\$172	1055.0 SF @	1.6 gal/sf =	5500.0 gallons			facility o/s mild waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Filter Presses (rinse)				\$1,071	area based upon facility est. of 7.18 tons & 1 CF = 490#; material thickness assumed to be 1/3-inch					
5.06.11a PCB Wipe Samples										
					production rate = 0.5 hours/sample for two techs; rate same as facility's					
Technician	1.7	hours	\$38.00	\$65	1.7 samp @	0.5 hr/samp =	0.9 hours @	2 units/crew =	1.7 hours	technician rate: rate 2011 3rd party quote
PCB Analysis/Wipe Test (SW 8081/8082)	1.7	samp	\$83.33	\$142	1055.0 SF @	625 SF/samp =	1.7 samples			analytical price: average of three quotes
Subt - Wipe Samples				\$206						
5.06.12 Filter Press Demolition										
					prod'n rate == 250 SF/hr ; 1 CF debris per 45 SF press					
<i>No. of Presses/Area/Weight</i>	2	<i>ea @</i>			1055.0 SF FPs:	29.3 CF @	490 Lb/CF =	14360 Lbs		two filter presses: 14,360 Lbs total (facility estimate)
Laborer	8.4	hours	\$39.00	\$328	1055.0 SF @	250 SF/hour	4.2 hours @	2 units/crew =	8.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	8.4	hours	\$45.00	\$378	1055.0 SF @	250 SF/hour	4.2 hours @	2 units/crew =	8.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	4.2	hours	\$84.09	\$353	1055.0 SF @	250 SF/hour	4.2 hours @	1 units/crew =	4.2 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	4.2	hours	\$34.40	\$144	1055.0 SF @	250 SF/hour	4.2 hours @	1 units/crew =	4.2 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	4.2	hours	\$2.47	\$10	1055.0 SF @	250 SF/hour	4.2 hours @	1 units/crew =	4.2 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	4.2	hours	\$14.39	\$60	1055.0 SF @	250 SF/hour	4.2 hours @	1 units/crew =	4.2 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	4.2	hours	\$86.31	\$363	1055.0 SF @	250 SF/hour	4.2 hours @	1 units/crew =	4.2 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	4.2	hours	\$5.41	\$23	1055.0 SF @	250 SF/hour	4.2 hours @	1 units/crew =	4.2 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Filter Press Demolition				\$1,659	debris area based upon facility estimate of 7.18 tons; 1 CF = 490#; and material thickness = 1/3-inch					
5.06.13 Load FP Demolition Debris										
					production rate = 15 CY/hour					
Laborer	0.1	hours	\$39.00	\$4	1.1 CY @	15 CY/hr =	0.1 hours @	1 units/crew	0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.1	hours	\$45.00	\$5	1.1 CY @	15 CY/hr =	0.1 hours @	1 units/crew =	0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.1	hours	\$14.39	\$1	1.1 CY @	15 CY/hr =	0.1 hours @	1 units/crew =	0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.1	hours	\$5.20	\$1	1.1 CY @	15 CY/hr =	0.1 hours @	1 units/crew	0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load FP Demo Debris				\$10	debris volume in CY's derived from volume as expressed in cubic feet in Assembly 5.08.12 above					
5.06.14 Unl'd Stabilize/Encapsulate										
					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers					
<i>PROCESS TONS (incl kiln dust)</i>	7.3	<i>TONS</i>	<i>n/a</i>		1.1 CY debr +	15% kiln dust =	1.25 CY total	total tonnage =	7.34 tons	total tons derived from Assembly 5.08.12, plus kiln dust
Laborer	1	hours	\$39.00	\$39	7.3 tons @	15 tons/hr @	0.5 hours @	2 units/crew =	1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.5	hours	\$45.00	\$68	7.3 tons @	15 tons/hr @	0.5 hours @	3 units/crew =	1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.5	hours	\$19.18	\$10	7.3 tons @	15 tons/hr @	0.5 hours @	1 units/crew =	0.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.5	hours	\$14.39	\$7	7.3 tons @	15 tons/hr @	0.5 hours @	1 units/crew =	0.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.5	hours	\$329.70	\$165	7.3 tons @	15 tons/hr @	0.5 hours @	1 units/crew =	0.5 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.5	hours	\$135.90	\$68	7.3 tons @	15 tons/hr @	0.5 hours @	1 units/crew =	0.5 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost		tons		\$0	0.2 tons					
Cement Kiln Dust - Delivery Cost		loads		\$0	0.2 tons @	20 ton/load =	0.0 loads			
Cement Kiln Dust - Mat'l&Delv Cost	0.2	tons	\$48.00	\$10						CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.042	units	\$1,000.00	\$42	1.2 CY @	30 CY/unit =	0.0416 containers			CWM actual 2011 costs
Rolloffs (30-CY)	0.02	hours	\$19.02	\$0	1.2 CY @	30 CY/unit =	0.0416 rolloffs @	0.5 hours/rolloff =	0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate	7.3	tons		\$408						

5.06 AWTS (inside) - 10 tanks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate				In-house Pricing References	
5.06.15 Offsite T&D Filter Press										
Offsite Transportation	63.6	miles	\$3.25	\$207	1.2 CY @	30 CY/load =	0.04 loads @	1529 miles/trip =	63.6 miles	Rate: transporters quote/site experience
Offsite Disposal	1.2	CY	\$336.18	\$403	1.2 CY @	27 CF/CY =	33.7 CF			DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Filter Press				\$610						
(Subt: Assemb 5.06.10 - 5.06.15)				\$5,098	filter press decontamination, demolition, and onsite debris disposal (p. 30 in 2001 facility estimate)					
5.06.16 Decon SCA (wash)										
Laborer	51.1	hours	\$39.00	\$1,993	production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience					
Pressure Washer	51.1	hours	\$4.04	\$206	5369 SF @	105 SF/hr =	51.1 hours @	1 pers/crew =	51.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Vacuum (55-gal wet/dry)	51.1	hours	\$3.41	\$174	5369 SF @	105 SF/hr =	51.1 hours @	1 unit/crew =	51.1 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Subt - Decon SCA (wash)				\$2,374						RSM/HC p. 473 (line item 01 54 33 40 7800)
5.06.17 Decon SCA (rinse)										
Laborer	51.1	hours	\$39.00	\$1,993	production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience					
Pressure Washer	51.1	hours	\$4.04	\$206	5369 SF @	105 SF/hr =	51.1 hours @	1 unit/crew =	51.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Vacuum (55-gal wet/dry)	51.1	hours	\$3.41	\$174	5369 SF @	105 SF/hr =	51.1 hours @	1 unit/crew =	51.1 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Subt - Decon SCA (rinse)				\$2,374						RSM/HC p. 473 (line item 01 54 33 40 7800)
5.06.18 Decon Water Samp/Disp										
Technician	3.3	hours	\$38.00	\$125	production rate = 0.5 hours/sample for two techs; facility unit price = \$0.0273/gal					
VOC Analysis (EPA 624)	3.3	samp	\$105.00	\$347	3.3 samp @	0.5 hr/samp =	1.65 hours @	2 pers/crew =	3.3 hours	technician rate: rate 2011 3rd party quote
On-site Water Disposal	2684.5	gal	\$0.0313	\$84	3.0 areas @	1.1 samp/area =	3.3 samples			analytical price: average of three quotes
Subt - Decon Water Samp/Dispose				\$556	5369 SF @	5.5 gal/sf/wa =	2684.5 gallons			facility o/s mild waste treat price ; vol @ 0.05 gal/sf (equip lit)
5.06.19 PCB Wipe Samples										
Technician	8.6	hours	\$38.00	\$327	No TCLP analyses necessary according to site-wide closure plan					
TCLP (Metals/VOCs/Semi-VOCs)		samp	\$446.67	\$0	8.6 samp @	0.5 hr/samp =	4.3 hours @	2 pers/crew =	8.6 hours	technician rate: rate 2011 3rd party quote
PCB Analysis (SW 8081/8082)	8.6	samp	\$83.33	\$717	5369 SF @	625 SF/samp =	8.6 samples			analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$1,043						
(Subt: Assemb 5.06.16 - 5.06.19)				\$6,347	decontamination & sampling of SCA					
Total Non-Super Labor Hours 396.3										
5.06.20 PPE Usage/H&S Planning										
PPE Usage - Level D	0	days	\$0.00	\$0	Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs					
PPE Usage - Mod Level C	12.3	days	\$9.00	\$111	396.3 hours @ 8 hr/day = 49.5 days @ 0% "D" days = 0 days				Standard Work Clothes - Site Experience	
PPE Usage - Level C	37.2	days	\$25.00	\$930	396.3 hours @ 8 hr/day = 49.5 days @ 25% "D" days = 12.3 days				25% of non-supv hrs in Mod Level C (price: \$9/day)	
Safety Engineer	9.9	hours	\$75.00	\$743	396.3 hours @ 8 hr/day = 49.5 days @ 75% "C" days = 37.2 days				75% of non-supv hrs in Level C (price: \$25/day)	
Subt - PPE Usage/H&S Planning				\$1,783	396.3 hours @ 2.5% hr/hr = 9.9 hours				Safety Eng Rate: rate 2011 3rd party quote	
5.06.21 Supervision										
Foreman	40	hours	\$65.00	\$2,600	1 week for closure of 10 tanks					
Site Project manager	0	hours	\$75.00	\$0	1 week @ 40 hrs/wk = 40.0 hours				Outside foreman rate: 2011 3rd party quote	
Subtotal - Supervision				\$2,600	Included in Gen'l Contractor G&A/Home Office indirect costs				Site Manager Rate: 2011 3rd party quote	

5.06 AWTS (inside) - 10 tanks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.06.22 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	5.9	hours	\$130.00	\$767	396.3 hours @ 0.015 hr/hr = 5.9 hours	Engineer rate: 2011 3rd party quote
Clerical	5.9	hours	\$45.00	\$266	396.3 hours @ 0.015 hr/hr = 5.9 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$1,033		
<i>(Subt: Assemb 5.06.20 - 5.06.22)</i>				\$5,416		

5.06 AWTS (inside) - 10 tanks	Direct Cost	Total	Basic	\$38,580
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5.06 AWTS (inside) - 10 Tanks			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$38,580	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$2,701	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$1,543	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$2,315	note: DEC uses 6%
Engineering During Construction	2.00%	\$772	note: DEC uses 2%
General Contractor Profit	6.00%	\$2,315	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$9,645	
Subtotal: AWTS (inside)/10 Tanks		\$48,225	
Plus Contingency	10.00%	\$4,823	CWM and DEC 10%
Total: AWTS (inside)/10 Tanks		\$53,048	

Cost References:

"RSM/HC" refers to the RSM means "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSM means "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSM means "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.07 AWTS (inside SolSep) 2 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.07.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	2	hours	\$39.00	\$78	2 tanks @ 0.5 hour/tank = 1.0 hours @ 2 units/crew = 2.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$78		
(Subt: Assemb 5.07.1 - 5.07.1)				\$78	tanks: T-3011 and T-3012	
5.07.2 Onsite Aqueous Treatment						
					average cost per gal aqueous wastes; assume pumped directly from tanks into AWTS	
Onsite Aqueous Treatment - Tanks	750	gals	\$0.0453	\$34	750 gals	AWTS average cost for all wastewater
Subt - Onsite Aqueous Treatment				\$34		
(Subt: Assemb 5.07.2 - 5.07.2)				\$34	onsite treatment of tanks' waste liquids	
5.07.3 Steel Tank Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	0	<i>tnks @</i>			<i>0 gallons: 0 SF Tanks: 0 CF @ 490 Lb/CF = 0 Lbs</i>	<i>Steel Tanks only; estimate 490#/CF</i>
Laborer	0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition	0	SF @		\$0	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.07.4 FRP Tank Demolition						
					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	2	<i>tnks @</i>			<i>750 gallons: 155 SF Tanks: 4 CF @ 245 Lb/CF = 1055 Lbs</i>	<i>FRP Tanks only; facility estimates 245#/CF</i>
Laborer	2.3	hours	\$39.00	\$90	155 SF @ 200 SF/hour 0.8 hours @ 3 units/crew = 2.3 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.6	hours	\$45.00	\$72	155 SF @ 200 SF/hour 0.8 hours @ 2 units/crew = 1.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.8	hours	\$84.09	\$67	155 SF @ 200 SF/hour 0.8 hours @ 1 units/crew = 0.8 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.8	hours	\$34.40	\$28	155 SF @ 200 SF/hour 0.8 hours @ 1 units/crew = 0.8 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.8	hours	\$2.47	\$2	155 SF @ 200 SF/hour 0.8 hours @ 1 units/crew = 0.8 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.8	hours	\$30.03	\$24	155 SF @ 200 SF/hour 0.8 hours @ 1 units/crew = 0.8 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.8	hours	\$86.31	\$69	155 SF @ 200 SF/hour 0.8 hours @ 1 units/crew = 0.8 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0	hours	\$5.41	\$0	155 SF @ 200 SF/hour 0.8 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$352	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.07.5 Tank Piping Demolition						
					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	200	<i>LF</i>			<i>2 tanks @ 100 LF/tank = 200 LF @ 4 Lb/LF = 800 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	20	hours	\$39.00	\$780	200 LF @ 20 LF/hour 10.0 hours @ 2 units/crew = 20.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	10	hours	\$5.41	\$54	200 LF @ 20 LF/hour 10.0 hours @ 1 units/crew = 10.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$834	in the absence of f	

5.07 AWTS (inside SolSep) 2 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.07.6 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	2	hours	\$39.00	\$78	1.0 pumps @ 1 pump/hr 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	1	hours	\$5.41	\$5	1.0 pumps @ 1 pump/hr 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$83	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.07.7 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.1	hours	\$39.00	\$4	1.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.1	hours	\$45.00	\$5	1.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.1	hours	\$30.03	\$3	1.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.1	hours	\$5.20	\$1	1.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$12	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.07.8 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	1.2	TONS			1.1 CY debr + 15% kiln dust = 1.29 CY total total tonnage = 1.2 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.2	hours	\$39.00	\$8	1.2 tons @ 15 tons/hr @ 0.1 hours @ 2 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.2	hours	\$45.00	\$9	1.2 tons @ 15 tons/hr @ 0.1 hours @ 3 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.1	hours	\$19.18	\$2	1.2 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.1	hours	\$14.39	\$1	1.2 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.1	hours	\$329.70	\$33	1.2 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.1	hours	\$136.29	\$14	1.2 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.2	tons	\$0.00	\$0	0.2 tons	
Cement Kiln Dust - Delivery Cost	0.2	loads	\$0.00	\$0	0.2 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.2	tons	\$48.00	\$10		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0	units	\$1,000.00	\$0	1.3 CYs @ 30 CY/unit = 0.0 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0	hours	\$19.02	\$0	1.3 CYs @ 30 CY/unit = 0.0 rolloffs @ 0.1 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$76	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.07.9 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	385.0	miles	\$3.25	\$1,251	1.3 CY @ 30 CY/load = 0.3 loads (↑1.0) 385 miles/trip = 385 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	1.3	CY	\$337.50	\$439	1.3 CY @ 27 CF/CY = 34.9 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$1,690		
<i>(Subt: Assemb 5.07.3 - 5.07.9)</i>				\$3,047	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	
5.07.10 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	6.0	hours	\$39.00	\$234	629 SF @ 105 SF/hr = 6.0 hours @ 1 pers/crew = 6.0 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	6.0	hours	\$4.04	\$24	629 SF @ 105 SF/hr = 6.0 hours @ 1 unit/crew = 6.0 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	6.0	hours	\$3.41	\$20	629 SF @ 105 SF/hr = 6.0 hours @ 1 unit/crew = 6.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$279		

5.07 AWTS (inside SolSep) 2 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.07.11 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	6.0	hours	\$39.00	\$234	629 SF @ 105 SF/hr = 6.0 hours @ 1 pers/crew = 6.0 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	6.0	hours	\$4.04	\$24	629 SF @ 105 SF/hr = 6.0 hours @ 1 unit/crew = 6.0 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	6.0	hours	\$3.41	\$20	629 SF @ 105 SF/hr = 6.0 hours @ 1 unit/crew = 6.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)	0			\$279		
5.07.12 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	315.5		\$0.0313	\$10	629 SF @ 0.5 gal/sf/wa = 315.5 gallons	site waters waste treat price ; vol @ 0.5 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$167		
5.07.13 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.55 hours @ 2 pers/crew = 1.1 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	1.1	samp	\$83.33	\$92	629 SF @ 625 SF/samp = 1.1 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$133		
(Subt: Assemb 5.07.10 - 5.07.13)				\$858	decontamination & sampling of SCA	

Total Non-Super Labor Hours 42.7

5.07.14 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0	days	\$0.00	\$0	42.7 hours @ 8 hr/day = 5.3 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	1.3	days	\$9.00	\$12	42.7 hours @ 8 hr/day = 5.3 days @ 25% "Mod C" days = 1.3 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	4	days	\$25.00	\$100	42.7 hours @ 8 hr/day = 5.3 days @ 75% "C" days = 4.0 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	1.1	hours	\$75.00	\$83	42.7 hours @ 2.5 hr/hr = 1.1 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$194		
5.07.15 Supervision					1.0 day for closure of 2 tanks	
Foreman	8	hours	\$65.00	\$520	1 day @ 8 hrs/day = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520		
5.07.16 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.6	hours	\$130.00	\$78	42.7 hours @ 0.015 hr/hr = 0.6 hours	Engineer rate: 2011 3rd party quote
Clerical	0.6	hours	\$45.00	\$27	42.7 hours @ 0.015 hr/hr = 0.6 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$105		
(Subt: Assemb 5.07.14 - 5.07.16)				\$819		

5.07 AWTS (inside SolSep) 2 tnks	Direct Cost	Total	Basic	\$4,837
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5.07 AWTS (inside SolSep) 2 tnks			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$4,837	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$339	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$193	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$290	note: DEC uses 6%
Engineering During Construction	2.00%	\$97	note: DEC uses 2%
General Contractor Profit	6.00%	\$290	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$1,209	
Subtotal: AWTS (i/s SolSep) 2 tks		\$6,046	
Plus Contingency	10.00%	\$605	CWM and DEC 10%
Total: AWTS (i/s SolSep) 2 tanks		\$6,650	

Cost References:

"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.08 AWTS (o/s north AWT) 3 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.08.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	3.0	hours	\$39.00	\$117	3 tanks @ 0.5 hour/tank = 1.5 hours @ 2 units/crew = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$117		
(Subt: Assemb 5.08.1 - 5.08.1)				\$117	tanks: T-100, T-125, and T-8008	
5.08.2 Empty Tank T-8008						
					prod'n rate = 1,650 gals/hr; rsm/up p. 9-171 (33-19-0101); one 500-gal tank	
Laborer	0.6	hours	\$39.00	\$24	500 gals @ 1650 gals/hr = 0.30 hours @ 2 units/crew = 0.61 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment		hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.3	hours	\$6.31	\$2	500 gals @ 1650 gals/hr = 0.30 hours @ 1 units/crew = 0.30 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty T-8008 into Tanker				\$26		
5.08.3 Transport Tanker Onsite						
					production rate = 0.5 hours for on-site travel.	
Road Tractor (4 x 2, 30-ton)	0.05	hours	\$32.45	\$2	500 gals @ 5500 gals/load = 0.09 loads @ 0.5 hours/trip = 0.05 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.05	hours	\$45.00	\$2	500 gals @ 5500 gals/load = 0.09 loads @ 0.5 hours/trip = 0.05 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.05	hours	\$6.31	\$0	500 gals @ 5500 gals/load = 0.09 loads @ 0.5 hours/trip = 0.05 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transport Tanker Onsite				\$4		
5.08.4 Empty One (1) Tanker						
					prod'n rate = 1,650 gals/hr; rsm/up p. 9-171 (33-19-0101).	
Laborer	0.61	hours	\$39.00	\$24	500 gals @ 1650 gals/hr = 0.30 hours @ 2 units/crew = 0.61 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment		hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.3	hours	\$6.31	\$2	500 gals @ 1650 gals/hr = 0.30 hours @ 1 units/crew = 0.30 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty 1 Tankers' Contents				\$26		
(Subt: Assemb 5.08.2 - 5.08.4)				\$56	empty T-8008 into tanker and transport onsite to AWTS	
5.08.5 Onsite Aqueous Treatment						
Onsite Aqu Treat - T-8008	500.0	gallons	\$1.8244	\$912	500 gallons	AWTS treatment costs @ \$1.8244
Onsite Aqu Treat - T-100	160545.0	gallons	\$0.0453	\$7,273	160545 gallons	AWTS average cost for all wastewater
Subt - Onsite Aqu Trt - Tankers				\$8,185		
(Subt: Assemb 5.08.5 - 5.08.5)				\$8,185	onsite treatment of tanks' waste liquids	
5.08.6 Tnk T-125 Liqs to FAC pond						
					prod'n rate = 60,000 gals/hr = 1,000 gals/min (based upon facility estimate to pump from FAC ponds)	
Laborer		hours	\$39.00	\$0	Included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	1.0	samp	\$38.00	\$38	1.0 samp @ 0.5 hr/samp = 0.5 hours @ 2 pers/crew = 1.0 hours	technician rate: rate 2011 3rd party quote
VOCs	1.0	samp	\$105.00	\$105	1 sample	analytical price: average of three quotes
Semi-VOCs	1.0	samp	\$208.33	\$208	1 sample	analytical price: average of three quotes
PCBs/Pesticides	1.0	samp	\$133.33	\$133	1 sample	analytical price: average of three quotes
Metals	1.0	hours	\$188.00	\$188	1 sample	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam)	0.0	LF	\$0.00	\$0	Existing equipment part of tank system	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Tank T-125 to FAC Pond				\$673		
(Subt: Assemb 5.08.6 - 5.08.6)				\$673	transfer contents of T-125 to FAC Ponds	

5.08 AWTS (o/s north AWT) 3 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.08.7 Steel Tank Demolition					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	2.0	tnks @			554816 gallons: 17522 SF Tanks: 487 CF @ 490 Lb/CF = 238494 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	262.8	hours	\$39.00	\$10,249	17522 SF @ 200 SF/hour 87.6 hours @ 3 units/crew = 262.8 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	175.2	hours	\$45.00	\$7,884	17522 SF @ 200 SF/hour 87.6 hours @ 2 units/crew = 175.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	87.6	hours	\$84.09	\$7,366	17522 SF @ 200 SF/hour 87.6 hours @ 1 units/crew = 87.6 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	87.6	hours	\$34.40	\$3,013	17522 SF @ 200 SF/hour 87.6 hours @ 1 units/crew = 87.6 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	87.6	hours	\$2.47	\$216	17522 SF @ 200 SF/hour 87.6 hours @ 1 units/crew = 87.6 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	87.6	hours	\$30.03	\$2,631	17522 SF @ 200 SF/hour 87.6 hours @ 1 units/crew = 87.6 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	87.6	hours	\$86.31	\$7,561	17522 SF @ 200 SF/hour 87.6 hours @ 1 units/crew = 87.6 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	87.6	hours	\$5.41	\$474	17522 SF @ 200 SF/hour 87.6 hours @ 1 units/crew = 87.6 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$39,395	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.08.8 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	1.0	tnks @			500 gallons: 114 SF Tanks: 3 CF @ 245 Lb/CF = 776 Lbs	FRP Tanks only; facility estimates 245#/CF
Laborer	1.7	hours	\$39.00	\$66	114 SF @ 200 SF/hour 0.6 hours @ 3 units/crew = 1.7 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.1	hours	\$45.00	\$50	114 SF @ 200 SF/hour 0.6 hours @ 2 units/crew = 1.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.6	hours	\$84.09	\$50	114 SF @ 200 SF/hour 0.6 hours @ 1 units/crew = 0.6 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.6	hours	\$34.40	\$21	114 SF @ 200 SF/hour 0.6 hours @ 1 units/crew = 0.6 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.6	hours	\$2.47	\$1	114 SF @ 200 SF/hour 0.6 hours @ 1 units/crew = 0.6 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.6	hours	\$30.03	\$18	114 SF @ 200 SF/hour 0.6 hours @ 1 units/crew = 0.6 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.6	hours	\$86.31	\$52	114 SF @ 200 SF/hour 0.6 hours @ 1 units/crew = 0.6 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	114 SF @ 200 SF/hour 0.6 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$258	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.08.9 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	300.0	LF			3 tanks @ 100 LF/tank = 300 LF @ 4 Lb/LF = 1200 Lbs	combined Steel and FRP Tanks' Piping
Laborers	30.0	hours	\$39.00	\$1,170	300 LF @ 20 LF/hour 15.0 hours @ 2 units/crew = 30.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	15.0	hours	\$5.41	\$81	300 LF @ 20 LF/hour 15.0 hours @ 1 units/crew = 15.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$1,251	in the absence of facility data, piping assumed to average 100 LF/tank	
5.08.10 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	3.0	hours	\$39.00	\$117	1.5 pumps @ 1 pump/hr 1.5 hours @ 2 units/crew = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	1.5	hours	\$5.41	\$8	1.5 pumps @ 1 pump/hr 1.5 hours @ 1 units/crew = 1.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$125	pump weight = 250# each; in the absence of facility data, one pump per two tanks is estimated	
5.08.11 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	1.3	hours	\$39.00	\$51	19.6 CY @ 15 CY/hr = 1.3 hours @ 1 units/crew 1.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.3	hours	\$45.00	\$59	19.6 CY @ 15 CY/hr = 1.3 hours @ 1 units/crew = 1.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	1.3	hours	\$30.03	\$39	19.6 CY @ 15 CY/hr = 1.3 hours @ 1 units/crew = 1.3 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	1.3	hours	\$5.20	\$7	19.6 CY @ 15 CY/hr = 1.3 hours @ 1 units/crew 1.3 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$155	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	

5.08 AWTS (o/s north AWT) 3 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.08.12 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	123.4	TONS			19.6 CY debr + 15% kiln dust = 22.53 CY total total tonnage = 123.4 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	16.4	hours	\$39.00	\$640	123.4 tons @ 15 tons/hr @ 8.2 hours @ 2 units/crew = 16.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	24.7	hours	\$45.00	\$1,112	123.4 tons @ 15 tons/hr @ 8.2 hours @ 3 units/crew = 24.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	8.2	hours	\$19.18	\$157	123.4 tons @ 15 tons/hr @ 8.2 hours @ 1 units/crew = 8.2 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	8.2	hours	\$14.39	\$118	123.4 tons @ 15 tons/hr @ 8.2 hours @ 1 units/crew = 8.2 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	8.2	hours	\$329.70	\$2,704	123.4 tons @ 15 tons/hr @ 8.2 hours @ 1 units/crew = 8.2 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	8.2	hours	\$136.29	\$1,118	123.4 tons @ 15 tons/hr @ 8.2 hours @ 1 units/crew = 8.2 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	2.9 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	2.9 tons @ 20 ton/load = 0.1 loads	
Cement Kiln Dust - Mat'l&Delv Cost	2.9	tons	\$48.00	\$139		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.8	units	\$1,000.00	\$800	22.5 CYs @ 30 CY/unit = 0.8 containers	CWM actual 2011 costs
Rolloffs (30-CY)	6.2	hours	\$19.02	\$118	22.5 CYs @ 30 CY/unit = 0.8 rolloffs @ 8.2 hours/rolloff = 6.2 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$6,905	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.08.13 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	385.0	miles	\$3.25	\$1,251	22.5 CY @ 30 CY/load = 0.8 loads (↑1.0) (385 miles/trip = 385.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	22.5	CY	\$337.50	\$7,594	22.5 CY @ 27 CF/CY = 608.2 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$8,845		
<i>(Subt: Assemb 5.08.7 - 5.08.13)</i>				\$56,934	tank/piping/pump demolition, and offsite transportation & disposal	
5.08.14 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	151.2	hours	\$39.00	\$5,897	15875 SF @ 105 SF/hr = 151.2 hours @ 1 pers/crew = 151.2 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	151.2	hours	\$4.04	\$611	15875 SF @ 105 SF/hr = 151.2 hours @ 1 unit/crew = 151.2 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	151.2	hours	\$3.41	\$516	15875 SF @ 105 SF/hr = 151.2 hours @ 1 unit/crew = 151.2 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$7,023		
5.08.15 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	151.2	hours	\$39.00	\$5,897	15875 SF @ 105 SF/hr = 151.2 hours @ 1 pers/crew = 151.2 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	151.2	hours	\$4.04	\$611	15875 SF @ 105 SF/hr = 151.2 hours @ 1 unit/crew = 151.2 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	151.2	hours	\$3.41	\$516	15875 SF @ 105 SF/hr = 151.2 hours @ 1 unit/crew = 151.2 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$7,023		
5.08.16 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	7937.5	gal	\$0.0313	\$248	15875 SF @ 0.5 gal/sf/wa = 7937.5 gallons	site waters waste treat price ; vol @ 0.5 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$406		

5.08 AWTS (o/s north AWT) 3 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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5.08.17 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	25.4	hours	\$38.00	\$965	25.4 samp @ 0.5 hr/samp = 12.7 hours @ 2 pers/crew = 25.4 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	25.4	samp	\$83.33	\$2,117	15875 SF @ 625 SF/samp = 25.4 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemb 5.08.14 - 5.08.17)				\$3,082		
				\$17,534	decontamination & sampling of SCA	

Total Non-Super Labor Hours 851.7

5.08.18 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	851.7 hours @ 8 hr/day = 106.5 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	26.6	days	\$9.00	\$239	851.7 hours @ 8 hr/day = 106.5 days @ 25% "Mod C" days = 26.6 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	79.9	days	\$25.00	\$1,998	851.7 hours @ 8 hr/day = 106.5 days @ 75% "C" days = 79.9 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	21.3	hours	\$75.00	\$1,598	851.7 hours @ 2.5% hr/hr = 21.3 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$3,834		
5.08.19 Supervision					3 weeks for closure of 3 tanks	
Foreman	120.0	hours	\$65.00	\$7,800	3 weeks @ 40 hrs/wk = 120.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$7,800		
5.08.20 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	12.8	hours	\$130.00	\$1,664	851.7 hours @ 0.015 hr/hr = 12.8 hours	Engineer rate: 2011 3rd party quote
Clerical	12.8	hours	\$45.00	\$576	851.7 hours @ 0.015 hr/hr = 12.8 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification (Subt: Assemb 5.08.18 - 5.08.20)				\$2,240		
				\$13,874		

5.08 AWTS (o/s north AWT) 3 tnks	Direct Cost	Total	Basic	\$97,372
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5.08 AWTS (o/s north AWT) 3 tnks			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$97,372	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$6,816	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$3,895	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$5,842	note: DEC uses 6%
Engineering During Construction	2.00%	\$1,947	note: DEC uses 2%
General Contractor Profit	6.00%	\$5,842	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$24,343	
Subt: AWTS (o/s nor AWT) 3 Tnks		\$121,715	
Plus Contingency	10.00%	\$12,172	CWM and DEC 10%
Tot: AWTS (o/s nor AWT) 3 Tnks		\$133,887	

Cost References:

"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.09 AWTS (o/s west AWT) 1 tank

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.09.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	1	hours	\$39.00	\$39	1 tanks @ 0.5 hour/tank = 0.5 hours @ 2 units/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$39		
(Subt: Assemb 5.09.1 - 5.09.1)				\$39	tank: T-58	
5.09.2 T-58 Liquids to FAC pond						
					prod'n rate = 60,000 gals/hr = 1,000 gals/min (based upon facility experience to pump from FAC ponds)	
Laborer		hours	\$39.00	\$0	Included in third party operation of AWTS	HASP req's two: loaded labor rate 2011 3rd party quote
VOCs	1	samp	\$38.00	\$38	1 sample	analytical price: average of three quotes
Semi-VOCs	1	samp	\$105.00	\$105	1 sample	analytical price: average of three quotes
PCBs/Pesticides	1	samp	\$208.33	\$208	1 sample	analytical price: average of three quotes
Metals	1	samp	\$133.33	\$133	1 sample	analytical price: average of three quotes
Discharge Pump	0	hours	\$188.00	\$0	Existing equipment part of tank system	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam)	0	LF	\$0.00	\$0	Existing equipment part of tank system	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subt--T-58 Liqs to FAC pond			\$0.00	\$485	transfer contents of Tank T-58 to FAC ponds	
(Subt: Assemb 5.09.2 - 5.09.2)				\$485	transfer contents of Tank T-58 to FAC ponds	
5.09.3 Steel Tank Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
No. of Tanks/Capacity/Area/Weight	1	tnks @			488529 gallons: 13869 SF Tanks: 385 CF @ 490 Lb/CF = 188773 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	208	hours	\$39.00	\$8,112	13869 SF @ 200 SF/hour 69.3 hours @ 3 units/crew = 208.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	138.7	hours	\$45.00	\$6,242	13869 SF @ 200 SF/hour 69.3 hours @ 2 units/crew = 138.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	69.3	hours	\$84.09	\$5,827	13869 SF @ 200 SF/hour 69.3 hours @ 1 units/crew = 69.3 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	69.3	hours	\$34.40	\$2,384	13869 SF @ 200 SF/hour 69.3 hours @ 1 units/crew = 69.3 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	69.3	hours	\$2.47	\$171	13869 SF @ 200 SF/hour 69.3 hours @ 1 units/crew = 69.3 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	69.3	hours	\$30.03	\$2,081	13869 SF @ 200 SF/hour 69.3 hours @ 1 units/crew = 69.3 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	69.3	hours	\$86.31	\$5,981	13869 SF @ 200 SF/hour 69.3 hours @ 1 units/crew = 69.3 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	69.3	hours	\$5.41	\$375	13869 SF @ 200 SF/hour 69.3 hours @ 1 units/crew = 69.3 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition	13869	SF @		\$31,173	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.09.4 FRP Tank Demolition						
					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
No. of Tanks/Capacity/Area/Weight	0	tnks @			0 gallons: 0 SF Tanks: 0 CF @ 245 Lb/CF = 0 Lbs	FRP Tanks only; facility estimates 245#/CF
Laborer	0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$0	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	

5.09 AWTS (o/s west AWT) 1 tank

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.09.5 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	100	LF			<i>1 tanks @ 100 LF/tank = 100 LF @ 4 Lb/LF = 400 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	10	hours	\$39.00	\$390	100 LF @ 20 LF/hour 5.0 hours @ 2 units/crew 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5	hours	\$5.41	\$27	100 LF @ 20 LF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$417	<i>in the absence of facility data, piping assumed to average 100 LF/tank</i>	
5.09.6 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	1	hours	\$39.00	\$39	0.5 pumps @ 1 pump/hr 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	0.5	hours	\$5.41	\$3	0.5 pumps @ 1 pump/hr 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$42	<i>pump weight = 250# each; in the absence of facility data, one pump per two tanks is estimated</i>	
5.09.7 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	1	hours	\$39.00	\$39	14.8 CY @ 15 CY/hr = 1.0 hours @ 1 units/crew 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1	hours	\$45.00	\$45	14.8 CY @ 15 CY/hr = 1.0 hours @ 1 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	1	hours	\$30.03	\$30	14.8 CY @ 15 CY/hr = 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	1	hours	\$5.20	\$5	14.8 CY @ 15 CY/hr = 1.0 hours @ 1 units/crew 1.0 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$119	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.09.8 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	96.9	TONS			14.8 CY debr + 15% kiln dust = 16.96 CY total total tonnage = 96.9 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	12.9	hours	\$39.00	\$503	96.9 tons @ 15 tons/hr @ 6.5 hours @ 2 units/crew = 12.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	19.4	hours	\$45.00	\$873	96.9 tons @ 15 tons/hr @ 6.5 hours @ 3 units/crew = 19.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	6.5	hours	\$19.18	\$125	96.9 tons @ 15 tons/hr @ 6.5 hours @ 1 units/crew = 6.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	6.5	hours	\$14.39	\$94	96.9 tons @ 15 tons/hr @ 6.5 hours @ 1 units/crew = 6.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	6.5	hours	\$329.70	\$2,143	96.9 tons @ 15 tons/hr @ 6.5 hours @ 1 units/crew = 6.5 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	6.5	hours	\$136.29	\$886	96.9 tons @ 15 tons/hr @ 6.5 hours @ 1 units/crew = 6.5 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost		tons		\$0	2.2 tons	
Cement Kiln Dust - Delivery Cost		loads		\$0	2.2 tons @ 20 ton/load = 0.1 loads	
Cement Kiln Dust - Mat'l&Delv Cost	2.2	tons	\$48.00	\$106		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.6	units	\$1,000.00	\$600	17.0 CYs @ 30 CY/unit = 0.6 containers	CWM actual 2011 costs
Rolloffs (30-CY)	3.7	hours	\$19.02	\$70	17.0 CYs @ 30 CY/unit = 0.6 rolloffs @ 6.5 hours/rolloff = 3.7 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$5,399	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.09.9 Offsite T&D -Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	385.0	miles	\$3.25	\$1,251	17.0 CY @ 30 CY/load = 0.6 loads(↑1.0) (385 miles/trip = 385.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	17.0	CY	\$337.50	\$5,738	17.0 CY @ 27 CF/CY = 458.0 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$6,989		
<i>(Subt: Assemb 5.09.3 - 5.09.9)</i>				\$44,139	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	

5.09 AWTS (o/s west AWT) 1 tank

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.09.10 Decon SCA (wash)					not applicable - no secondary containment for this tank	
Laborer	0	hours	\$39.00	\$0		two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	0	hours	\$4.04	\$0		RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	0	hours	\$3.41	\$0		RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$0		
5.09.11 Decon SCA (rinse)					not applicable - no secondary containment for this tank	
Laborer	0	hours	\$39.00	\$0		two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	0	hours	\$4.04	\$0		RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	0	hours	\$3.41	\$0		RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$0		
5.09.12 Decon Water Samp/Disp					not applicable - no secondary containment for this tank	
Technician	0	hours	\$38.00	\$0		rate 2011 3rd party quote
VOC Analysis (EPA 624)	0	samp	\$105.00	\$0		analytical price: average of three quotes
On-site Water Disposal			\$0.0313	\$0		site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$0		
5.09.13 PCB Wipe Samples					not applicable - no secondary containment for this tank	
Technician	0	hours	\$38.00	\$0		technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	0	samp	\$83.33	\$0		analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$0		
(Subt: Assemb 5.09.10 - 5.09.13)				\$0	decontamination & sampling of SCA	

Total Non-Super Labor Hours

393

5.09.14 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0	days	\$0.00	\$0	393.0 hours @ 8 hr/day = 49.1 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	12.3	days	\$9.00	\$111	393.0 hours @ 8 hr/day = 49.1 days @ 25% "Mod C" days = 12.3 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	36.8	days	\$25.00	\$920	393.0 hours @ 8 hr/day = 49.1 days @ 75% "C" days = 36.8 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	9.8	hours	\$75.00	\$735	393.0 hours @ 2.5% hr/hr = 9.8 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$1,766		
5.09.15 Supervision					1 week for closure of 1 tank	
Foreman	40	hours	\$65.00	\$2,600	1 week @ 40 hrs/wk = 40.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$2,600		

5.09 AWTS (o/s west AWT) 1 tank

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.09.16 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	5.9	hours	\$130.00	\$767	393.0 hours @ 0.015 hr/hr = 5.9 hours	Engineer rate: 2011 3rd party quote
Clerical	5.9	hours	\$45.00	\$266	393.0 hours @ 0.015 hr/hr = 5.9 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$1,033		
(Subt: Assemb 5.09.14 - 5.09.16)				\$5,398		

5.09 AWTS (o/s west AWT) 1 tank	Direct Cost	Total	Basic	\$50,061
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5.09 AWTS (o/s west AWT) 1 tank			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$50,061	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$3,504	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$2,002	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$3,004	note: DEC uses 6%
Engineering During Construction	2.00%	\$1,001	note: DEC uses 2%
General Contractor Profit	6.00%	\$3,004	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$12,515	
Subt: AWTS (o/s west AWT) 1 tank		\$62,576	
Plus Contingency	10.00%	\$6,258	CWM and DEC 10%
Tot: AWTS (o/s west AWT) 1 tank		\$68,834	

Cost References:

"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.10 AWTS (o/s east AWT) 5 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.10.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	5	hours	\$39.00	\$195	5 tanks @ 0.5 hour/tank = 2.5 hours @ 2 units/crew = 5.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$195		
(Subt: Assemb 5.10.1 - 5.10.1)				\$195	tanks: T-210, T-220, T-230, T-310, and T-320	
5.10.2 Onsite Aqueous Treatment						
					highly-contaminated liquid wastes to be pumped directly from tanks into AWTS	
Onsite Aqueous Treatment - Tanks	150914	gals	\$0.0453	\$6,836	150914 gals	AWTS average cost for all wastewater
Subt - Onsite Aqueous Treatment				\$6,836		
(Subt: Assemb 5.10.2 - 5.10.2)				\$6,836	onsite treatment of tanks' waste liquids	
5.10.3 Steel Tank Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
No. of Tanks/Capacity/Area/Weight	2	tnks @			60000 gallons: 2450 SF Tanks: 68 CF @ 490 Lb/CF = 33347 Lbs	Steel Tanks only; facility estimates 490#/CF
Laborer	36.8	hours	\$39.00	\$1,435	2450 SF @ 200 SF/hour 12.3 hours @ 3 units/crew = 36.8 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	24.5	hours	\$45.00	\$1,103	2450 SF @ 200 SF/hour 12.3 hours @ 2 units/crew = 24.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	12.3	hours	\$84.09	\$1,034	2450 SF @ 200 SF/hour 12.3 hours @ 1 units/crew = 12.3 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	12.3	hours	\$34.40	\$423	2450 SF @ 200 SF/hour 12.3 hours @ 1 units/crew = 12.3 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	12.3	hours	\$2.47	\$30	2450 SF @ 200 SF/hour 12.3 hours @ 1 units/crew = 12.3 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	12.3	hours	\$30.03	\$369	2450 SF @ 200 SF/hour 12.3 hours @ 1 units/crew = 12.3 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	12.3	hours	\$86.31	\$1,062	2450 SF @ 200 SF/hour 12.3 hours @ 1 units/crew = 12.3 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	12.3	hours	\$5.41	\$67	2450 SF @ 200 SF/hour 12.3 hours @ 1 units/crew = 12.3 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$5,523	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.10.4 FRP Tank Demolition						
					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
No. of Tanks/Capacity/Area/Weight	3	tnks @			90914 gallons: 4380 SF Tanks: 122 CF @ 245 Lb/CF = 29808 Lbs	FRP Tanks only; facility estimates 245#/CF
Plastic Bio-media in tanks	226	CY	n/a		60914 gallons = 8122 tank CF @ 75% equals 6091 biomedica CF = 226 CY	plastic bio-media projected to occupy 75% of tank volume
Lab'r/EO/loader to handle bio-media	9	hours	\$131.79	\$1,186	226 CY @ 25 CY/hr = 9.0 hours; 50 Lb/CY = 11280 Lbs	handling @ 25 CY/hr; bio-media weight est @ 50#/CY
Laborer	65.7	hours	\$39.00	\$2,562	4380 SF @ 200 SF/hour 21.9 hours @ 3 units/crew = 65.7 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	43.8	hours	\$45.00	\$1,971	4380 SF @ 200 SF/hour 21.9 hours @ 2 units/crew = 43.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	21.9	hours	\$84.09	\$1,842	4380 SF @ 200 SF/hour 21.9 hours @ 1 units/crew = 21.9 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	21.9	hours	\$34.40	\$753	4380 SF @ 200 SF/hour 21.9 hours @ 1 units/crew = 21.9 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	21.9	hours	\$2.47	\$54	4380 SF @ 200 SF/hour 21.9 hours @ 1 units/crew = 21.9 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	21.9	hours	\$30.03	\$658	4380 SF @ 200 SF/hour 21.9 hours @ 1 units/crew = 21.9 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	21.9	hours	\$86.31	\$1,890	4380 SF @ 200 SF/hour 21.9 hours @ 1 units/crew = 21.9 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0	hours	\$5.41	\$0	4380 SF @ 200 SF/hour 21.9 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$10,916	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	

5.10 AWTS (o/s east AWT) 5 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.10.5 Tank Piping Demolition						
					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
Estimated Piping Length	500	LF			5 tanks @ 100 LF/tank = 500 LF @ 4 Lb/LF = 2000 Lbs	combined Steel and FRP Tanks' Piping
Laborers	50	hours	\$39.00	\$1,950	500 LF @ 20 LF/hour 25.0 hours @ 2 units/crew = 50.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	25	hours	\$5.41	\$135	500 LF @ 20 LF/hour 25.0 hours @ 1 units/crew = 25.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$2,085	<i>in the absence of facility data, piping assumed to average 100 LF/tank</i>	
5.10.6 Tank Pump Demolition						
					prod'n rate = 1 pump/hr; assume 0.5 pumps/tank	
Laborers	5	hours	\$39.00	\$195	2.5 pumps @ 1 pump/hr 2.5 hours @ 2 units/crew = 5.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	2.5	hours	\$5.41	\$14	2.5 pumps @ 1 pump/hr 2.5 hours @ 1 units/crew = 2.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$209	<i>pump weight = 250# each; one pump per two tanks is estimated</i>	
5.10.7 Load Tank Demo Debris						
					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	15.7	hours	\$39.00	\$612	235.0 CY @ 15 CY/hr = 15.7 hours @ 1 units/crew = 15.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	15.7	hours	\$45.00	\$707	235.0 CY @ 15 CY/hr = 15.7 hours @ 1 units/crew = 15.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	15.7	hours	\$30.03	\$471	235.0 CY @ 15 CY/hr = 15.7 hours @ 1 units/crew = 15.7 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	15.7	hours	\$5.20	\$82	235.0 CY @ 15 CY/hr = 15.7 hours @ 1 units/crew = 15.7 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$1,872	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.10.8 Unl'd Stabilize/Encapsulate						
					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
PROCESS TONS (incl kiln dust)	73.8	TONS			235.0 CY debr + 15% kiln dust = 270.30 CY total total tonnage = 73.8 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	9.8	hours	\$39.00	\$382	73.8 tons @ 15 tons/hr @ 4.9 hours @ 2 units/crew = 9.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	14.8	hours	\$45.00	\$666	73.8 tons @ 15 tons/hr @ 4.9 hours @ 3 units/crew = 14.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	4.9	hours	\$19.18	\$94	73.8 tons @ 15 tons/hr @ 4.9 hours @ 1 units/crew = 4.9 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	4.9	hours	\$14.39	\$71	73.8 tons @ 15 tons/hr @ 4.9 hours @ 1 units/crew = 4.9 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	4.9	hours	\$329.70	\$1,616	73.8 tons @ 15 tons/hr @ 4.9 hours @ 1 units/crew = 4.9 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	4.9	hours	\$136.29	\$668	73.8 tons @ 15 tons/hr @ 4.9 hours @ 1 units/crew = 4.9 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0	tons	\$0.00	\$0	not applicable	
Cement Kiln Dust - Delivery Cost	0	loads	\$0.00	\$0	not applicable	
Cement Kiln Dust - Mat'l&Delv Cost	35.3	tons	\$48.00	\$1,694	35.3 tons	CWM actual 2011 costs
Encapsulation Containers (30-CY)	9	units	\$1,000.00	\$9,000	270.3 CYs @ 30 CY/unit = 9.0 containers	CWM actual 2011 costs
Rolloffs (30-CY)	44.3	hours	\$19.02	\$843	270.3 CYs @ 30 CY/unit = 9.0 rolloffs @ 4.9 hours/rolloff = 44.3 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$15,033	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.10.9 Offsite T&D - Tank Demo						
					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	3465.0	miles	\$3.25	\$11,261	270.3 CY @ 30 CY/load = 9.0 loads @ 385 miles/trip = 3465.0miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	270.3	CY	\$337.50	\$91,226	270.3 CY @ 27 CF/CY = 7298.0 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$102,488		
(Subt: Assemb 5.10.3 - 5.10.9)				\$138,126	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	

5.10 AWTS (o/s east AWT) 5 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.10.10 Decon SCA (wash)						
					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	33.4	hours	\$39.00	\$1,303	3510 SF @ 105 SF/hr = 33.4 hours @ 1 pers/crew = 33.4 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	33.4	hours	\$4.04	\$135	3510 SF @ 105 SF/hr = 33.4 hours @ 1 unit/crew = 33.4 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	33.4	hours	\$3.41	\$114	3510 SF @ 105 SF/hr = 33.4 hours @ 1 unit/crew = 33.4 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$1,551		
5.10.11 Decon SCA (rinse)						
					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	33.4	hours	\$39.00	\$1,303	3510 SF @ 105 SF/hr = 33.4 hours @ 1 pers/crew = 33.4 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	33.4	hours	\$4.04	\$135	3510 SF @ 105 SF/hr = 33.4 hours @ 1 unit/crew = 33.4 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	33.4	hours	\$3.41	\$114	3510 SF @ 105 SF/hr = 33.4 hours @ 1 unit/crew = 33.4 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$1,551		
5.10.12 Decon Water Samp/Disp						
					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	1705.0	gal	\$0.0313	\$53	3510 SF @ 0.5 gal/sf/wa = 1705.0 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$211		
5.10.13 PCB Wipe Samples						
					No TCLP analyses necessary according to site-wide closure plan	
Technician	5.6	hours	\$38.00	\$213	5.6 samp @ 0.5 hr/samp = 2.8 hours @ 2 pers/crew = 5.6 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	5.6	samp	\$83.33	\$467	3510 SF @ 625 SF/samp = 5.6 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemb 5.10.10 - 5.10.13)				\$679		
				\$3,993	decontamination & sampling of SCA	
5.10.14 Offsite T&D - PCB Solids						
					3,800 Lbs of PCB Solids from T-310 and T-320	
Transportation	193.7	miles	\$3.25	\$630	1.9 tons @ 15.0 tons/load = 0.1 loads @ 1529 miles/load = 193.7 miles	Rate: transporters quote/site experience
Disposal	3800	Lbs	\$0.64	\$2,432	3800.0 Lbs	Current CWM 2011 third party rate
Subt - Offsite T&D - PCB Solids (Subt: Assemb 5.10.14 - 5.10.14)				\$3,062		
				\$3,062	offsite T&D of 3,800 Lbs of PCB solids	
Total Non-Super Labor Hours 369.3						
5.10.15 PPE Usage/H&S Planning						
					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D		days	\$0.00	\$0	369.3 hours @ 8 hr/day = 46.2 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	11.5	days	\$9.00	\$104	369.3 hours @ 8 hr/day = 46.2 days @ 25% "D" days = 11.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	34.7	days	\$25.00	\$868	369.3 hours @ 8 hr/day = 46.2 days @ 75% "C" days = 34.7 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	9.2	hours	\$75.00	\$690	369.3 hours @ 2.5% hr/hr = 9.2 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$1,661		

5.10 AWTs (o/s east AWT) 5 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.10.16 Supervision						
					1 week for closure of 5 tanks	
Foreman	40	hours	\$65.00	\$2,600	1 week @ 40 hrs/wk = 40.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$2,600		
5.10.17 Certification						
					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	5.5	hours	\$130.00	\$715	369.3 hours @ 0.015 hr/hr = 5.5 hours	Engineer rate: 2011 3rd party quote
Clerical	5.5	hours	\$45.00	\$248	369.3 hours @ 0.015 hr/hr = 5.5 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$963		
(Subt: Assemb 5.10.15 - 5.10.17)				\$5,224		

5.10 AWTs (o/s east AWT) 5 tnks	Direct Cost	Total	Basic	\$157,435
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5.10 AWTS (o/s east AWT) 5 tnks			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$157,435	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$11,020	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$6,297	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$9,446	note: DEC uses 6%
Engineering During Construction	2.00%	\$3,149	note: DEC uses 2%
General Contractor Profit	6.00%	\$9,446	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$39,359	
Subt: AWTS (o/s eas AWT) 5 Tnks		\$196,794	
Plus Contingency	10.00%	\$19,679	CWM and DEC 10%
Tot: AWTS (o/s eas AWT) 5 Tnks		\$216,473	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.11 AWTS (i/s ww trt bldg) 6 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.11.1 Inventory Verification						
Laborer	6	hours	\$39.00	\$234	prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required 6 tanks @ 0.5 hour/tank = 3.0 hours @ 2 units/crew = 6.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$234		
(Subt: Assemb 5.11.1 - 5.11.1)				\$234	tanks: T-3007 & T-3008; T-3010A, T-3010B, T-3010C, T-3010D	
5.11.2 Onsite Aqueous Treatment						
Onsite Aqueous Treatment - Tanks	17080	gals	\$0.0453	\$774	mildly-contaminated wastes; assume pumped directly from tanks into AWTS 17080 gals	AWTS average cost for all wastewater
Subt - Onsite Aqueous Treatment				\$774		
(Subt: Assemb 5.11.2 - 5.11.2)				\$774	onsite treatment of tanks' waste liquids	
5.11.3 Steel Tank Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	6	tnks @			17,080 gallons: 1270 SF Tanks: 35.3 CF @ 490 Lb/CF = 17297 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	19	hours	\$39.00	\$741	1270 SF @ 200 SF/hour 6.35 hours @ 3 units/crew = 19.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	12.7	hours	\$45.00	\$572	1270 SF @ 200 SF/hour 6.35 hours @ 2 units/crew = 12.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	6.35	hours	\$84.09	\$534	1270 SF @ 200 SF/hour 6.35 hours @ 1 units/crew = 6.35 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	6.35	hours	\$34.40	\$218	1270 SF @ 200 SF/hour 6.35 hours @ 1 units/crew = 6.35 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	6.35	hours	\$2.47	\$16	1270 SF @ 200 SF/hour 6.35 hours @ 1 units/crew = 6.35 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	6.35	hours	\$30.03	\$191	1270 SF @ 200 SF/hour 6.35 hours @ 1 units/crew = 6.35 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	6.35	hours	\$86.31	\$548	1270 SF @ 200 SF/hour 6.35 hours @ 1 units/crew = 6.35 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	6.35	hours	\$5.41	\$34	1270 SF @ 200 SF/hour 6.35 hours @ 1 units/crew = 6.35 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$2,854	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5 Demolition of steel Tanks T-3007, T-3008, and T-3010A/B/C/D	T-3007 & T-3008 7,600 gallons each T-3010A/B/C/D - 470 gals each
5.11.4 FRP Tank Demolition						
					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	0	tnks @			0 gallons: 0 SF Tanks: 0 CF @ 245 Lb/CF = 0 Lbs	FRP Tanks only; facility estimates 245#/CF
Laborer	0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$0	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.11.5 Tank Piping Demolition						
					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	600	LF			6 tanks @ 100 LF/tank = 600 LF @ 4 Lb/LF = 2400 Lbs	Steel Tanks' Piping
Laborers	60	hours	\$39.00	\$2,340	600 LF @ 20 LF/hour 30.0 hours @ 2 units/crew = 60.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	30	hours	\$5.41	\$162	600 LF @ 20 LF/hour 30.0 hours @ 1 units/crew = 30.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$2,502	piping assumed to average 100 LF/tank	

5.11 AWTS (i/s ww trt bldg) 6 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.11.6 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	4	hours	\$39.00	\$156	2.0 pumps @ 1 pump/hr 2.0 hours @ 2 units/crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	2	hours	\$5.41	\$11	2.0 pumps @ 1 pump/hr 2.0 hours @ 1 units/crew = 2.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$167	<i>pump weight = 250# each; one pump per three tanks is estimated</i>	
5.11.7 Cartridge Filter Demolition					Demolition of Cartridge Filters including filter media for four units HF-24	
<i>Cartridge Filters including filters</i>	4	filters @			4 filters @ 4.0 CF/filter = 16 CF = 0.6 CY	
Laborers	4	hours	\$39.00	\$156	4.0 filters @ 2 filters/hr 2.0 hours @ 2 units/crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	2	hours	\$5.41	\$11	4.0 filters @ 2 filters/hr 2.0 hours @ 1 units/crew = 2.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Cartridge Filter Demolition				\$167	<i>filter cartridge (including filter) weight = 100#each</i>	
5.11.8 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.3	hours	\$39.00	\$12	3.8 CY @ 15 CY/hr = 0.3 hours @ 1 units/crew 0.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.3	hours	\$45.00	\$14	3.8 CY @ 15 CY/hr = 0.3 hours @ 1 units/crew = 0.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.3	hours	\$30.03	\$9	3.8 CY @ 15 CY/hr = 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.3	hours	\$5.20	\$2	3.8 CY @ 15 CY/hr = 0.3 hours @ 1 units/crew 0.3 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$36	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.11.9 Uni'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	12.1	TONS			3.8 CY debr + 15% kiln dust = 4.37 CY total total tonnage = 12.1 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	1.6	hours	\$39.00	\$62	12.1 tons @ 15 tons/hr @ 0.8 hours @ 2 units/crew = 1.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	2.4	hours	\$45.00	\$108	12.1 tons @ 15 tons/hr @ 0.8 hours @ 3 units/crew = 2.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.8	hours	\$19.18	\$15	12.1 tons @ 15 tons/hr @ 0.8 hours @ 1 units/crew = 0.8 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.8	hours	\$14.39	\$12	12.1 tons @ 15 tons/hr @ 0.8 hours @ 1 units/crew = 0.8 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.8	hours	\$329.70	\$264	12.1 tons @ 15 tons/hr @ 0.8 hours @ 1 units/crew = 0.8 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.8	hours	\$136.29	\$109	12.1 tons @ 15 tons/hr @ 0.8 hours @ 1 units/crew = 0.8 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0	tons	\$0.00	\$0	1.65 tons	
Cement Kiln Dust - Delivery Cost	0	loads	\$0.00	\$0	1.65 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	1.65	tons	\$48.00	\$79		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.15	units	\$1,000.00	\$150	4.37 CYs @ 30 CY/unit = 0.15 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.1	hours	\$19.02	\$2	4.37 CYs @ 30 CY/unit = 0.15 rolloffs @ 0.7 hours/rolloff = 0.1 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$801	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.11.10 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	385	miles	\$3.25	\$1,251	4.37 CY @ 30 CY/load = 0.15 loads (↑1.0) 385 miles/trip = 385.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	4.37	CY	\$337.50	\$1,475	4.37 CY @ 27 CF/CY = 100.5 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$2,726		
<i>(Subt: Assemb 5.11.3 - 5.11.10)</i>				\$9,253	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	

5.11 AWTS (i/s ww trt bldg) 6 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.11.11 Decon SCA (wash)						
					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	13.8	hours	\$39.00	\$538	1454 SF @ 105 SF/hr = 13.8 hours @ 1 pers/crew = 13.8 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	13.8	hours	\$4.04	\$56	1454 SF @ 105 SF/hr = 13.8 hours @ 1 unit/crew = 13.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	13.8	hours	\$3.41	\$47	1454 SF @ 105 SF/hr = 13.8 hours @ 1 unit/crew = 13.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$641		
5.11.12 Decon SCA (rinse)						
					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	13.8	hours	\$39.00	\$538	1454 SF @ 105 SF/hr = 13.8 hours @ 1 pers/crew = 13.8 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	13.8	hours	\$4.04	\$56	1454 SF @ 105 SF/hr = 13.8 hours @ 1 unit/crew = 13.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	13.8	hours	\$3.41	\$47	1454 SF @ 105 SF/hr = 13.8 hours @ 1 unit/crew = 13.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$641		
5.11.13 Decon Water Samp/Disp						
					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	727	gallons	\$0.0313	\$23	1454 SF @ 0.5 gal/sf/wa = 727 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$180		
5.11.14 PCB Wipe Samples						
					No TCLP analyses necessary according to site-wide closure plan	
Technician	2.3	hours	\$38.00	\$87	2.3 samp @ 0.5 hr/samp = 1.15 hours @ 2 pers/crew = 2.3 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	2.3	samp	\$83.33	\$192	1454 SF @ 625 SF/samp = 2.3 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$279		
(Subt: Assemb 5.11.11 - 5.11.14)				\$1,741	decontamination & sampling of SCA	
5.11.15 Offsite tran/disposal - Arsenic Media						
					Tanks T-3010A, T-3010B, T-3010C & T-3010D (Arsenic Removal Media Tanks)	3,000 lbs per tank = 12,000 lbs = 6 tons
Transportation - Arsenic Media	385.0	miles	\$3.25	\$1,251	6 tons @ 15 tons/load = 0.4 lds (↑1.0)@ 385 miles/load = 385.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Arsenic Media	6	tons	\$133.00	\$798	12,000 lbs = 6 tons	Current CWM 2011 third party rate
Subt - Offsite Tran/Regen - Arsenic Media				\$2,049		
(Subt: Assemb 5.11.145- 5.11.15)				\$2,049	offsite T&D of arsenic removal media as non-PCB waste	
5.11.16 Offsite tran/regen - Carbon						
					26666.6 Lbs of spent carbon from T-3007 & T-3008	
Offsite Transportation - Carbon	0	miles	\$3.50	\$0	20 tons @ 15 tons/load = 1.3 loads @ 232.0 miles/load = 0.0 miles	Included in regeneration cost
Offsite Regeneration - Carbon	26666.6	Lb	\$0.37	\$9,867	26666.6 Lbs	Current third party rate (Seimans)
Subt - Offsite Tran/Regen - Carbon				\$9,867		
(Subt: Assemb 5.11.16 - 5.11.16)				\$9,867	offsite regeneration of spent carbon	
Total Non-Super Labor Hours 143.3						
5.11.17 PPE Usage/H&S Planning						
					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0	days	\$0.00	\$0	143.3 hours @ 8 hr/day = 17.9 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	4.5	days	\$9.00	\$41	143.3 hours @ 8 hr/day = 17.9 days @ 25% "Mod C" days = 4.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	13.4	days	\$25.00	\$335	143.3 hours @ 8 hr/day = 17.9 days @ 75% "C" days = 13.4 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	3.6	hours	\$75.00	\$270	143.3 hours @ 2.5% hr/hr = 3.6 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$646		
5.11.18 Supervision						
					0.5 week for closure of 6 tanks	
Foreman	20	hours	\$65.00	\$1,300	0.5 week @ 40 hrs/wk = 20.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$1,300		

5.11 AWTS (i/s ww trt bldg) 6 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.11.19 Certification						
Engineer	2.2	hours	\$130.00	\$286	Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks 143.3 hours @ 0.015 hr/hr = 2.2 hours	Engineer rate: 2011 3rd party quote
Clerical	2.2	hours	\$45.00	\$99	143.3 hours @ 0.015 hr/hr = 2.2 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$385		
<i>(Subt: Assemb 5.11.17 - 5.11.19)</i>				\$2,331		
5.11 AWTS (i/s ww trt bldg) 6 tnks						
	Direct Cost	Total	Basic	\$26,248		

5.11 AWTS (i/s ww trt bldg) 6 tnks			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$26,248	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$1,837	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$1,050	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$1,575	note: DEC uses 6%
Engineering During Construction	2.00%	\$525	note: DEC uses 2%
General Contractor Profit	6.00%	\$1,575	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$6,562	
Subt: AWTS (i/s ww trt bl) 4 Tnks		\$32,810	
Plus Contingency	10.00%	\$3,281	CWM and DEC 10%
Tot: AWTS (i/s ww trt bld) 4 Tnks		\$36,091	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.12 AWTS (o/s sou wwtrt bl) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.12.1 Inventory Verification						
Laborer	1	hours	\$39.00	\$39	prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required 1 tanks @ 0.5 hour/tank = 0.5 hours @ 2 units/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$39		
(Subt: Assemb 5.12.1 - 5.12.1)				\$39	tank: T-52	
5.12.2 Offsite tran/regen - Carbon						
Offsite Transportation - Carbon	0	miles	\$3.50	\$0	13,333.3 Lbs of spent carbon stored in T-52 10 tons @ 15 tons/load = 0.67 loads @ 0 miles/load = 0 miles	Included in regeneration cost
Offsite Regeneration - Carbon	13333.3	Lb	\$0.37	\$4,933	13333.3 Lbs	Current third party rate (Seimans)
Subt - Offsite Tran/Regen - Carbon				\$4,933		
(Subt: Assemb 5.12.2 - 5.12.2)				\$4,933	offsite regeneration of spent carbon	
5.12.3 Steel Tank Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
No. of Tanks/Capacity/Area/Weight	1	tnks @			7600 gallons: 503 SF Tanks: 14 CF @ 490 Lb/CF = 6846 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	7.5	hours	\$39.00	\$293	503 SF @ 200 SF/hour 2.5 hours @ 3 units/crew = 7.5 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	5	hours	\$45.00	\$225	503 SF @ 200 SF/hour 2.5 hours @ 2 units/crew = 5.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	2.5	hours	\$84.09	\$210	503 SF @ 200 SF/hour 2.5 hours @ 1 units/crew = 2.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	2.5	hours	\$34.40	\$86	503 SF @ 200 SF/hour 2.5 hours @ 1 units/crew = 2.5 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	2.5	hours	\$2.47	\$6	503 SF @ 200 SF/hour 2.5 hours @ 1 units/crew = 2.5 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	2.5	hours	\$30.03	\$75	503 SF @ 200 SF/hour 2.5 hours @ 1 units/crew = 2.5 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	2.5	hours	\$86.31	\$216	503 SF @ 200 SF/hour 2.5 hours @ 1 units/crew = 2.5 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	2.5	hours	\$5.41	\$14	503 SF @ 200 SF/hour 2.5 hours @ 1 units/crew = 2.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$1,124	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.12.4 FRP Tank Demolition						
					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
No. of Tanks/Capacity/Area/Weight	0	tnks @			0 gallons: 0 SF Tanks: 0 CF @ 245 Lb/CF = 0 Lbs	FRP Tanks only; facility estimates 245#/CF
Laborer	0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$0	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.12.5 Tank Piping Demolition						
					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
Estimated Piping Length	100	LF			1 tanks @ 100 LF/tank = 100 LF @ 4 Lb/LF = 400 Lbs	combined Steel and FRP Tanks' Piping
Laborers	10	hours	\$39.00	\$390	100 LF @ 20 LF/hour 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5	hours	\$5.41	\$27	100 LF @ 20 LF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$417	in the absence of facility data, piping assumed to average 100 LF/tank	

5.12 AWTS (o/s sou wwtrt bl) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.12.6 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	1	hours	\$39.00	\$39	0.5 pumps @ 1 pump/hr 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	0.5	hours	\$5.41	\$3	0.5 pumps @ 1 pump/hr 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$42	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.12.7 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.1	hours	\$39.00	\$4	1.0 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.1	hours	\$45.00	\$5	1.0 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.1	hours	\$30.03	\$3	1.0 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.1	hours	\$5.20	\$1	1.0 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$12	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.12.8 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	3.8	TONS			1.0 CY debr + 15% kiln dust = 1.15 CY total total tonnage = 3.8 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.5	hours	\$39.00	\$20	3.8 tons @ 15 tons/hr @ 0.3 hours @ 2 units/crew = 0.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.8	hours	\$45.00	\$36	3.8 tons @ 15 tons/hr @ 0.3 hours @ 3 units/crew = 0.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.3	hours	\$19.18	\$6	3.8 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.3	hours	\$14.39	\$4	3.8 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.3	hours	\$329.70	\$99	3.8 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.3	hours	\$136.29	\$41	3.8 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost		tons	\$0.00	\$0	0.1 tons	
Cement Kiln Dust - Delivery Cost		loads	\$0.00	\$0	0.1 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.1	tons	\$48.00	\$5		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0	units	\$1,000.00	\$0	1.1 CYs @ 30 CY/unit = 0.0 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0	hours	\$19.02	\$0	1.1 CYs @ 30 CY/unit = 0.0 rolloffs @ 0.3 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$210	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.12.9 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	385	miles	\$3.25	\$1,251	1.1 CY @ 30 CY/load = 0.0 loads @ 385 miles/trip = 385 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	1.1	CY	\$337.50	\$371	1.1 CY @ 27 CF/CY = 31.0 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$1,623		
<i>(Subt: Assemb 5.12.3 - 5.12.9)</i>				\$3,428	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	
5.12.10 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	5.8	hours	\$39.00	\$226	612 SF @ 105 SF/hr = 5.8 hours @ 1 pers/crew = 5.8 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	5.8	hours	\$4.04	\$23	612 SF @ 105 SF/hr = 5.8 hours @ 1 unit/crew = 5.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	5.8	hours	\$3.41	\$20	612 SF @ 105 SF/hr = 5.8 hours @ 1 unit/crew = 5.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$269		
5.12.11 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	5.8	hours	\$39.00	\$226	612 SF @ 105 SF/hr = 5.8 hours @ 1 pers/crew = 5.8 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	5.8	hours	\$4.04	\$23	612 SF @ 105 SF/hr = 5.8 hours @ 1 unit/crew = 5.8 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	5.8	hours	\$3.41	\$20	612 SF @ 105 SF/hr = 5.8 hours @ 1 unit/crew = 5.8 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$269		

5.12 AWTS (o/s sou wwtrt bl) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.12.12 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	306	gal	\$0.0313	\$10	612 SF @ 0.5 gal/sf/wa = 306 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Disp				\$167		
5.12.13 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	1	hours	\$38.00	\$38	1.0 samp @ 0.5 hr/samp = 0.5 hours @ 2 pers/crew = 1.0 hours	technician rate 2011 3rd party quote
TCLP (Metals?VOCs/Semi-VOCs)	0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	1	samp	\$83.33	\$83	612 SF @ 625 SF/samp = 1.0 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$121		
(Subt: Assemb 5.12.10 - 5.12.13)				\$827	decontamination & sampling of SCA	

Total Non-Super Labor Hours 39.7

5.12.14 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0	days	\$0.00	\$0	51.5 hours @ 8 hr/day = 6.4 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	1.6	days	\$9.00	\$14	51.5 hours @ 8 hr/day = 6.4 days @ 25% "Mod C" days = 1.6 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	4.8	days	\$25.00	\$120	51.5 hours @ 8 hr/day = 6.4 days @ 75% "C" days = 4.8 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	1.3	hours	\$75.00	\$98	51.5 hours @ 2.5% hr/hr = 1.3 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$232		
5.12.15 Supervision					0.2 week for closure of 1 tanks	
Foreman	8	hours	\$65.00	\$520	0.2 week @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520		
5.12.16 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.8	hours	\$130.00	\$104	51.5 hours @ 0.015 hr/hr = 0.8 hours	Engineer rate: 2011 3rd party quote
Clerical	0.8	hours	\$45.00	\$36	51.5 hours @ 0.015 hr/hr = 0.8 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$140		
(Subt: Assemb 5.12.14 - 5.12.16)				\$892		

5.12 AWTS (o/s sou wwtrt bl) 1 tk	Direct Cost	Total	Basic	\$10,119
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5.12 AWTS (o/s sou wwtrt bl) 1 tk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$10,119	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$708	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$405	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$607	note: DEC uses 6%
Engineering During Construction	2.00%	\$202	note: DEC uses 2%
General Contractor Profit	6.00%	\$607	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$2,530	
Subt: AWTS (o/s eas ww tr) 4 tks		\$12,649	
Plus Contingency	10.00%	\$1,265	CWM and DEC 10%
Tot: AWTS (o/s eas ww tr) 4 tnks		\$13,913	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.13 AWTS (o/s east ww trt) 4 tks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.13.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	4	hours	\$39.00	\$156	4 tanks @ 0.5 hour/tank = 2.0 hours @ 2 units/crew = 4.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$156		
(Subt: Assemb 5.13.1 - 5.13.1)				\$156	tanks: T-3001, T-3002, T-3003, and T-3009	
5.13.2 Onsite Aqueous Treatment						
					highly-contaminated liquid waste; assume pumped directly from tanks into AWTS	
Onsite Aqueous Treatment - Tanks	9365	gals	\$0.0452	\$423	9365 gals	AWTS average cost for all wastewater
Subt - Onsite Aqueous Treatment				\$423		
(Subt: Assemb 5.13.2 - 5.13.2)				\$423	onsite treatment of tanks' waste liquids	
5.13.3 Steel Tank Demolition						
					prod'n rate = 200 SF/hr; 1 CF debris per 36 sf tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	1	<i>tnks @</i>			<i>6000 gallons: 1006 SF Tanks: 28 CF @ 490 Lb/CF = 13693 Lbs</i>	<i>Steel Tanks only; estimate 490#/CF</i>
Laborer	15.1	hours	\$39.00	\$589	1006 SF @ 200 SF/hour 5.0 hours @ 3 units/crew = 15.1 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	10.1	hours	\$45.00	\$455	1006 SF @ 200 SF/hour 5.0 hours @ 2 units/crew = 10.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	5	hours	\$84.09	\$420	1006 SF @ 200 SF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	5	hours	\$34.40	\$172	1006 SF @ 200 SF/hour 5.0 hours @ 1 units/crew = 5.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	5	hours	\$2.47	\$12	1006 SF @ 200 SF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	5	hours	\$30.03	\$150	1006 SF @ 200 SF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	5	hours	\$86.31	\$432	1006 SF @ 200 SF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	5	hours	\$5.41	\$27	1006 SF @ 200 SF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$2,257	tank areas based u	
5.13.4 FRP Tank Demolition						
					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	3	<i>tnks @</i>			<i>3365 gallons: 440 SF Tanks: 12 CF @ 245 Lb/CF = 2994 Lbs</i>	<i>FRP Tanks only; facility estimates 245#/CF</i>
Laborer	6.6	hours	\$39.00	\$257	440 SF @ 200 SF/hour 2.2 hours @ 3 units/crew = 6.6 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	4.4	hours	\$45.00	\$198	440 SF @ 200 SF/hour 2.2 hours @ 2 units/crew = 4.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	2.2	hours	\$84.09	\$185	440 SF @ 200 SF/hour 2.2 hours @ 1 units/crew = 2.2 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	2.2	hours	\$34.40	\$76	440 SF @ 200 SF/hour 2.2 hours @ 1 units/crew = 2.2 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	2.2	hours	\$2.47	\$5	440 SF @ 200 SF/hour 2.2 hours @ 1 units/crew = 2.2 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	2.2	hours	\$30.03	\$66	440 SF @ 200 SF/hour 2.2 hours @ 1 units/crew = 2.2 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	2.2	hours	\$86.31	\$190	440 SF @ 200 SF/hour 2.2 hours @ 1 units/crew = 2.2 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0	hours	\$5.41	\$0	440 SF @ 200 SF/hour 2.2 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$977	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.13.5 Tank Piping Demolition						
					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	400	<i>LF</i>			<i>4 tanks @ 100 LF/tank = 400 LF @ 4 Lb/LF = 1600 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	40	hours	\$39.00	\$1,560	400 LF @ 20 LF/hour 20.0 hours @ 2 units/crew = 40.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	20	hours	\$5.41	\$108	400 LF @ 20 LF/hour 20.0 hours @ 1 units/crew = 20.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$1,668	in the absence of f	

5.13 AWTS (o/s east ww trt) 4 tks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.13.6 Tank Pump Demolition					prod'n rate = 1 pump/hr assume 0.5 pumps/tank	
Laborers	4	hours	\$39.00	\$156	2.0 pumps @ 1 pump/hr 2.0 hours @ 2 units/crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	2	hours	\$5.41	\$11	2.0 pumps @ 1 pump/hr 2.0 hours @ 1 units/crew = 2.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$167	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.13.7 Load Tank Demo Debris					production rate = 15 CY/hour;	
Laborer	0.2	hours	\$39.00	\$8	3.4 CY @ 15 CY/hr = 0.2 hours @ 1 units/crew 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.2	hours	\$45.00	\$9	3.4 CY @ 15 CY/hr = 0.2 hours @ 1 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.2	hours	\$30.03	\$6	3.4 CY @ 15 CY/hr = 0.2 hours @ 1 units/crew = 0.2 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.2	hours	\$5.20	\$1	3.4 CY @ 15 CY/hr = 0.2 hours @ 1 units/crew 0.2 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$24	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.13.8 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	9.9	TONS			3.4 CY debr + 15% kiln dust = 3.93 CY total total tonnage = 9.9 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	1.3	hours	\$39.00	\$51	9.9 tons @ 15 tons/hr @ 0.7 hours @ 2 units/crew = 1.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	2	hours	\$45.00	\$90	9.9 tons @ 15 tons/hr @ 0.7 hours @ 3 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.7	hours	\$19.18	\$13	9.9 tons @ 15 tons/hr @ 0.7 hours @ 1 units/crew = 0.7 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.7	hours	\$14.39	\$10	9.9 tons @ 15 tons/hr @ 0.7 hours @ 1 units/crew = 0.7 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.7	hours	\$329.70	\$231	9.9 tons @ 15 tons/hr @ 0.7 hours @ 1 units/crew = 0.7 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.7	hours	\$136.29	\$95	9.9 tons @ 15 tons/hr @ 0.7 hours @ 1 units/crew = 0.7 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost		tons	\$0.00	\$0	0.5 tons	
Cement Kiln Dust - Delivery Cost		loads	\$0.00	\$0	0.5 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.5	tons	\$48.00	\$24		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.1	units	\$1,000.00	\$100	3.9 CYs @ 30 CY/unit = 0.1 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.1	hours	\$19.02	\$2	3.9 CYs @ 30 CY/unit = 0.1 rolloffs @ 0.7 hours/rolloff = 0.1 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$616	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.13.9 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	385	miles	\$3.25	\$1,251	3.9 CY @ 30 CY/load = 0.1 loads @ 385 miles/trip = 385 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	3.9	CY	\$337.50	\$1,316	3.9 CY @ 27 CF/CY = 106.0 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$2,568		
<i>(Subt: Assemb 5.13.3 - 5.13.9)</i>				\$8,277	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	
5.13.10 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	3.9	hours	\$39.00	\$152	411 SF @ 105 SF/hr = 3.9 hours @ 1 pers/crew = 3.9 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	3.9	hours	\$4.04	\$16	411 SF @ 105 SF/hr = 3.9 hours @ 1 unit/crew = 3.9 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	3.9	hours	\$3.41	\$13	411 SF @ 105 SF/hr = 3.9 hours @ 1 unit/crew = 3.9 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$181		

5.13 AWTS (o/s east ww trt) 4 tks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.13.11 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	3.9	hours	\$39.00	\$152	411 SF @ 105 SF/hr = 3.9 hours @ 1 pers/crew = 3.9 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	3.9	hours	\$4.04	\$16	411 SF @ 105 SF/hr = 3.9 hours @ 1 unit/crew = 3.9 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	3.9	hours	\$3.41	\$13	411 SF @ 105 SF/hr = 3.9 hours @ 1 unit/crew = 3.9 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$181		
5.13.12 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	205.5	gal	\$0.0313	\$6	411 SF @ 0.5 gal/sf/wa = 205.5 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$164		
5.13.13 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	0.7	hours	\$38.00	\$27	0.7 samp @ 0.5 hr/samp = 0.35 hours @ 2 pers/crew = 0.7 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	0.7	samp	\$83.33	\$58	411 SF @ 625 SF/samp = 0.7 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$85		
(Subt: Assemb 5.13.10 - 5.13.13)				\$611	decontamination & sampling of SCA	

Total Non-Super Labor Hours 97.5

5.13.14 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0	days	\$0.00	\$0	97.5 hours @ 8 hr/day = 12.2 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	3	days	\$9.00	\$27	97.5 hours @ 8 hr/day = 12.2 days @ 25% "Mod C" days = 3.0 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	9.2	days	\$25.00	\$230	97.5 hours @ 8 hr/day = 12.2 days @ 75% "C" days = 9.2 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	2.4	hours	\$75.00	\$180	97.5 hours @ 2.5% hr/hr = 2.4 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$437		
5.13.15 Supervision					0.4 week for closure of 4 tanks	
Foreman	16	hours	\$65.00	\$1,040	0.4 week @ 40 hrs/wk = 16.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$1,040		
5.13.16 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	1.5	hours	\$130.00	\$195	97.5 hours @ 0.015 hr/hr = 1.5 hours	Engineer rate: 2011 3rd party quote
Clerical	1.5	hours	\$45.00	\$68	97.5 hours @ 0.015 hr/hr = 1.5 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$263		
(Subt: Assemb 5.13.14 - 5.13.16)				\$1,740		

5.13 AWTS (o/s east ww trt) 4 tks	Direct Cost	Total	Basic	\$11,207
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5.13 AWTS (o/s east ww trt) 4 tks			
Total Cost Summary - Basic Opt.			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$11,207	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$784	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$448	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$672	note: DEC uses 6%
Engineering During Construction	2.00%	\$224	note: DEC uses 2%
General Contractor Profit	6.00%	\$672	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$2,802	
Subt: AWTS (o/s eas ww tr) 4 tks		\$14,009	
Plus Contingency	10.00%	\$1,401	CWM and DEC 10%
Tot: AWTS (o/s eas ww tr) 4 tnks		\$15,409	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.14 AWTS (nor SLF 1 - 6) 2 tanks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.14.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	2.0	hours	\$39.00	\$78	2 tanks @ 0.5 hour/tank = 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$78		
(Subt: Assemb 5.14.1 - 5.14.1)				\$78	tanks: T-105 and T-130	
5.14.2 Empty Tanks T-105 & T-130						
					production rate = 1,650 gals/hr;	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	5.3	hours	\$6.31	\$33	8732 gals @ 1650 gals/hr = 5.3 hours @ 1 unit/crew = 5.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanks into Trailer				\$33		
5.14.3 Transport Tanker(s) Onsite						
					production rate = 0.5 hours for onsite transport	
Road Tractor (4 x 2, 30-ton)	0.8	hours	\$32.45	\$26	8732 gals @ 5500 gals/load = 1.6 loads @ 0.5 hrs/trip = 0.8 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.8	hours	\$6.31	\$5	8732 gals @ 5500 gals/load = 1.6 hours @ 0.5 hrs/trip = 0.8 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transport Tanker(s) Onsite				\$31		
5.14.4 Empty Tanker(s)						
					production rate = 1,650 gals/hr;	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	5.3	hours	\$6.31	\$33	8732 gals @ 1650 gals/hr = 5.3 hours @ 1 unit/crew = 5.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanker(s)				\$33		
(Subt: Assemb 5.14.2 - 5.14.4)				\$98	empty and transport onsite contents from tanks T-105 and T-130	
5.14.5 Onsite Aqueous Treatment						
					highly-contaminated liquid wastes.	
Onsite Aqueous Treatment - Tanks	8732.0	gals	\$1.8244	\$15,931	8732 gals	AWTS treatment of SLF 1-6 leachate
Subt - Onsite Aqueous Treatment				\$15,931		
(Subt: Assemb 5.14.5 - 5.14.5)				\$15,931	onsite treatment of tanks' waste liquids	
5.14.6 Steel Tank Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
No. of Tanks/Capacity/Area/Weight	2.0	tnks @			8732 gallons: 748 SF Tanks: 21 CF @ 490 Lb/CF = 10181 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	11.2	hours	\$39.00	\$437	748 SF @ 200 SF/hour 3.7 hours @ 3 units/crew = 11.2 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	7.5	hours	\$45.00	\$338	748 SF @ 200 SF/hour 3.7 hours @ 2 units/crew = 7.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	3.7	hours	\$84.09	\$311	748 SF @ 200 SF/hour 3.7 hours @ 1 units/crew = 3.7 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	3.7	hours	\$34.40	\$127	748 SF @ 200 SF/hour 3.7 hours @ 1 units/crew = 3.7 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	3.7	hours	\$2.47	\$9	748 SF @ 200 SF/hour 3.7 hours @ 1 units/crew = 3.7 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	3.7	hours	\$30.03	\$111	748 SF @ 200 SF/hour 3.7 hours @ 1 units/crew = 3.7 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	3.7	hours	\$86.31	\$319	748 SF @ 200 SF/hour 3.7 hours @ 1 units/crew = 3.7 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	3.7	hours	\$5.41	\$20	748 SF @ 200 SF/hour 3.7 hours @ 1 units/crew = 3.7 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition	748.0	SF @		\$1,672	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	

5.14 AWTS (nor SLF 1 - 6) 2 tanks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.14.7 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	0.0	<i>tnks @</i>			<i>0 gallons: 0 SF Tanks: 0 CF @ 245 Lb/CF = 0 Lbs</i>	<i>FRP Tanks only; facility estimates 245#/CF</i>
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$0	<i>tank areas based u</i>	
5.14.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	200.0	<i>LF</i>			<i>2 tanks @ 100 LF/tank = 200 LF @ 4 Lb/LF = 800 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	20.0	hours	\$39.00	\$780	200 LF @ 20 LF/hour 10.0 hours @ 2 units/crew = 20.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	10.0	hours	\$5.41	\$54	200 LF @ 20 LF/hour 10.0 hours @ 1 units/crew = 10.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$834	<i>in the absence of f</i>	
5.14.9 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	2.0	hours	\$39.00	\$78	1.0 pumps @ 1 pump/hr 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	1.0	hours	\$5.41	\$5	1.0 pumps @ 1 pump/hr 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$83	<i>pump weight = 250# each; in the absence of facility data, one pump per two tanks is estimated</i>	
5.14.10 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.1	hours	\$39.00	\$4	1.7 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.1	hours	\$45.00	\$5	1.7 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.1	hours	\$30.03	\$3	1.7 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.1	hours	\$5.20	\$1	1.7 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$12	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	

5.14 AWTS (nor SLF 1 - 6) 2 tanks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.14.11 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	5.9	TONS			1.7 CY debr + 15% kiln dust = 1.99 CY total total tonnage = 5.9 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.8	hours	\$39.00	\$31	5.9 tons @ 15 tons/hr @ 0.4 hours @ 2 units/crew = 0.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.2	hours	\$45.00	\$54	5.9 tons @ 15 tons/hr @ 0.4 hours @ 3 units/crew = 1.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.4	hours	\$19.18	\$8	5.9 tons @ 15 tons/hr @ 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.4	hours	\$14.39	\$6	5.9 tons @ 15 tons/hr @ 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.4	hours	\$329.70	\$132	5.9 tons @ 15 tons/hr @ 0.4 hours @ 1 units/crew = 0.4 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.4	hours	\$136.29	\$55	5.9 tons @ 15 tons/hr @ 0.4 hours @ 1 units/crew = 0.4 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost		tons	\$0.00	\$0	0.3 tons	
Cement Kiln Dust - Delivery Cost		loads	\$0.00	\$0	0.3 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.3	tons	\$48.00	\$14		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.1	units	\$1,000.00	\$100	2.0 CYs @ 30 CY/unit = 0.1 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.0	hours	\$19.02	\$0	2.0 CYs @ 30 CY/unit = 0.1 rolloffs @ 0.4 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$399	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.14.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	385.0	miles	\$3.25	\$1,251	2.0 CY @ 30 CY/load = 0.1 loads @ 385 miles/trip = 385 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	2.0	CF	\$337.50	\$675	2.0 CY @ 27 CF/CY = 53.8 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$1,926		
(Subt: Assemb 5.14.6 - 5.14.12)				\$4,927	tank/piping/pump demolition, and offsite transportation & disposal	
5.14.13 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	11.9	hours	\$39.00	\$464	1254 SF @ 105 SF/hr = 11.9 hours @ 1 pers/crew = 11.9 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	11.9	hours	\$4.04	\$48	1254 SF @ 105 SF/hr = 11.9 hours @ 1 unit/crew = 11.9 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	11.9	hours	\$3.41	\$41	1254 SF @ 105 SF/hr = 11.9 hours @ 1 unit/crew = 11.9 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$553		
5.14.14 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	11.9	hours	\$39.00	\$464	1254 SF @ 105 SF/hr = 11.9 hours @ 1 pers/crew = 11.9 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	11.9	hours	\$4.04	\$48	1254 SF @ 105 SF/hr = 11.9 hours @ 1 unit/crew = 11.9 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	11.9	hours	\$3.41	\$41	1254 SF @ 105 SF/hr = 11.9 hours @ 1 unit/crew = 11.9 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$553		
5.14.15 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	627.0	gal	\$0.0313	\$20	1254 SF @ 2.4 gal/sf/wa = 627 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$177		

5.14 AWTS (nor SLF 1 - 6) 2 tanks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.14.16 PCB Wipe Samples						
					No TCLP analyses necessary according to site-wide closure plan	
Technician	2.0	hours	\$38.00	\$76	2.0 samp @ 0.5 hr/samp = 1.0 hours @ 2 pers/crew = 2.0 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	2.0	samp	\$83.33	\$167	1254 SF @ 625 SF/samp = 2.0 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$243		
(Subt: Assemb 5.14.13 - 5.14.16)				\$1,525	decontamination & sampling of SCA	

Total Non-Super Labor Hours 71.8

5.14.17 PPE Usage/H&S Planning						
					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	71.8 hours @ 8 hr/day = 9.0 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	2.2	days	\$9.00	\$20	71.8 hours @ 8 hr/day = 9.0 days @ 25% "D" days = 2.2 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	6.8	days	\$25.00	\$170	71.8 hours @ 8 hr/day = 9.0 days @ 75% "C" days = 6.8 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	1.8	hours	\$75.00	\$135	71.8 hours @ 2.5% hr/hr = 1.8 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$325		
5.14.18 Supervision						
					0.2 week for closure of 2 tanks	
Foreman	8.0	hours	\$65.00	\$520	0.2 week @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520		
5.14.19 Certification						
					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	1.1	hours	\$130.00	\$143	71.8 hours @ 0.015 hr/hr = 1.1 hours	Engineer rate: 2011 3rd party quote
Clerical	1.1	hours	\$45.00	\$50	71.8 hours @ 0.015 hr/hr = 1.1 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$193		
(Subt: Assemb 5.14.17 - 5.14.19)				\$1,037		

5.14 AWTS (nor SLF 1 - 6) 2 tanks	Direct Cost	Total	Basic	\$23,596
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5.14 AWTS (nor SLF 1 - 6) 2 tanks			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$23,596	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$1,652	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$944	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$1,416	note: DEC uses 6%
Engineering During Construction	2.00%	\$472	note: DEC uses 2%
General Contractor Profit	6.00%	\$1,416	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$5,899	
Subt: AWTS (nor SLF 1 - 6) 2 tnks		\$29,495	
Plus Contingency	10.00%	\$2,950	CWM and DEC 10%
Tot: AWTS (nor SLF 1 - 6) 2 tnks		\$32,445	

5.15 AWTS (i/s betw slf 7&11) 3 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.15.1 Inventory Verification						
					prod'n rates: 50 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	3.0	hours	\$39.00	\$117	3 tanks @ 0.5 hour/tank = 1.5 hours @ 2 units/crew = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$117		
(Subt: Assemb 5.15.1 - 5.15.1)				\$117	tanks: T-107, T-108, and T-111	
5.15.2 Empty T-107, T-108, & T-111						
					production rate = 1,650 gals/hr;	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gal)	6.5	hours	\$6.31	\$41	10700 gals @ 1650 SF/hr = 6.5 hours @ 1 unit/crew = 6.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanks' Contents				\$41		
5.15.3 Transport Tanker(s) Onsite						
					production rate = 0.5 hours for onsite transport	
Road Tractor (4 x 2, 30-ton)	1.0	hours	\$32.45	\$32	10700 gals @ 5500 gals/load = 1.9 loads @ 0.5 hrs/trip = 1.0 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	samp	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gal)	1.0	gal	\$6.31	\$6	10700 gals @ 5500 gals/load = 1.9 loads @ 0.5 hrs/trip = 1.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Onsite Transport				\$39		
5.15.4 Empty Tanker(s)						
					production rate = 1,650 gals/hr;	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	samp	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gal)	6.5	samp	\$6.31	\$41	10700 gals @ 1650 SF/hr = 6.5 hours @ 1 unit/crew = 6.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tankers				\$41		
(Subt: Assemb 5.15.2 - 5.15.4)				\$121	empty tanks' contents and transport onsite to AWTS	
5.15.5 Onsite Aqueous Treatment						
					highly-contaminated liquid waste stream	
Onsite Aqueous Treatment - Tanks - SLF-7	2675.0	gals	\$0.2295	\$614	10700 gals @ 25% for SLF-7 = 2675 gals	AWTS treatment costs @ \$0.2295
Onsite Aqueous Treatment - Tanks - SLF-11	8025.0	gals	\$0.3532	\$2,834	10700 gals @ 75% for SLF-11 = 8025 gals	AWTS treatment costs @ \$0.3532
Subt - Onsite Aqueous Treatment				\$3,448		
(Subt: Assemb 5.15.5 - 5.15.5)				\$3,448		
5.15.6 Steel Tank Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
No. of Tanks/Capacity/Area/Weight	0.0	tnks @			0 gallons: 0 SF Tanks: 0 CF @ 490 Lb/CF = 0 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$0	tank areas based u	

5.15 AWTS (i/s betw slf 7&11) 3 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.15.7 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	3.0	tnks @			10700 gallons: 552 SF Tanks: 15 CF @ 245 Lb/CF = 3757 Lbs	FRP Tanks only; facility estimates 245#/CF
Laborer	8.3	hours	\$39.00	\$324	552 SF @ 200 SF/hour 2.8 hours @ 3 units/crew = 8.3 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	5.5	hours	\$45.00	\$248	552 SF @ 200 SF/hour 2.8 hours @ 2 units/crew = 5.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	2.8	hours	\$84.09	\$235	552 SF @ 200 SF/hour 2.8 hours @ 1 units/crew = 2.8 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	2.8	hours	\$34.40	\$96	552 SF @ 200 SF/hour 2.8 hours @ 1 units/crew = 2.8 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	2.8	hours	\$2.47	\$7	552 SF @ 200 SF/hour 2.8 hours @ 1 units/crew = 2.8 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	2.8	hours	\$30.03	\$84	552 SF @ 200 SF/hour 2.8 hours @ 1 units/crew = 2.8 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	2.8	hours	\$86.31	\$242	552 SF @ 200 SF/hour 2.8 hours @ 1 units/crew = 2.8 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	552 SF @ 200 SF/hour 2.8 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$1,236	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.15.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	300.0	LF			3 tanks @ 100 LF/tank = 300 LF @ 4 Lb/LF = 1200 Lbs	combined Steel and FRP Tanks' Piping
Laborers	30.0	hours	\$39.00	\$1,170	300 LF @ 20 LF/hour 15.0 hours @ 2 units/crew = 30.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	15.0	hours	\$5.41	\$81	300 LF @ 20 LF/hour 15.0 hours @ 1 units/crew = 15.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$1,251	in the absence of f	
5.15.9 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	3.0	hours	\$39.00	\$117	1.5 pumps @ 1 pump/hr 1.5 hours @ 2 units/crew = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	1.5	hours	\$5.41	\$8	1.5 pumps @ 1 pump/hr 1.5 hours @ 1 units/crew = 1.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$125	pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated	
5.15.10 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.1	hours	\$39.00	\$4	2.0 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.1	hours	\$45.00	\$5	2.0 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.1	hours	\$30.03	\$3	2.0 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.1	hours	\$5.20	\$1	2.0 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$12	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	

5.15 AWTS (i/s betw slf 7&11) 3 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.15.11 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	3.0	TONS			2.0 CY debr + 15% kiln dust = 2.31 CY total total tonnage = 3.0 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.4	hours	\$39.00	\$16	3.0 tons @ 15 tons/hr @ 0.2 hours @ 2 units/crew = 0.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.6	hours	\$45.00	\$27	3.0 tons @ 15 tons/hr @ 0.2 hours @ 3 units/crew = 0.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.2	hours	\$19.18	\$4	3.0 tons @ 15 tons/hr @ 0.2 hours @ 1 units/crew = 0.2 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.2	hours	\$14.39	\$3	3.0 tons @ 15 tons/hr @ 0.2 hours @ 1 units/crew = 0.2 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.2	hours	\$329.70	\$66	3.0 tons @ 15 tons/hr @ 0.2 hours @ 1 units/crew = 0.2 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.2	hours	\$136.29	\$27	3.0 tons @ 15 tons/hr @ 0.2 hours @ 1 units/crew = 0.2 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.3 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.3 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.3	tons	\$48.00	\$14		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.1	units	\$1,000.00	\$100	2.3 CYs @ 30 CY/unit = 0.1 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.0	hours	\$19.02	\$0	2.3 CYs @ 30 CY/unit = 0.1 rolloffs @ 0.2 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$257	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.15.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	385.0	miles	\$3.25	\$1,251	2.3 CY @ 30 CY/load = 0.1 loads @ 385 miles/trip = 385.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	2.3	CY	\$337.50	\$776	2.3 CY @ 27 CF/CY = 62.5 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$2,028		
<i>(Subt: Assemb 5.15.6 - 5.15.12)</i>				\$4,908	tank/piping/pump demolition, and offsite transportation & disposal	
5.15.13 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	11.7	hours	\$39.00	\$456	1229 SF @ 105 SF/hr = 11.7 hours @ 1 pers/crew = 11.7 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	11.7	hours	\$4.04	\$47	1229 SF @ 105 SF/hr = 11.7 hours @ 1 unit/crew = 11.7 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	11.7	hours	\$3.41	\$40	1229 SF @ 105 SF/hr = 11.7 hours @ 1 unit/crew = 11.7 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$543		
5.15.14 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	11.7	hours	\$39.00	\$456	1229 SF @ 105 SF/hr = 11.7 hours @ 1 pers/crew = 11.7 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	11.7	hours	\$4.04	\$47	1229 SF @ 105 SF/hr = 11.7 hours @ 1 unit/crew = 11.7 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	11.7	hours	\$3.41	\$40	1229 SF @ 105 SF/hr = 11.7 hours @ 1 unit/crew = 11.7 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$543		
5.15.15 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	614.5	gal	\$0.0313	\$19	1229 SF @ 0.5 gal/sf/wa = 614.5 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$177		

5.15 AWTS (i/s betw slf 7&11) 3 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.15.16 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	2.0	hours	\$38.00	\$76	2.0 samp @ 0.5 hr/samp = 1.0 hours @ 2 pers/crew = 2.0 hours	technician rate 2011 3rd party quote
TCLP VOC & Metals Analysis	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8080)	2.0	samp	\$83.33	\$167	1229 SF @ 625 SF/samp = 2.0 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemb 5.15.13 - 5.15.16)				\$243		
				\$1,506	decontamination & sampling of SCA	

Total Non-Super Labor Hours 77.5

5.15.17 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	77.5 hours @ 8 hr/day = 9.7 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	2.4	days	\$9.00	\$22	77.5 hours @ 8 hr/day = 9.7 days @ 25% "Mod C" days = 2.4 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	7.3	days	\$25.00	\$183	77.5 hours @ 8 hr/day = 9.7 days @ 75% "C" days = 7.3 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	1.9	hours	\$75.00	\$143	77.5 hours @ 2.5% hr/hr = 1.9 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$347		
5.15.18 Supervision					0.6 week for closure of 3 tanks	
Foreman	24.0	hours	\$65.00	\$1,560	0.6 week @ 40 hrs/wk = 24.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$1,560		
5.15.19 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	1.2	hours	\$130.00	\$156	77.5 hours @ 0.015 hr/hr = 1.2 hours	Engineer rate: 2011 3rd party quote
Clerical	1.2	hours	\$45.00	\$54	77.5 hours @ 0.015 hr/hr = 1.2 hours	Clerical rate: 2011 3rd party quote
Subtotal Certification (Subt: Assemb 5.15.17 - 5.15.19)				\$210		
				\$2,117		

5.15 AWTS (i/s betw slf 7&11) 3 tk	Direct Cost	Total	Basic	\$12,217
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5.15 AWTS (i/s betw slf 7&11) 3 tk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$12,217	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$855	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$489	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$733	note: DEC uses 6%
Engineering During Construction	2.00%	\$244	note: DEC uses 2%
General Contractor Profit	6.00%	\$733	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$3,054	
Subt: AWTS (i/s betw slf 7&11) 3 t		\$15,271	
Plus Contingency	10.00%	\$1,527	CWM and DEC 10%
Tot: AWTS (i/s betw slf 7&11) 3 tk		\$16,799	

Cost References:

"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.16 AWTS (i/s A n/w SLF 10) 2 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.16.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	2.0	hours	\$39.00	\$78	2 tanks @ 0.5 hour/tank = 1.0 hours @ 2 units/crew = 2.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$78		
(Subt: Assemb 5.16.1 - 5.16.1)				\$78	tanks: T-109 and T-110	
5.16.2 Empty T-109 & T-110						
					production rate = 1,650 gals/hr; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	HASP req's two: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	2.0	hours	\$6.31	\$13	3350 gals @ 1650 gals/hr = 2.0 hours @ 1 unit/crew = 2.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanks				\$13		
5.16.3 Transport Tanker(s) Onsite						
					production rate = 0.5 hours/trip for onsite transport	
Road Tractor (4 x 2, 30-ton)	0.3	hours	\$32.45	\$10	3350 gals @ 5500 gals/load = 0.6 loads @ 0.5 hrs/trip = 0.3 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.3	hours	\$6.31	\$2	3350 gals @ 5500 gals/load = 0.6 loads @ 0.5 hrs/trip = 0.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Onsite Tanker Transport				\$12		
5.16.4 Empty tanker(s)						
					production rate = 1,650 gals/hr; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	HASP req's two: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	2.0	hours	\$6.31	\$13	3350 gals @ 1650 gals/hr = 2.0 hours @ 1 unit/crew = 2.0	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanker(s)				\$13		
(Subt: Assemb 5.16.2 - 5.16.4)				\$37	empty tanks' contents and onsite transport to AWTS	
5.16.5 Onsite Aqueous Treatment						
					liquid waste stream	
Onsite Aqueous Treatment - Tanks	3350.0	gals	\$0.2295	\$769	3350 gals	AWTS treatment costs @ \$0.2295
Subt - Onsite Aqueous Treatment				\$769		
(Subt: Assemb 5.16.5 - 5.16.5)				\$769	onsite treatment of tanks' waste liquids	
5.16.6 Steel Tank Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	0.0	<i>tnks @</i>			<i>0 gallons: 0 SF Tanks: 0 CF @ 490 Lb/CF = 0 Lbs</i>	<i>Steel Tanks only; estimate 490#/CF</i>
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$0	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	

5.16 AWTS (i/s A n/w SLF 10) 2 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.16.7 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	2.0	tnks @			3350 gallons: 410 SF Tanks: 11 CF @ 245 Lb/CF = 2790 Lbs	FRP Tanks only; facility estimates 245#/CF
Laborer	6.2	hours	\$39.00	\$242	410 SF @ 200 SF/hour 2.1 hours @ 3 units/crew = 6.2 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	4.1	hours	\$45.00	\$185	410 SF @ 200 SF/hour 2.1 hours @ 2 units/crew = 4.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	2.1	hours	\$84.09	\$177	410 SF @ 200 SF/hour 2.1 hours @ 1 units/crew = 2.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	2.1	hours	\$34.40	\$72	410 SF @ 200 SF/hour 2.1 hours @ 1 units/crew = 2.1 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	2.1	hours	\$2.47	\$5	410 SF @ 200 SF/hour 2.1 hours @ 1 units/crew = 2.1 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	2.1	hours	\$30.03	\$63	410 SF @ 200 SF/hour 2.1 hours @ 1 units/crew = 2.1 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	2.1	hours	\$86.31	\$181	410 SF @ 200 SF/hour 2.1 hours @ 1 units/crew = 2.1 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	410 SF @ 200 SF/hour 2.1 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$925	<i>tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5</i>	
5.16.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	200.0	LF			2 tanks @ 100 LF/tank = 200 LF @ 4 Lb/LF = 800 Lbs	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	20.0	hours	\$39.00	\$780	200 LF @ 20 LF/hour 10.0 hours @ 2 units/crew = 20.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	10.0	hours	\$5.41	\$54	200 LF @ 20 LF/hour 10.0 hours @ 1 units/crew = 10.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$834	<i>in the absence of facility data, piping assumed to average 100 LF/tank</i>	
5.16.9 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	2.0	hours	\$39.00	\$78	1.0 pumps @ 1 pump/hr 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	1.0	hours	\$5.41	\$5	1.0 pumps @ 1 pump/hr 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$83	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.16.10 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.1	hours	\$39.00	\$4	1.4 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.1	hours	\$45.00	\$5	1.4 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.1	hours	\$30.03	\$3	1.4 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.1	hours	\$5.20	\$1	1.4 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$12	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	

5.16 AWTS (i/s A n/w SLF 10) 2 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.16.11 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	2.1	TONS			1.4 CY debr + 15% kiln dust = 1.59 CY total total tonnage = 2.1 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.3	hours	\$39.00	\$12	2.1 tons @ 15 tons/hr @ 0.1 hours @ 2 units/crew = 0.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.4	hours	\$45.00	\$18	2.1 tons @ 15 tons/hr @ 0.1 hours @ 3 units/crew = 0.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.1	hours	\$19.18	\$2	2.1 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.1	hours	\$14.39	\$1	2.1 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.1	hours	\$329.70	\$33	2.1 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.1	hours	\$136.29	\$14	2.1 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.2 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.2 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.2	tons	\$48.00	\$10		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.1	units	\$1,000.00	\$100	1.6 CYs @ 30 CY/unit = 0.1 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.0	hours	\$19.02	\$0	1.6 CYs @ 30 CY/unit = 0.1 rolloffs @ 0.1 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate	2.1	tons		\$189	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.16.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	1.6 CY @ 30 CY/load = 0.1 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	1.6	CY	\$337.50	\$540	1.6 CY @ 27 CF/CY = 43.0 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$665		
<i>(Subt: Assemb 5.16.6 - 5.16.12)</i>				\$2,708	tank/piping/pump demolition, and offsite transportation & disposal	
5.16.13 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	9.1	hours	\$39.00	\$355	951 SF @ 105 SF/hr = 9.1 hours @ 1 pers/crew = 9.1 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	9.1	hours	\$4.04	\$37	951 SF @ 105 SF/hr = 9.1 hours @ 1 unit/crew = 9.1 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	9.1	hours	\$3.41	\$31	951 SF @ 105 SF/hr = 9.1 hours @ 1 unit/crew = 9.1 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$423		
5.16.14 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	9.1	hours	\$39.00	\$355	951 SF @ 105 SF/hr = 9.1 hours @ 1 pers/crew = 9.1 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	9.1	hours	\$4.04	\$37	951 SF @ 105 SF/hr = 9.1 hours @ 1 unit/crew = 9.1 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	9.1	hours	\$3.41	\$31	951 SF @ 105 SF/hr = 9.1 hours @ 1 unit/crew = 9.1 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$423		
5.16.15 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	475.5	gal	\$0.0313	\$15	951 SF @ 0.5 gal/sf/wa = 475.5 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$172		

5.16 AWTS (i/s A n/w SLF 10) 2 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.16.16 PCB Wipe Samples						
					No TCLP analyses necessary according to site-wide closure plan	
Technician	1.5	hours	\$38.00	\$57	1.5 samp @ 0.5 hr/samp = 0.75 hours @ 2 pers/crew = 1.5 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	1.5	samp	\$83.33	\$125	951 SF @ 625 SF/samp = 1.5 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$182		
(Subt: Assemb 5.16.13 - 5.16.16)				\$1,200	decontamination & sampling of SCA	

Total Non-Super Labor Hours 56.0

5.16.17 PPE Usage/H&S Planning						
					Level C @ 75%; Level D @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	56.0 hours @ 8 hr/day = 7.0 days @ 25% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	1.8	days	\$9.00	\$16	56.0 hours @ 8 hr/day = 7.0 days @ 25% "D" days = 1.8 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	5.2	days	\$25.00	\$130	56.0 hours @ 8 hr/day = 7.0 days @ 75% "C" days = 5.2 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	1.4	hours	\$75.00	\$105	56.0 hours @ 2.5% hr/hr = 1.4 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$251		
5.16.18 Supervision						
					0.2 week for closure of 3 tanks	
Foreman	8.0	hours	\$65.00	\$520	0.2 week @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520		
5.16.19 Certification						
					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.8	hours	\$130.00	\$104	56.0 hours @ 0.015 hr/hr = 0.8 hours	Engineer rate: 2011 3rd party quote
Clerical	0.8	hours	\$45.00	\$36	56.0 hours @ 0.015 hr/hr = 0.8 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$140		
(Subt: Assemb 5.16.17 - 5.16.19)				\$911		

5.16 AWTS (i/s A n/w SLF 10) 2 tk	Direct Cost	Total	Basic	\$5,703
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5.16 AWTS (i/s A n/w SLF 10) 2 tk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$5,703	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$399	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$228	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$342	note: DEC uses 6%
Engineering During Construction	2.00%	\$114	note: DEC uses 2%
General Contractor Profit	6.00%	\$342	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$1,426	
Subt: AWTS (i/s A n/w SLF 10) 2		\$7,129	
Plus Contingency	10.00%	\$713	CWM and DEC 10%
Tot: AWTS (i/s A n/w SLF 10) 2 tk		\$7,841	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.17 AWTS (i/s A east LTF) 2 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.17.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	2.0	hours	\$39.00	\$78	2 tanks @ 0.5 hour/tank = 1.0 hours @ 2 units/crew = 2.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$78		
(Subt: Assemb 5.17.1 - 5.17.1)				\$78	tanks: T-158 and T-159	
5.17.2 Onsite Aqueous Treatment						
					80% of T-158 & 100% of T-159 liquid waste pumped directly from tanks into AWTS	
Onsite Aqueous Treatment - Tanks	14600.0	gals	\$0.2210	\$3,226	14600 gals	AWTS treatment costs @ \$0.2295
Subt - Onsite Aqueous Treatment				\$3,226		
(Subt: Assemb 5.17.2 - 5.17.2)				\$3,226	onsite treatment of tanks' waste liquids	
5.17.3 Load 20% of T-158 to Tnkr						
					production rate = 1,650 gal/hour;	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	HASP req's two: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gal)	2.1	hours	\$6.31	\$13	3400.0 gals @ 1650 gals/hr = 2.1 hours @ 1 units/crew 2.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Load 20% of Tank T-158				\$13		
5.17.4 Offsite T&D - 20% T-158						
					20% of T-158 PCB oils	
Offsite Transportation - PCB Liqs	945.2	miles	\$3.50	\$3,308	3400.0 gals @ 5500 gals/load = 0.6 loads @ 1529 miles/trip = 945.2 hours	Rate: transporters quote/site experience
Offsite Disposal - PCB Liqs	3400.0	gals	\$4.68	\$15,912	3400.0 gals	HWC/ETC 2004 & Current third party rate
Subt - Offsite T&D: 20% of T-158				\$19,220		
(Subt: Assemb 5.17.3 - 5.17.4)				\$19,233	offsite T&D of 20% of contents of Tank T-158	
5.17.5 Steel Tank Demolition						
					prod'n rate = 200 SF/hr; 1 CF debris per 36 sf tank area	
No. of Tanks/Capacity/Area/Weight	1.0	tnks @			17000 gallons: 905 SF Tanks: 25 CF @ 490 Lb/CF = 12318 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	13.6	hours	\$39.00	\$530	905 SF @ 200 SF/hour 4.5 hours @ 3 units/crew = 13.6 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	9.1	hours	\$45.00	\$410	905 SF @ 200 SF/hour 4.5 hours @ 2 units/crew = 9.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	4.5	hours	\$84.09	\$378	905 SF @ 200 SF/hour 4.5 hours @ 1 units/crew = 4.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	4.5	hours	\$34.40	\$155	905 SF @ 200 SF/hour 4.5 hours @ 1 units/crew = 4.5 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	4.5	hours	\$2.47	\$11	905 SF @ 200 SF/hour 4.5 hours @ 1 units/crew = 4.5 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	4.5	hours	\$30.03	\$135	905 SF @ 200 SF/hour 4.5 hours @ 1 units/crew = 4.5 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	4.5	hours	\$86.31	\$388	905 SF @ 200 SF/hour 4.5 hours @ 1 units/crew = 4.5 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	4.5	hours	\$5.41	\$24	905 SF @ 200 SF/hour 4.5 hours @ 1 units/crew = 4.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$2,032	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	

5.17 AWTS (i/s A east LTF) 2 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.17.6 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	1.0	tnks @			<i>1000 gallons: 160 SF Tanks: 4 CF @ 245 Lb/CF = 1089 Lbs</i>	<i>FRP Tanks only; facility estimates 245#/CF</i>
Laborer	2.4	hours	\$39.00	\$94	160 SF @ 200 SF/hour 0.8 hours @ 3 units/crew = 2.4 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.6	hours	\$45.00	\$72	160 SF @ 200 SF/hour 0.8 hours @ 2 units/crew = 1.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.8	hours	\$84.09	\$67	160 SF @ 200 SF/hour 0.8 hours @ 1 units/crew = 0.8 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.8	hours	\$34.40	\$28	160 SF @ 200 SF/hour 0.8 hours @ 1 units/crew = 0.8 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.8	hours	\$2.47	\$2	160 SF @ 200 SF/hour 0.8 hours @ 1 units/crew = 0.8 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.8	hours	\$30.03	\$24	160 SF @ 200 SF/hour 0.8 hours @ 1 units/crew = 0.8 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.8	hours	\$86.31	\$69	160 SF @ 200 SF/hour 0.8 hours @ 1 units/crew = 0.8 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	160 SF @ 200 SF/hour 0.8 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$355	<i>tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5</i>	
5.17.7 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	200.0	LF			<i>2 tanks @ 100 LF/tank = 200 LF @ 4 Lb/LF = 800 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	20.0	hours	\$39.00	\$780	200 LF @ 20 LF/hour 10.0 hours @ 2 units/crew = 20.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	10.0	hours	\$5.41	\$54	200 LF @ 20 LF/hour 10.0 hours @ 1 units/crew = 10.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$834	<i>in the absence of facility data, piping assumed to average 100 LF/tank</i>	
5.17.8 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	2.0	hours	\$39.00	\$78	1.0 pumps @ 1 pump/hr 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	1.0	hours	\$5.41	\$5	1.0 pumps @ 1 pump/hr 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$83	<i>pump weight = 250# each; in the absence of facility data, one pump per two tanks is estimated</i>	
5.17.9 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.1	hours	\$39.00	\$4	2.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.1	hours	\$45.00	\$5	2.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.1	hours	\$30.03	\$3	2.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.1	hours	\$5.20	\$1	2.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$12	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	

5.17 AWTS (i/s A east LTF) 2 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.17.10 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	7.5	TONS			2.1 CY debr + 15% kiln dust = 2.37 CY total total tonnage = 7.5 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	1.0	hours	\$39.00	\$39	7.5 tons @ 15 tons/hr @ 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.5	hours	\$45.00	\$68	7.5 tons @ 15 tons/hr @ 0.5 hours @ 3 units/crew = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.5	hours	\$19.18	\$10	7.5 tons @ 15 tons/hr @ 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.5	hours	\$14.39	\$7	7.5 tons @ 15 tons/hr @ 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.5	hours	\$329.70	\$165	7.5 tons @ 15 tons/hr @ 0.5 hours @ 1 units/crew = 0.5 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.5	hours	\$136.29	\$68	7.5 tons @ 15 tons/hr @ 0.5 hours @ 1 units/crew = 0.5 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.3 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.3 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.3	tons	\$48.00	\$14		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.1	units	\$1,000.00	\$100	2.4 CYs @ 30 CY/unit = 0.1 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.0	hours	\$19.02	\$0	2.4 CYs @ 30 CY/unit = 0.1 rolloffs @ 0.5 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate	7.5	tons		\$471	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.17.11 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	2.4 CY @ 30 CY/load = 0.1 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	2.4	CY	\$337.50	\$810	2.4 CY @ 27 CF/CY = 63.9 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$935		
<i>(Subt: Assemb 5.17.5 - 5.17.11)</i>				\$4,723	tank/piping/pump demolition, and offsite transportation & disposal	
5.17.12 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	13.5	hours	\$39.00	\$527	1421 SF @ 105 SF/hr = 13.5 hours @ 1 pers/crew = 13.5 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	13.5	hours	\$4.04	\$55	1421 SF @ 105 SF/hr = 13.5 hours @ 1 unit/crew = 13.5 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	13.5	hours	\$3.41	\$46	1421 SF @ 105 SF/hr = 13.5 hours @ 1 unit/crew = 13.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$627		
5.17.13 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	13.5	hours	\$39.00	\$527	1421 SF @ 105 SF/hr = 13.5 hours @ 1 pers/crew = 13.5 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	13.5	hours	\$4.04	\$55	1421 SF @ 105 SF/hr = 13.5 hours @ 1 unit/crew = 13.5 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	13.5	hours	\$3.41	\$46	1421 SF @ 105 SF/hr = 13.5 hours @ 1 unit/crew = 13.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$627		
5.17.14 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	710.5	gal	\$0.0313	\$22	1421 SF @ 0.5 gal/sf/wa = 710.5 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$180		

5.17 AWTS (i/s A east LTF) 2 tnks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.17.15 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	2.3	hours	\$38.00	\$87	2.3 samp @ 0.5 hr/samp = 1.15 hours @ 2 pers/crew = 2.3 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	2.3	samp	\$83.33	\$192	1421 SF @ 625 SF/samp = 2.3 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemb 5.17.12 - 5.17.15)				\$279		
				\$1,713	decontamination & sampling of SCA	

Total Non-Super Labor Hours 83.8

5.17.16 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	83.8 hours @ 8 hr/day = 10.5 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	2.6	days	\$9.00	\$23	83.8 hours @ 8 hr/day = 10.5 days @ 25% "Mod C" days = 2.6 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	7.9	days	\$25.00	\$198	83.8 hours @ 8 hr/day = 10.5 days @ 75% "C" days = 7.9 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	2.1	hours	\$75.00	\$158	83.8 hours @ 2.5% hr/hr = 2.1 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$378		
5.17.17 Supervision					0.2 week for closure of 2 tanks	
Foreman	8.0	hours	\$65.00	\$520	0.2 week @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520		
5.17.18 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	1.3	hours	\$130.00	\$169	83.8 hours @ 0.015 hr/hr = 1.3 hours	Engineer rate: 2011 3rd party quote
Clerical	1.3	hours	\$45.00	\$59	83.8 hours @ 0.015 hr/hr = 1.3 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification (Subt: Assemb 5.17.16 - 5.17.18)				\$228		
				\$1,126		

5.17 AWTS (i/s A east LTF) 2 tnks	Direct Cost	Total	Basic	\$30,099
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5.17 AWTS (i/s A east LTF) 2 tnks			
Total Cost Summary - Basic Opt.			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$30,099	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$2,107	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$1,204	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$1,806	note: DEC uses 6%
Engineering During Construction	2.00%	\$602	note: DEC uses 2%
General Contractor Profit	6.00%	\$1,806	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$7,525	
Subt: AWTS (i/s A east LTF) 2 tks		\$37,623	
Plus Contingency	10.00%	\$3,762	CWM and DEC 10%
Tot: AWTS (i/s A east LTF) 2 tnks		\$41,386	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.18 AWTS (i/s A s/e SLF 12) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.18.1 Inventory Verification					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	1.0	hours	\$39.00	\$39	1 tanks @ 0.5 hour/tank = 0.5 hours @ 2 units/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification (Subt: Assemb 5.18.1 - 5.18.1)				\$39	tank: T-150	
5.18.2 Onsite Aqueous Treatment					liquid waste stream pumped directly from tanks into AWTS	
Onsite Aqueous Treatment - Tanks	8000.0	gals	\$0.1526	\$1,221	8000 gals	AWTS treatment costs @ \$0.1526
Subt - Onsite Aqueous Treatment (Subt: Assemb 5.18.2 - 5.18.2)				\$1,221	onsite treatment of tanks' waste liquids	
5.18.3 Steel Tank Demolition					prod'n rate = 200 SF/hr, pp. 3-2/3-3,3-5; 1 CF debris per 36 sf tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	1.0	<i>tnks @</i>			<i>8000 gallons: 600 SF Tanks: 17 CF @ 490 Lb/CF = 8167 Lbs</i>	<i>Steel Tanks only; estimate 490#/CF</i>
Laborer	9.0	hours	\$39.00	\$351	600 SF @ 200 SF/hour 3.0 hours @ 3 units/crew = 9.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	6.0	hours	\$45.00	\$270	600 SF @ 200 SF/hour 3.0 hours @ 2 units/crew = 6.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	3.0	hours	\$84.09	\$252	600 SF @ 200 SF/hour 3.0 hours @ 1 units/crew = 3.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	3.0	hours	\$34.40	\$103	600 SF @ 200 SF/hour 3.0 hours @ 1 units/crew = 3.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	3.0	hours	\$2.47	\$7	600 SF @ 200 SF/hour 3.0 hours @ 1 units/crew = 3.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	3.0	hours	\$30.03	\$90	600 SF @ 200 SF/hour 3.0 hours @ 1 units/crew = 3.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	3.0	hours	\$86.31	\$259	600 SF @ 200 SF/hour 3.0 hours @ 1 units/crew = 3.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	3.0	hours	\$5.41	\$16	600 SF @ 200 SF/hour 3.0 hours @ 1 units/crew = 3.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$1,349	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.18.4 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	0.0	<i>tnks @</i>			<i>0 gallons: 0 SF Tanks: 0 CF @ 245 Lb/CF = 0 Lbs</i>	<i>FRP Tanks only; facility estimates 245#/CF</i>
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$0	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.18.5 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	100.0	<i>LF</i>			<i>1 tanks @ 100 LF/tank = 100 LF @ 4 Lb/LF = 400 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	10.0	hours	\$39.00	\$390	100 LF @ 20 LF/hour 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5.0	hours	\$5.41	\$27	100 LF @ 20 LF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$417	in the absence of facility data, piping assumed to average 100 LF/tank	

5.18 AWTS (i/s A s/e SLF 12) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.18.6 Tank Pump Demolition					prod'n rate = 1 pump/hr assume 0.5 pumps/tank	
Laborers	1.0	hours	\$39.00	\$39	0.5 pumps @ 1 pump/hr 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	0.5	hours	\$5.41	\$3	0.5 pumps @ 1 pump/hr 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$42	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.18.7 Load Tank Demo Debris					production rate = 15 CY/hour;	
Laborer	0.1	hours	\$39.00	\$4	1.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.1	hours	\$45.00	\$5	1.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.1	hours	\$30.03	\$3	1.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.1	hours	\$5.20	\$1	1.1 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$12	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.18.8 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	4.5	TONS			1.1 CY debr + 15% kiln dust = 1.26 CY total total tonnage = 4.5 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.6	hours	\$39.00	\$23	4.5 tons @ 15 tons/hr @ 0.3 hours @ 2 units/crew = 0.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.9	hours	\$45.00	\$41	4.5 tons @ 15 tons/hr @ 0.3 hours @ 3 units/crew = 0.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.3	hours	\$19.18	\$6	4.5 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.3	hours	\$14.39	\$4	4.5 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.3	hours	\$329.70	\$99	4.5 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.3	hours	\$136.29	\$41	4.5 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.2 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.2 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.2	tons	\$48.00	\$10		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.043	units	\$1,000.00	\$43	1.3 CYs @ 30 CY/unit = 0.043 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.0	hours	\$19.02	\$0	1.3 CYs @ 30 CY/unit = 0.0 rolloffs @ 0.3 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$266	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.18.9 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	1.3 CY @ 30 CY/load = 0.0 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	1.3	CY	\$337.50	\$439	1.3 CY @ 27 CF/CY = 34.1 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$564		
<i>(Subt: Assemb 5.18.3 - 5.18.9)</i>				\$2,650	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	
5.18.10 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	8.5	hours	\$39.00	\$332	896 SF @ 105 SF/hr = 8.5 hours @ 1 pers/crew = 8.5 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	8.5	hours	\$4.04	\$34	896 SF @ 105 SF/hr = 8.5 hours @ 1 unit/crew = 8.5 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	8.5	hours	\$3.41	\$29	896 SF @ 105 SF/hr = 8.5 hours @ 1 unit/crew = 8.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$395		
5.18.11 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	8.5	hours	\$39.00	\$332	896 SF @ 105 SF/hr = 8.5 hours @ 1 pers/crew = 8.5 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	8.5	hours	\$4.04	\$34	896 SF @ 105 SF/hr = 8.5 hours @ 1 unit/crew = 8.5 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	8.5	hours	\$3.41	\$29	896 SF @ 105 SF/hr = 8.5 hours @ 1 unit/crew = 8.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$395		

5.18 AWTS (i/s A s/e SLF 12) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.18.12 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	448.0	gal	\$0.0313	\$14	896 SF @ 0.5 gal/sf/wa = 448 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$171		
5.18.13 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	1.4	hours	\$38.00	\$53	1.4 samp @ 0.5 hr/samp = 0.7 hours @ 2 pers/crew = 1.4 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	1.4	samp	\$83.33	\$117	896 SF @ 625 SF/samp = 1.4 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$170		
(Subt: Assemb 5.18.10 - 5.18.13)				\$1,131	decontamination & sampling of SCA	

Total Non-Super Labor Hours 48.2

5.18.14 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	48.2 hours @ 8 hr/day = 6.0 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	1.5	days	\$9.00	\$14	48.2 hours @ 8 hr/day = 6.0 days @ 25% "Mod C" days = 1.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	4.5	days	\$25.00	\$113	48.2 hours @ 8 hr/day = 6.0 days @ 75% "C" days = 4.5 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	1.2	hours	\$75.00	\$90	48.2 hours @ 2.5% hr/hr = 1.2 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$216		
5.18.15 Supervision					0.2 week for closure of 1 tank	
Foreman	8.0	hours	\$65.00	\$520	0.2 week @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520		
5.18.16 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.7	hours	\$130.00	\$91	48.2 hours @ 0.015 hr/hr = 0.7 hours	Engineer rate: 2011 3rd party quote
Clerical	0.7	hours	\$45.00	\$32	48.2 hours @ 0.015 hr/hr = 0.7 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$123		
(Subt: Assemb 5.18.14 - 5.18.16)				\$859		

5.18 AWTS (i/s A s/e SLF 12) 1 tnk	Direct Cost	Total	Basic	\$5,899
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5.18 AWTS (i/s A s/e SLF 12) 1 tnk			
Total Cost Summary - Basic Opt.			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$5,899	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$413	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$236	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$354	note: DEC uses 6%
Engineering During Construction	2.00%	\$118	note: DEC uses 2%
General Contractor Profit	6.00%	\$354	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$1,475	
Subt: AWTS (i/s A s/e SLF12) 1 tk		\$7,374	
Plus Contingency	10.00%	\$737	CWM and DEC 10%
Tot: AWTS (i/s A s/e SLF12) 1 tnk		\$8,111	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.19 AWTS (i/s form o/w sep) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.19.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	5.0	hours	\$39.00	\$195	5 tanks @ 0.5 hour/tank = 2.5 hours @ 2 units/crew = 5.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$195		
(Subt: Assemb 5.19.1 - 5.19.1)				\$195	currently permitted tank: T-157 (also demo non-operating tanks T-152, T-153, T-154, & T-155 at c	
5.19.2 Onsite Aqueous Treatment						
					Non-hazardous site waters only	
Onsite Aqueous Treatment - Tanks		gals	\$0.0453	\$0	8000 gals	AWTS average cost for all wastewater
Subt - Onsite Aqueous Treatment				\$0		
(Subt: Assemb 5.19.2 - 5.19.2)				\$0	All non-hazardous site waters no treatment necessary	
5.19.3 Steel Tank Demolition						
					prod'n rate = 200 SF/hr; 1 CF debris per 36 sf tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	5.0	<i>tnks @</i>			<i>8000 gallons: 2521 SF Tanks: 70 CF @ 490 Lb/CF = 34314 Lbs</i>	<i>Steel Tanks only; estimate 490#/CF</i>
Laborer	37.8	hours	\$39.00	\$1,474	2521 SF @ 200 SF/hour 12.6 hours @ 3 units/crew = 37.8 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	25.2	hours	\$45.00	\$1,134	2521 SF @ 200 SF/hour 12.6 hours @ 2 units/crew = 25.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	12.6	hours	\$84.09	\$1,060	2521 SF @ 200 SF/hour 12.6 hours @ 1 units/crew = 12.6 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	12.6	hours	\$34.40	\$433	2521 SF @ 200 SF/hour 12.6 hours @ 1 units/crew = 12.6 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	12.6	hours	\$2.47	\$31	2521 SF @ 200 SF/hour 12.6 hours @ 1 units/crew = 12.6 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	12.6	hours	\$30.03	\$378	2521 SF @ 200 SF/hour 12.6 hours @ 1 units/crew = 12.6 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	12.6	hours	\$86.31	\$1,088	2521 SF @ 200 SF/hour 12.6 hours @ 1 units/crew = 12.6 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	12.6	hours	\$5.41	\$68	2521 SF @ 200 SF/hour 12.6 hours @ 1 units/crew = 12.6 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$5,666	<i>tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5</i>	
5.19.4 FRP Tank Demolition						
					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	0.0	<i>tnks @</i>			<i>0 gallons: 0 SF Tanks: 0 CF @ 245 Lb/CF = 0 Lbs</i>	<i>FRP Tanks only; facility estimates 245#/CF</i>
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition	0.0	SF @		\$0	<i>tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5</i>	
5.19.5 Tank Piping Demolition						
					avg prod'n rate = 20 LF/hr, for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	500.0	<i>LF</i>			<i>5 tanks @ 100 LF/tank = 500 LF @ 4 Lb/LF = 2000 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	50.0	hours	\$39.00	\$1,950	500 LF @ 20 LF/hour 25.0 hours @ 2 units/crew = 50.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	25.0	hours	\$5.41	\$135	500 LF @ 20 LF/hour 25.0 hours @ 1 units/crew = 25.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$2,085	<i>in the absence of facility data, piping assumed to average 100 LF/tank</i>	

5.19 AWTS (i/s form o/w sep) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.19.6 Tank Pump Demolition					prod'n rate = 1 pump/hr assume 0.5 pumps/tank	
Laborers	5.0	hours	\$39.00	\$195	2.5 pumps @ 1 pump/hr 2.5 hours @ 2 units/crew = 5.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	2.5	hours	\$5.41	\$14	2.5 pumps @ 1 pump/hr 2.5 hours @ 1 units/crew = 2.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$209	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.19.7 Load Tank Demo Debris					production rate = 15 CY/hour;	
Laborer	0.3	hours	\$39.00	\$12	5.0 CY @ 15 CY/hr = 0.3 hours @ 1 units/crew = 0.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.3	hours	\$45.00	\$14	5.0 CY @ 15 CY/hr = 0.3 hours @ 1 units/crew = 0.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.3	hours	\$30.03	\$9	5.0 CY @ 15 CY/hr = 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.3	hours	\$5.20	\$2	5.0 CY @ 15 CY/hr = 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$36	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.19.8 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	19.2	TONS			5.0 CY debr + 15% kiln dust = 5.75 CY total total tonnage = 19.2 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	2.6	hours	\$39.00	\$101	19.2 tons @ 15 tons/hr @ 1.3 hours @ 2 units/crew = 2.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	3.8	hours	\$45.00	\$171	19.2 tons @ 15 tons/hr @ 1.3 hours @ 3 units/crew = 3.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	1.3	hours	\$19.18	\$25	19.2 tons @ 15 tons/hr @ 1.3 hours @ 1 units/crew = 1.3 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	1.3	hours	\$14.39	\$19	19.2 tons @ 15 tons/hr @ 1.3 hours @ 1 units/crew = 1.3 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	1.3	hours	\$329.70	\$429	19.2 tons @ 15 tons/hr @ 1.3 hours @ 1 units/crew = 1.3 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	1.3	hours	\$136.29	\$177	19.2 tons @ 15 tons/hr @ 1.3 hours @ 1 units/crew = 1.3 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.8 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.8 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.8	tons	\$48.00	\$38		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.2	units	\$1,000.00	\$200	5.8 CYs @ 30 CY/unit = 0.2 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.2	hours	\$19.02	\$4	5.8 CYs @ 30 CY/unit = 0.2 rolloffs @ 1.3 hours/rolloff = 0.2 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$1,164	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.19.9 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	77.0	miles	\$3.25	\$250	5.8 CY @ 30 CY/load = 0.2 loads @ 385 miles/trip = 77.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	5.8	CY	\$337.50	\$1,958	5.8 CY @ 27 CF/CY = 155.3 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$2,208		
<i>(Subt: Assemb 5.19.3 - 5.19.9)</i>				\$11,368	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	
5.19.10 Decon SCA (wash)					not applicable - decontamination and sampling of SCA performed & certified in 2011	
Subt - Decon SCA (wash)				\$0		

5.19 AWTS (i/s form o/w sep) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.19.11 Decon SCA (rinse)						
Subt - Decon SCA (rinse)				\$0		
5.19.12 Decon Water Samp/Disp						
Subt - Decon Water Samp/Dispose				\$0		
5.19.13 PCB Wipe Samples						
Subt - PCB Wipe/Destruct Samp				\$0		
(Subt: Assemb 5.19.10 - 5.19.13)				\$0	decontamination & sampling of SCA performed and certified in 2011	

Total Non-Super Labor Hours 130.0

5.19.14 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	130.0 hours @ 8 hr/day = 16.2 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	4.1	days	\$9.00	\$37	130.0 hours @ 8 hr/day = 16.2 days @ 25% "ModC" days = 4.1 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	12.1	days	\$25.00	\$303	130.0 hours @ 8 hr/day = 16.2 days @ 75% "C" days = 12.1 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	3.25	hours	\$75.00	\$244	130.0 hours @ 2.5% hr/hr = 3.25 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$583		
5.19.15 Supervision					1.0 week for closure of 1 tank	
Foreman	40.0	hours	\$65.00	\$2,600	1.0 week @ 40 hrs/wk = 40.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$2,600		
5.19.16 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	1.95	hours	\$130.00	\$254	130.0 hours @ 0.015 hr/hr = 1.95 hours	Engineer rate: 2011 3rd party quote
Clerical	1.95	hours	\$45.00	\$88	130.0 hours @ 0.015 hr/hr = 1.95 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$341		
(Subt: Assemb 5.19.14 - 5.19.16)				\$3,524		

5.19 AWTS (i/s form o/w sep) 1 tk	Direct Cost	Total	Basic	\$15,087
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5.19 AWTS (i/s form o/w sep) 1 tk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$15,087	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$1,056	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$603	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$905	note: DEC uses 6%
Engineering During Construction	2.00%	\$302	note: DEC uses 2%
General Contractor Profit	6.00%	\$905	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$3,772	
Subt: AWTS (i/s form o/w sep) 1 t		\$18,859	
Plus Contingency	10.00%	\$1,886	CWM and DEC 10%
Tot: AWTS (i/s form o/w sep) 1 tk		\$20,745	

Cost References:

"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.20 AWTS (rmu-1 tanks) 2 tks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.20.1 Inventory Verification						
					prod'n rates: 50 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	2.0	hours	\$39.00	\$78	2 tanks @ 0.5 hour/tank = 1.0 hours @ 2 units/crew = 2.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$78		
(Subt: Assemb 5.20.1 - 5.20.1)				\$78	tanks: T-160, T-165	
5.20.2 Onsite Aqueous Treatment						
					liquid waste stream pumped directly from tanks into AWTS	
Onsite Aqueous Treatment - Tanks	879769.0	gals	\$0.0178	\$15,660	879769 gals	AWTS treatment costs @ \$0.0178
Subt - Onsite Aqueous Treatment				\$15,660		
(Subt: Assemb 5.20.2 - 5.20.2)				\$15,660	onsite treatment of tanks' waste liquids	
5.20.3 Steel Tank Demolition						
					prod'n rate = 200 SF/hr ; 1 CF debris per 36 sf tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	2.0	<i>tnks @</i>			<i>879769 gallons: 16978 SF Tanks: 472 CF @ 490 Lb/CF = 231089 Lbs</i>	<i>Steel Tanks only; estimate 490#/CF</i>
Laborer	254.7	hours	\$39.00	\$9,933	16978 SF @ 200 SF/hour 84.9 hours @ 3 units/crew = 254.7 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	169.8	hours	\$45.00	\$7,641	16978 SF @ 200 SF/hour 84.9 hours @ 2 units/crew = 169.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	84.9	hours	\$84.09	\$7,139	16978 SF @ 200 SF/hour 84.9 hours @ 1 units/crew = 84.9 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	84.9	hours	\$34.40	\$2,921	16978 SF @ 200 SF/hour 84.9 hours @ 1 units/crew = 84.9 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	84.9	hours	\$2.47	\$210	16978 SF @ 200 SF/hour 84.9 hours @ 1 units/crew = 84.9 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	84.9	hours	\$30.03	\$2,550	16978 SF @ 200 SF/hour 84.9 hours @ 1 units/crew = 84.9 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	84.9	hours	\$86.31	\$7,328	16978 SF @ 200 SF/hour 84.9 hours @ 1 units/crew = 84.9 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	84.9	hours	\$5.41	\$459	16978 SF @ 200 SF/hour 84.9 hours @ 1 units/crew = 84.9 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$38,180	<i>tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5</i>	
5.20.4 FRP Tank Demolition						
					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	0.0	<i>tnks @</i>			<i>0 gallons: 0 SF Tanks: 0 CF @ 245 Lb/CF = 0 Lbs</i>	<i>FRP Tanks only; facility estimates 245#/CF</i>
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$0	<i>tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5</i>	
5.20.5 Tank Piping Demolition						
					avg prod'n rate = 20 LF/hr, for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	200.0	<i>LF</i>			<i>2 tanks @ 100 LF/tank = 200 LF @ 4 Lb/LF = 800 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	20.0	hours	\$39.00	\$780	200 LF @ 20 LF/hour 10.0 hours @ 2 units/crew = 20.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	10.0	hours	\$5.41	\$54	200 LF @ 20 LF/hour 10.0 hours @ 1 units/crew = 10.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$834	<i>in the absence of facility data, piping assumed to average 100 LF/tank</i>	

5.20 AWTS (rmu-1 tanks) 2 tks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.20.6 Tank Pump Demolition					prod'n rate = 1 pump/hr assume 0.5 pumps/tank	
Laborers	2.0	hours	\$39.00	\$78	1.0 pumps @ 1 pump/hr 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	1.0	hours	\$5.41	\$5	1.0 pumps @ 1 pump/hr 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$83	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.20.7 Load Tank Demo Debris					production rate = 15 CY/hour; R	
Laborer	1.2	hours	\$39.00	\$47	18.4 CY @ 15 CY/hr = 1.2 hours @ 1 units/crew 1.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.2	hours	\$45.00	\$54	18.4 CY @ 15 CY/hr = 1.2 hours @ 1 units/crew = 1.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	1.2	hours	\$30.03	\$36	18.4 CY @ 15 CY/hr = 1.2 hours @ 1 units/crew = 1.2 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	1.2	hours	\$5.20	\$6	18.4 CY @ 15 CY/hr = 1.2 hours @ 1 units/crew 1.2 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$143	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.20.8 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	118.8	TONS			18.4 CY debr + 15% kiln dust = 21.19 CY total total tonnage = 118.8 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	15.8	hours	\$39.00	\$616	118.8 tons @ 15 tons/hr @ 7.9 hours @ 2 units/crew = 15.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	23.8	hours	\$45.00	\$1,071	118.8 tons @ 15 tons/hr @ 7.9 hours @ 3 units/crew = 23.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	7.9	hours	\$19.18	\$152	118.8 tons @ 15 tons/hr @ 7.9 hours @ 1 units/crew = 7.9 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	7.9	hours	\$14.39	\$114	118.8 tons @ 15 tons/hr @ 7.9 hours @ 1 units/crew = 7.9 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	7.9	hours	\$329.70	\$2,605	118.8 tons @ 15 tons/hr @ 7.9 hours @ 1 units/crew = 7.9 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	7.9	hours	\$136.29	\$1,077	118.8 tons @ 15 tons/hr @ 7.9 hours @ 1 units/crew = 7.9 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	2.8 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	2.8 tons @ 20 ton/load = 0.1 loads	
Cement Kiln Dust - Mat'l&Delv Cost	2.8	tons	\$48.00	\$134		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.7	units	\$1,000.00	\$700	21.2 CYs @ 30 CY/unit = 0.7 containers	CWM actual 2011 costs
Rolloffs (30-CY)	5.6	hours	\$19.02	\$107	21.2 CYs @ 30 CY/unit = 0.7 rolloffs @ 7.9 hours/rolloff = 5.6 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$6,575	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.20.9 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	269.5	miles	\$3.25	\$876	21.2 CY @ 30 CY/load = 0.7 loads @ 385 miles/trip = 269.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	21.2	CY	\$337.50	\$7,155	21.2 CY @ 27 CF/CY = 572.3 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$8,031		
<i>(Subt: Assemb 5.20.3 - 5.20.9)</i>				\$53,846	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	
5.20.10 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	17.4	hours	\$39.00	\$679	1827 SF @ 105 SF/hr = 17.4 hours @ 1 pers/crew = 17.4 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	17.4	hours	\$4.04	\$70	1827 SF @ 105 SF/hr = 17.4 hours @ 1 unit/crew = 17.4 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	17.4	hours	\$3.41	\$59	1827 SF @ 105 SF/hr = 17.4 hours @ 1 unit/crew = 17.4 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$808		

5.20 AWTS (rmu-1 tanks) 2 tks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.20.11 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	17.4	hours	\$39.00	\$679	1827 SF @ 105 SF/hr = 17.4 hours @ 1 pers/crew = 17.4 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	17.4	hours	\$4.04	\$70	1827 SF @ 105 SF/hr = 17.4 hours @ 1 unit/crew = 17.4 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	17.4	hours	\$3.41	\$59	1827 SF @ 105 SF/hr = 17.4 hours @ 1 unit/crew = 17.4 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$808		
5.20.12 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	913.5	gal	\$0.0313	\$29	1827 SF @ 0.5 gal/sf/wa = 913.5 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$186		
5.20.13 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	2.9	hours	\$38.00	\$110	2.9 samp @ 0.5 hr/samp = 1.5 hours @ 2 pers/crew = 2.9 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	2.9	samp	\$83.33	\$242	1827 SF @ 625 SF/samp = 2.9 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$352		
(Subt: Assemb 5.20.10 - 5.20.13)				\$2,154	decontamination & sampling of SCA	

Total Non-Super Labor Hours 529.3

5.20.14 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	529.3 hours @ 8 hr/day = 66.2 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	16.5	days	\$9.00	\$149	529.3 hours @ 8 hr/day = 66.2 days @ 25% "ModC" days = 16.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	49.7	days	\$25.00	\$1,243	529.3 hours @ 8 hr/day = 66.2 days @ 75% "C" days = 49.7 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	13.2	hours	\$75.00	\$990	529.3 hours @ 2.5% hr/hr = 13.2 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$2,381		
5.20.15 Supervision					2.0 weeks for closure of 2 tanks	
Foreman	80.0	hours	\$65.00	\$5,200	2.0 weeks @ 40 hrs/wk = 80.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$5,200		
5.20.16 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	7.9	hours	\$130.00	\$1,027	529.3 hours @ 0.015 hr/hr = 7.9 hours	Engineer rate: 2011 3rd party quote
Clerical	7.9	hours	\$45.00	\$356	529.3 hours @ 0.015 hr/hr = 7.9 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$1,383		
(Subt: Assemb 5.20.14 - 5.20.16)				\$8,964		

5.20 AWTS (rmu-1 tanks) 2 tks	Direct Cost	Total	Basic	\$80,702
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5.20 AWTS (rmu-1 tanks) 2 tks			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$80,702	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$5,649	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$3,228	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$4,842	note: DEC uses 6%
Engineering During Construction	2.00%	\$1,614	note: DEC uses 2%
General Contractor Profit	6.00%	\$4,842	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$20,176	
Subt: AWTS (rmu-1 tanks) 2 tks		\$100,878	
Plus Contingency	10.00%	\$10,088	CWM and DEC 10%
Tot: AWTS (rmu-1 tanks) 2 tks		\$110,965	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.21 AWTS (o/s leachtnkfrm) 4 tks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.21.1 Inventory Verification						
					prod'n rates: 50 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	4.0	hours	\$39.00	\$156	4 tanks @ 0.5 hour/tank = 2.0 hours @ 2 units/crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$156		
(Subt: Assemb 5.21.1 - 5.21.1)				\$156	tanks: T-101, T-102, T-103, and FracTank-3	
5.21.2 Onsite Aqueous Treatment						
					treat unit price = \$0.0453/gal; contents pumped directly from tank into AWTS	
Onsite Aqueous Treatment - Tanks	350000.0	gals	\$0.0453	\$15,855	350000 gals	AWTS average cost for all wastewater
Subt - Onsite Aqueous Treatment				\$15,855		
(Subt: Assemb 5.21.2 - 5.21.2)				\$15,855	onsite treatment of tanks' waste liquids: T-103 only	
5.21.3 Empty Frac Tank 3						
					prod'n rate = 1,650 gals/hour;	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	12.7	hours	\$6.31	\$80	21000.0 gals @ 1650 gals/hr = 12.7 hours @ 1 units/crew = 12.7 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Frac Tank 3				\$80		
5.21.4 Transport Tankers Onsite						
					production rate = 0.5 hours for onsite travel	
Road Tractor	1.9	hours	\$32.45	\$62	21000.0 gals @ 5500 gals/load = 3.8 loads @ 0.5 hours/trip = 1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	1.9	hours	\$6.31	\$12	21000.0 gals @ 5500 gals/load = 3.8 loads @ 0.5 hours/trip = 1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subtotal - Transport Tankers				\$74		
5.21.5 Empty Tankers into AWTS						
					prod'n rate = 1,650 gals/hour;	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	12.7	hours	\$6.31	\$80	21000.0 gals @ 1650 gals/hr = 12.7 hours @ 1 units/crew = 12.7 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subtotal - Empty Tankers				\$80		
(Subt: Assemb 5.21.3 - 5.21.5)				\$234		
5.21.6 Onsite Aqueous Treatment						
					treat unit price = \$0.0453/gal; contents pumped directly from tank into AWTS	
Onsite Aqueous Treatment - Tanks	721000.0	gals	\$0.0453	\$32,661	721000 gals	AWTS average cost for all wastewater
Subt - Onsite Aqueous Treatment				\$32,661		
(Subt: Assemb 5.21.6 - 5.21.6)				\$32,661	onsite treatment of tanks' waste liquids: T-101 and T-102 only	

5.21 AWTS (o/s leachtnkfrm) 4 tks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.21.7 Steel Tank Demolition					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	4.0	<i>tnks @</i>			<i>1050000 gallons: 22395 SF Tanks: 622 CF @ 490 Lb/CF = 304821 Lbs</i>	<i>Steel Tanks only; estimate 490#/CF</i>
Laborer	335.9	hours	\$39.00	\$13,100	22395 SF @ 200 SF/hour 112.0 hours @ 3 units/crew = 335.9 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	224.0	hours	\$45.00	\$10,080	22395 SF @ 200 SF/hour 112.0 hours @ 2 units/crew = 224.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	112.0	hours	\$84.09	\$9,418	22395 SF @ 200 SF/hour 112.0 hours @ 1 units/crew = 112.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	112.0	hours	\$34.40	\$3,853	22395 SF @ 200 SF/hour 112.0 hours @ 1 units/crew = 112.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	112.0	hours	\$2.47	\$277	22395 SF @ 200 SF/hour 112.0 hours @ 1 units/crew = 112.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	112.0	hours	\$30.03	\$3,363	22395 SF @ 200 SF/hour 112.0 hours @ 1 units/crew = 112.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	112.0	hours	\$86.31	\$9,667	22395 SF @ 200 SF/hour 112.0 hours @ 1 units/crew = 112.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	112.0	hours	\$5.41	\$606	22395 SF @ 200 SF/hour 112.0 hours @ 1 units/crew = 112.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$50,364	<i>tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5</i>	
5.21.8 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	0.0	<i>tnks @</i>			<i>0 gallons: 0 SF Tanks: 0 CF @ 245 Lb/CF = 0 Lbs</i>	<i>FRP Tanks only; facility estimates 245#/CF</i>
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$0	<i>tank areas based u</i>	
5.21.9 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	400.0	<i>LF</i>			<i>4 tanks @ 100 LF/tank = 400 LF @ 4 Lb/LF = 1600 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	40.0	hours	\$39.00	\$1,560	400 LF @ 20 LF/hour 20.0 hours @ 2 units/crew = 40.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	20.0	hours	\$5.41	\$108	400 LF @ 20 LF/hour 20.0 hours @ 1 units/crew = 20.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$1,668	<i>in the absence of f rsm/up unit price = \$2.67/LF for smaller crew</i>	
5.21.10 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	4.0	hours	\$39.00	\$156	2.0 pumps @ 1 pump/hr 2.0 hours @ 2 units/crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	2.0	hours	\$5.41	\$11	2.0 pumps @ 1 pump/hr 2.0 hours @ 1 units/crew = 2.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$167	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.21.11 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	1.7	hours	\$39.00	\$66	25.0 CY @ 15 CY/hr = 1.7 hours @ 1 units/crew = 1.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.7	hours	\$45.00	\$77	25.0 CY @ 15 CY/hr = 1.7 hours @ 1 units/crew = 1.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	1.7	hours	\$30.03	\$51	25.0 CY @ 15 CY/hr = 1.7 hours @ 1 units/crew = 1.7 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	1.7	hours	\$5.20	\$9	25.0 CY @ 15 CY/hr = 1.7 hours @ 1 units/crew = 1.7 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$203	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	

5.21 AWTS (o/s leachtnkfrm) 4 tks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.21.12 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	157.2	TONS			25.0 CY debr + 15% kiln dust = 28.71 CY total total tonnage = 157.2 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	21.0	hours	\$39.00	\$819	157.2 tons @ 15 tons/hr @ 10.5 hours @ 2 units/crew = 21.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	31.4	hours	\$45.00	\$1,413	157.2 tons @ 15 tons/hr @ 10.5 hours @ 3 units/crew = 31.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	10.5	hours	\$19.18	\$201	157.2 tons @ 15 tons/hr @ 10.5 hours @ 1 units/crew = 10.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	10.5	hours	\$14.39	\$151	157.2 tons @ 15 tons/hr @ 10.5 hours @ 1 units/crew = 10.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	10.5	hours	\$329.70	\$3,462	157.2 tons @ 15 tons/hr @ 10.5 hours @ 1 units/crew = 10.5 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	10.5	hours	\$136.29	\$1,431	157.2 tons @ 15 tons/hr @ 10.5 hours @ 1 units/crew = 10.5 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	3.7 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	3.7 tons @ 20 ton/load = 0.2 loads	
Cement Kiln Dust - Mat'l&Delv Cost	3.7	tons	\$48.00	\$178		CWM actual 2011 costs
Encapsulation Containers (30-CY)	1.0	units	\$1,000.00	\$1,000	28.7 CYs @ 30 CY/unit = 1.0 containers	CWM actual 2011 costs
Rolloffs (30-CY)	10.0	hours	\$19.02	\$190	28.7 CYs @ 30 CY/unit = 1.0 rolloffs @ 10.5 hours/rolloff = 10.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$8,845	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.21.13 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	385.0	miles	\$3.25	\$1,251	28.7 CY @ 30 CY/load = 1.0 loads @ 385 miles/trip = 385 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	28.7	CY	\$337.50	\$9,686	28.7 CY @ 27 CF/CY = 775.2 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo (Subt: Assemb 5.21.7 - 5.21.13)				\$10,938		
				\$72,184	tank/piping/pump demolition, and offsite transportation & disposal (101, 102, & 103 only)	
5.21.14 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	194.7	hours	\$39.00	\$7,593	20446 SF @ 105 SF/hr = 194.7 hours @ 1 pers/crew = 194.7 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	194.7	hours	\$4.04	\$787	20446 SF @ 105 SF/hr = 194.7 hours @ 1 unit/crew = 194.7 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	194.7	hours	\$3.41	\$664	20446 SF @ 105 SF/hr = 194.7 hours @ 1 unit/crew = 194.7 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$9,044		
5.21.15 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	194.7	hours	\$39.00	\$7,593	20446 SF @ 105 SF/hr = 194.7 hours @ 1 pers/crew = 194.7 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	194.7	hours	\$4.04	\$787	20446 SF @ 105 SF/hr = 194.7 hours @ 1 unit/crew = 194.7 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	194.7	hours	\$3.41	\$664	20446 SF @ 105 SF/hr = 194.7 hours @ 1 unit/crew = 194.7 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$9,044		
5.21.16 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	10223.0	gal	\$0.0313	\$320	20446 SF @ 0.5 gal/sf/wa = 10223.0 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$477		

5.21 AWTS (o/s leachtnkfrm) 4 tks

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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5.21.17 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	32.7	hours	\$38.00	\$1,243	32.7 samp @ 0.5 hr/samp = 16.35 hours @ 2 pers/crew = 32.7 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	32.7	samp	\$83.33	\$2,725	20446 SF @ 625 SF/samp = 32.7 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$3,967		
<i>(Subt: Assemb 5.21.14 - 5.21.17)</i>				\$22,532	decontamination & sampling of SCA (Tanks 101, 102, and 103 only)	

5.21.18 Frac Tank 3 Closure						
Dismantle Tank/Return to Manuf.	1.0	unit	\$6,307.28	\$6,307	21000 gals: included above in 5.21.6	2004 costs * implicit deflator 2004 -2010
Subt - Frac Tank 3 Closure				\$6,307		
<i>(Subt: Assemb 5.21.18 - 5.21.18)</i>				\$6,307	only cost here is for tank dismantling & return ; liquid treatment costs included above in 5.21.6	

Total Non-Super Labor Hours 1086.9

5.21.19 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	1086.9 hours @ 8 hr/day = 135.9 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	34.0	days	\$9.00	\$306	1086.9 hours @ 8 hr/day = 135.9 days @ 25% "Mod C" days = 34.0 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	101.9	days	\$25.00	\$2,548	1086.9 hours @ 8 hr/day = 135.9 days @ 75% "C" days = 101.9 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	27.8	hours	\$75.00	\$2,085	1086.9 hours @ 2.5 hr/hr = 27.8 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$4,939		
5.21.20 Supervision					4.0 weeks for closure of 4 tanks	
Foreman	160.0	hours	\$65.00	\$10,400	4.0 weeks @ 40 hrs/wk = 160.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$10,400		
5.21.21 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	16.3	hours	\$130.00	\$2,119	1086.9 hours @ 0.015 hr/hr = 16.3 hours	Engineer rate: 2011 3rd party quote
Clerical	16.3	hours	\$45.00	\$734	1086.9 hours @ 0.015 hr/hr = 16.3 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$2,853		
<i>(Subt: Assemb 5.21.19 - 5.21.21)</i>				\$18,191		

5.21 AWTS (o/s leachtnkfrm) 4 tks	Direct Cost	Total	Basic	\$168,121
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5.21 AWTS (o/s leachtnkfrm) 4 tks			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$168,121	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$11,768	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$6,725	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$10,087	note: DEC uses 6%
Engineering During Construction	2.00%	\$3,362	note: DEC uses 2%
General Contractor Profit	6.00%	\$10,087	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$42,030	
Subt: AWTS (o/s leachtnkfrm) 4 ts		\$210,151	
Plus Contingency	10.00%	\$21,015	CWM and DEC 10%
Tot: AWTS (o/s leachtnkfrm) 4 tks- Basic		\$231,166	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.22 AWTS (stab mix pit tanks)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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5.22.1 Inventory Verification					prod'n rates: 50 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	2	hours	\$39.00	\$78	2 tanks @ 0.5 hour/tank = 1.0 hours @ 2 units/crew = 2.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$78		
<i>(Subt: Assemb 5.22.1 - 5.22.1)</i>					tanks: Mix Pit Tank 1 & Mix Pit Tank 2	

5.22.2 Stabilize Mix Pit Material					prod'n rate = 30 tons/hour = 240 tons/day; 1 CF = 50 Lbs; 1 CY = 1,350 Lbs	
<i>PROCESS TONS (incl kiln dust)</i>	156.5	TONS	n/a		40708 gals = 201.56 CY @ 0.675 ton/CY + 15% kiln dust = 156.5 tons	40,708 gals x 0.1337 gals/cf x 0.0374 cy/cf = 201.56 cy
Cement Kiln Dust - Mat'l&Delv Cost	20.4	tons	\$48.00	\$979	136.1 tons @ 15% kiln dust = 20.4 tons	CWM actual 2011 costs
Stabilization Cost	136.1	tons	\$25.00	\$3,403		CWM actual 2011 costs inc. labor & equipment
TCLP Testing - RCRA (EPA 1311)	2	samp	\$348.33	\$697	2 tanks @ 1 samp/tnk = 2.0 samples	RSM/UP p. 9-32 (33-02-1702); one sample per tank
Subt - Stab Mix Pit Tank Material				\$5,078	stabilize mix pit tank material	

5.22.3 Load Stabilized Material					facility include in stabilization cost	
Laborer	0.0	hours	\$39.00	\$0	Not required	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$50.00	\$0		loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.0	hours	\$14.39	\$0		RSM/HC p. 468 (line item 01 54 33 20 4610)
Dump Trailer (20 CY)	0.0	hours	\$14.95	\$0		RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Stab Mix Pit Tank Mat'l				\$0		

5.22.4 Offsite T&D - Stab Material						
Offsite Transportation - Solids	3012.6	miles	\$3.25	\$9,791	156.5 tons @ 20 tons/load = 7.8 loads @ 385 miles/trip = 3012.6 mile	Rate: transporters quote/site experience
Offsite Landfill Disposal - Solids	156.5	tons	\$133.00	\$20,815	156.5 tons	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite T&D - Stab Material				\$30,605	offsite T&D	
<i>(Subt: Assemb 5.22.2 - 5.22.4)</i>					onsite stabilization and offsite T&D of mix pit tank material	

5.22.5 Steel Tank Demolition					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 12 sf tank area	
No. of Tanks/Capacity/Area/Weight	2.0	tnks @			40708 gallons: 4112 SF Tanks: 343 CF @ 490 Lb/CF = 167907 Lt	Steel Tanks only; facility estimates 490#/CF
Laborer	61.7	hours	\$39.00	\$2,406	4112 SF @ 200 SF/hour 20.6 hours @ 3 units/crew = 61.7 hour	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	41.1	hours	\$45.00	\$1,850	4112 SF @ 200 SF/hour 20.6 hours @ 2 units/crew = 41.1 hour	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	20.6	hours	\$84.09	\$1,732	4112 SF @ 200 SF/hour 20.6 hours @ 1 units/crew = 20.6 hour	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	20.6	hours	\$34.40	\$709	4112 SF @ 200 SF/hour 20.6 hours @ 1 units/crew = 20.6 hour	2004 DEC Rate * Implicit Deflator
Claw Attachment	20.6	hours	\$2.47	\$51	4112 SF @ 200 SF/hour 20.6 hours @ 1 units/crew = 20.6 hour	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	20.6	hours	\$30.03	\$619	4112 SF @ 200 SF/hour 20.6 hours @ 1 units/crew = 20.6 hour	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	20.6	hours	\$86.31	\$1,778	4112 SF @ 200 SF/hour 20.6 hours @ 1 units/crew = 20.6 hour	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	20.6	hours	\$5.41	\$111	4112 SF @ 200 SF/hour 20.6 hours @ 1 units/crew = 20.6 hour	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$9,256	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	

5.22 AWTS (stab mix pit tanks)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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5.22.6 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
No. of Tanks/Capacity/Area/Weight	0.0	tnks @			0 gallons: 616 SF Tanks: 17 CF @ 245 Lb/CF = 4192 Lt	FRP Tanks only; facility estimates 245#/CF
Laborer	9.2	hours	\$39.00	\$359	616 SF @ 200 SF/hour 3.1 hours @ 3 units/crew = 9.2 hour	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	6.2	hours	\$45.00	\$279	616 SF @ 200 SF/hour 3.1 hours @ 2 units/crew = 6.2 hour	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	3.1	hours	\$84.09	\$261	616 SF @ 200 SF/hour 3.1 hours @ 1 units/crew = 3.1 hour	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	3.1	hours	\$34.40	\$107	616 SF @ 200 SF/hour 3.1 hours @ 1 units/crew = 3.1 hour	2004 DEC Rate * Implicit Deflator
Claw Attachment	3.1	hours	\$2.47	\$8	616 SF @ 200 SF/hour 3.1 hours @ 1 units/crew = 3.1 hour	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	3.1	hours	\$30.03	\$93	616 SF @ 200 SF/hour 3.1 hours @ 1 units/crew = 3.1 hour	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	3.1	hours	\$86.31	\$268	616 SF @ 200 SF/hour 3.1 hours @ 1 units/crew = 3.1 hour	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	616 SF @ 200 SF/hour 3.1 hours @ 0 units/crew = 0.0 hour	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$1,373	two tank covers for mix pit tanks	
5.22.7 Tank Piping Demolition						
Estimated Piping Length	0.0	LF	n/a			
Laborers	0.0	hours	\$39.00	\$0		
Welding Equipment	0.0	hours	\$5.41	\$0		
Subt - All Tanks' Piping Demolition	0.0	LF @	n/a	\$0	no piping associated with the mix pit tanks	
5.22.8 Tank Pump Demolition						
Laborers	0.0	hours	\$39.00	\$0		
Welding Equipment	0.0	hours	\$5.41	\$0		
Subt - All Tanks' Pump Demolition	0.0	ea @	n/a	\$0	no pumps associated with the mix pit tanks	
5.22.9 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.9	hours	\$39.00	\$35	13.3 CY @ 15 CY/hr = 0.9 hours @ 1 units/crew 0.9 hour	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.9	hours	\$45.00	\$41	13.3 CY @ 15 CY/hr = 0.9 hours @ 1 units/crew = 0.9 hour	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.9	hours	\$30.03	\$27	13.3 CY @ 15 CY/hr = 0.9 hours @ 1 units/crew = 0.9 hour	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.9	hours	\$5.20	\$5	13.3 CY @ 15 CY/hr = 0.9 hours @ 1 units/crew 0.9 hour	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$107	1 CY steel tank debris = to 324 SF @ 1" thick; and 1 CY FRP debris = to 972 SF @ 1/3" thick	
5.22.10 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
PROCESS TONS (incl kiln dust)	88.0	TONS	n/a		13.3 CY debr + 15% kiln dust = 15.32 CY total total tonnage = 88.0 ton	total tons derived from foregoing assemblies + kiln dust
Laborer	11.7	hours	\$39.00	\$456	88.0 tons @ 15 tons/hr @ 5.9 hours @ 2 units/crew = 11.7 hour	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	17.6	hours	\$45.00	\$792	88.0 tons @ 15 tons/hr @ 5.9 hours @ 3 units/crew = 17.6 hour	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	5.9	hours	\$19.18	\$113	88.0 tons @ 15 tons/hr @ 5.9 hours @ 1 units/crew = 5.9 hour	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	5.9	hours	\$14.39	\$85	88.0 tons @ 15 tons/hr @ 5.9 hours @ 1 units/crew = 5.9 hour	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	5.9	hours	\$329.70	\$1,945	88.0 tons @ 15 tons/hr @ 5.9 hours @ 1 units/crew = 5.9 hour	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	5.9	hours	\$136.29	\$804	88.0 tons @ 15 tons/hr @ 5.9 hours @ 1 units/crew = 5.9 hour	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	2.0	tons	\$0.00	\$0	2.0 tons	
Cement Kiln Dust - Delivery Cost	2.0	loads	\$0.00	\$0	2.0 tons @ 20 ton/load = 0.1 load:	
Cement Kiln Dust - Mat'l&Delv Cost	2.0	tons	\$48.00	\$96		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.5	units	\$1,000.00	\$500	15.3 CYs @ 30 CY/unit = 0.5 container:	CWM actual 2011 costs
Rolloffs (30-CY)	3.0	hours	\$19.02	\$57	15.3 CYs @ 30 CY/unit = 0.5 rolloffs @ 5.9 hours/rolloff = 3.0 hour	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$4,849	1 CY steel tank debris = to 324 SF @ 1" thick; and 1 CY FRP debris = to 972 SF @ 1/3" thick	

5.22 AWTS (stab mix pit tanks)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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5.22.11 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	192.5	miles	\$3.25	\$626	15.3 CY @ 30 CY/load = 0.5 loads @ 385 miles/trip = 192.5 mile	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	15.3	CY	\$337.50	\$5,164	15.3 CY @ 27 CF/CY = 413.7 C	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$5,789		
(Subt: Assemb 5.22.5 - 5.22.11)				\$21,375	tank/piping/pump demolition, and offsite transportation & disposal	

5.22.12 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	19.6	hours	\$39.00	\$764	2056 SF @ 105 SF/hr = 19.6 hours @ 1 unit/crew = 19.6 hour	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	19.6	hours	\$4.04	\$79	2056 SF @ 105 SF/hr = 19.6 hours @ 1 unit/crew = 19.6 hour	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	19.6	hours	\$3.41	\$67	2056 SF @ 105 SF/hr = 19.6 hours @ 1 unit/crew = 19.6 hour	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$910		

5.22.13 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	19.6	hours	\$39.00	\$764	2056 SF @ 105 SF/hr = 19.6 hours @ 1 unit/crew = 19.6 hour	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	19.6	hours	\$4.04	\$79	2056 SF @ 105 SF/hr = 19.6 hours @ 1 unit/crew = 19.6 hour	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	19.6	hours	\$3.41	\$67	2056 SF @ 105 SF/hr = 19.6 hours @ 1 unit/crew = 19.6 hour	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$910		

5.22.14 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hour	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 sample	analytical price: average of three quotes
On-site Water Disposal	8224	gal	\$0.0313	\$257	2056 SF @ 2.4 gal/sf/wa = 4934 gallons + 1.6 gal/sf/rinse = 3290 gallon	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$415		

5.22.15 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	3.3	hours	\$38.00	\$125	3.3 samp @ 0.5 hr/samp = 1.65 hours @ 2 pers/crew = 3.3 hour	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	3.3	samp	\$83.33	\$275	2056 SF @ 625 SF/samp = 3.3 sample	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$400		
(Subt: Assemb 5.22.12 - 5.22.15)				\$2,636	decontamination & sampling of SCA	

Total Non-Super Labor Hours 194.9

5.22.16 PPE Usage/H&S Planning					Level C @ 75%; Level D @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	194.9 hours @ 8 hr/day = 24.4 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	6.1	days	\$9.00	\$55	194.9 hours @ 8 hr/day = 24.4 days @ 25% "Mod C" days = 6.1 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	18.3	days	\$25.00	\$458	194.9 hours @ 8 hr/day = 24.4 days @ 75% "C" days = 18.3 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	4.9	hours	\$75.00	\$368	194.9 hours @ 2.5 hr/hr = 4.9 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$880		

5.22.17 Supervision					1.0 weeks for closure of 4 tanks	
Foreman	40	hours	\$65.00	\$2,600	1.0 weeks @ 40 hrs/wk = 40.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$2,600		

5.22 AWTS (stab mix pit tanks)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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5.22.18 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	2.9	hours	\$130.00	\$377	194.9 hours @ 0.015 hr/hr = 2.9 hours	Engineer rate: 2011 3rd party quote
Clerical	2.9	hours	\$45.00	\$131	194.9 hours @ 0.015 hr/hr = 2.9 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$508		
<i>(Subt: Assemb 5.22.16 - 5.22.18)</i>				\$3,987		

5.22 AWTS (stab mix pit tanks)	Direct Cost	Total	Basic	\$63,760
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5.22 AWTS (stab mix pit tanks)			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$63,760	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$4,463	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$2,550	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$3,826	note: DEC uses 6%
Engineering During Construction	2.00%	\$1,275	note: DEC uses 2%
General Contractor Profit	6.00%	\$3,826	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$15,940	
Subt: AWTS (stab mix pit tanks)		\$79,700	
Plus Contingency	10.00%	\$7,970	CWM and DEC 10%
Tot: AWTS (stab mix pit tanks)		\$87,670	

Cost References:

- "RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
- "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
- "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.23 AWTS (stab aqueous tanks)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.23.1 Inventory Verification					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	2.0	hours	\$39.00	\$78	2 tanks @ 0.5 hour/tank = 1.0 hours @ 2 units/crew = 2.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$78		
(Subt: Assemb 5.23.1 - 5.23.1)				\$78	tanks: TA-1 & TA-2	
5.23.2 Empty Tanks TA-1/TA-2					production rate = 1,650 gals/hr; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	HASP req's two: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	24.2	hours	\$6.31	\$153	40000 gals @ 1650 gals/hr = 24.2 hours @ 1 units/crew = 24.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanks				\$153		
5.23.3 Transport Tankers Onsite					production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	3.6	hours	\$32.45	\$117	40000 gals @ 5500 gals/load = 7.3 loads @ 0.5 hrs/trip = 3.6 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	3.6	hours	\$6.31	\$23	40000 gals @ 5500 gals/load = 7.3 loads @ 0.5 hrs/trip = 3.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transport Tankers Onsite				\$140		
5.23.4 Empty Tankers					production rate = 0.5 hours/sample for two techs; rate same as facility's	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	HASP req's two: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	24.2	hours	\$6.31	\$153	40000 gals @ 1650 gals/hr = 24.2 hours @ 1 units/crew = 24.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tankers				\$153		
(Subt: Assemb 5.23.2 - 5.23.4)				\$445		
5.23.5 Onsite Aqueous Treatment					mildly-contaminated liquid wastes	
Onsite Aqueous Treatment - Tanks	40000.0	gals	\$0.0313	\$1,252	40000 gals	AWTS site waters waste treat price
Subt - Onsite Aqueous Treatment				\$1,252		
(Subt: Assemb 5.23.5 - 5.23.5)				\$1,252	onsite treatment of tanks' waste liquids	
5.23.6 Steel Tank Demolition					prod'n rate = 200 SF/hr ; 1 CF debris per 36 sf tank area	
No. of Tanks/Capacity/Area/Weight	2.0	tnks @			40000 gallons: 2112 SF Tanks: 59 CF @ 490 Lb/CF = 28747 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	31.7	hours	\$39.00	\$1,236	2112 SF @ 200 SF/hour 10.6 hours @ 3 units/crew = 31.7 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	21.1	hours	\$45.00	\$950	2112 SF @ 200 SF/hour 10.6 hours @ 2 units/crew = 21.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	10.6	hours	\$84.09	\$891	2112 SF @ 200 SF/hour 10.6 hours @ 1 units/crew = 10.6 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	10.6	hours	\$34.40	\$365	2112 SF @ 200 SF/hour 10.6 hours @ 1 units/crew = 10.6 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	10.6	hours	\$2.47	\$26	2112 SF @ 200 SF/hour 10.6 hours @ 1 units/crew = 10.6 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	10.6	hours	\$30.03	\$318	2112 SF @ 200 SF/hour 10.6 hours @ 1 units/crew = 10.6 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	10.6	hours	\$86.31	\$915	2112 SF @ 200 SF/hour 10.6 hours @ 1 units/crew = 10.6 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	10.6	hours	\$5.41	\$57	2112 SF @ 200 SF/hour 10.6 hours @ 1 units/crew = 10.6 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$4,759	tank areas based u	

5.23 AWTS (stab aqueous tanks)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.23.7 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	0.0	<i>tnks @</i>			<i>0 gallons: 0 SF Tanks: 0 CF @ 245 Lb/CF = 0 Lbs</i>	<i>FRP Tanks only; facility estimates 245#/CF</i>
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$0	<i>tank areas based i</i>	
5.23.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	200.0	<i>LF</i>			<i>2 tanks @ 100 LF/tank = 200 LF @ 4 Lb/LF = 800 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	20.0	hours	\$39.00	\$780	200 LF @ 20 LF/hour 10.0 hours @ 2 units/crew = 20.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	10.0	hours	\$5.41	\$54	200 LF @ 20 LF/hour 10.0 hours @ 1 units/crew = 10.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$834	<i>in the absence of f</i>	
5.23.9 Tank Pump Demolition					prod'n rate = 1 pump/hr assume 0.5 pumps/tank	
Laborers	2.0	hours	\$39.00	\$78	1.0 pumps @ 1 pump/hr 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	1.0	hours	\$5.41	\$5	1.0 pumps @ 1 pump/hr 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$83	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.23.10 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.2	hours	\$39.00	\$8	3.1 CY @ 15 CY/hr = 0.2 hours @ 1 units/crew 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.2	hours	\$45.00	\$9	3.1 CY @ 15 CY/hr = 0.2 hours @ 1 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.2	hours	\$30.03	\$6	3.1 CY @ 15 CY/hr = 0.2 hours @ 1 units/crew = 0.2 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.2	hours	\$5.20	\$1	3.1 CY @ 15 CY/hr = 0.2 hours @ 1 units/crew 0.2 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$24	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	

5.23 AWTS (stab aqueous tanks)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.23.11 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	15.4	TONS			3.1 CY debr + 15% kiln dust = 3.61 CY total total tonnage = 15.4 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	2.0	hours	\$39.00	\$78	15.4 tons @ 15 tons/hr @ 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	3.1	hours	\$45.00	\$140	15.4 tons @ 15 tons/hr @ 1.0 hours @ 3 units/crew = 3.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	1.0	hours	\$19.18	\$19	15.4 tons @ 15 tons/hr @ 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	1.0	hours	\$14.39	\$14	15.4 tons @ 15 tons/hr @ 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	1.0	hours	\$329.70	\$330	15.4 tons @ 15 tons/hr @ 1.0 hours @ 1 units/crew = 1.0 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	1.0	hours	\$136.29	\$136	15.4 tons @ 15 tons/hr @ 1.0 hours @ 1 units/crew = 1.0 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.5 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.5 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.5	tons	\$48.00	\$24		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.1	units	\$1,000.00	\$100	3.6 CYs @ 30 CY/unit = 0.1 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.1	hours	\$19.02	\$2	3.6 CYs @ 30 CY/unit = 0.1 rolloffs @ 1.0 hours/rolloff = 0.1 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$843	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.23.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	3.6 CY @ 30 CY/load = 0.1 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	3.6	CY	\$337.50	\$1,215	3.6 CY @ 27 CF/CY = 97.4 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$1,340		
<i>(Subt: Assemb 5.23.6 - 5.23.12)</i>				\$7,883	tank/piping/pump demolition, and offsite transportation & disposal	
5.23.13 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	23.0	hours	\$39.00	\$897	2411 SF @ 105 SF/hr = 23.0 hours @ 1 pers/crew = 23.0 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	23.0	hours	\$4.04	\$93	2411 SF @ 105 SF/hr = 23.0 hours @ 1 unit/crew = 23.0 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	23.0	hours	\$3.41	\$78	2411 SF @ 105 SF/hr = 23.0 hours @ 1 unit/crew = 23.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$1,068		
5.23.14 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	23.0	hours	\$39.00	\$897	2411 SF @ 105 SF/hr = 23.0 hours @ 1 pers/crew = 23.0 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	23.0	hours	\$4.04	\$93	2411 SF @ 105 SF/hr = 23.0 hours @ 1 unit/crew = 23.0 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	23.0	hours	\$3.41	\$78	2411 SF @ 105 SF/hr = 23.0 hours @ 1 unit/crew = 23.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$1,068		
5.23.15 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	2205.5	gal	\$0.0313	\$69	2411 SF @ 0.5 gal/sf/wa = 2205.5 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$226		

5.23 AWTS (stab aqueous tanks)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.23.16 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	3.9	hours	\$38.00	\$148	3.9 samp @ 0.5 hr/samp = 1.95 hours @ 2 pers/crew = 3.9 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	3.9	samp	\$83.33	\$325	2411 SF @ 625 SF/samp = 3.9 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemb 5.23.13 - 5.23.16)				\$473		
				\$2,836	decontamination & sampling of SCA	

Total Non-Super Labor Hours 133.3

5.23.17 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	133.3 hours @ 8 hr/day = 16.7 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	4.2	days	\$9.00	\$38	133.3 hours @ 8 hr/day = 16.7 days @ 25% "Mod C" days = 4.2 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	12.5	days	\$25.00	\$313	133.3 hours @ 8 hr/day = 16.7 days @ 75% "C" days = 12.5 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	3.3	hours	\$75.00	\$248	133.3 hours @ 2.5% hr/hr = 3.3 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$598		
5.23.18 Supervision					0.6 weeks supervisory time for closure of 2 tanks	
Foreman	24.0	hours	\$65.00	\$1,560	0.6 weeks @ 40 hrs/wk = 24.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$1,560		
5.23.19 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	2.0	hours	\$130.00	\$260	133.3 hours @ 0.015 hr/hr = 2.0 hours	Engineer rate: 2011 3rd party quote
Clerical	2.0	hours	\$45.00	\$90	133.3 hours @ 0.015 hr/hr = 2.0 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification (Subt: Assemb 5.23.17 - 5.23.19)				\$350		
				\$2,508		

5.23 AWTS (stab aqueous tanks)	Direct Cost	Total	Basic	\$15,002
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5.23 AWTS (stab aqueous tanks)			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$15,002	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$1,050	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$600	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$900	note: DEC uses 6%
Engineering During Construction	2.00%	\$300	note: DEC uses 2%
General Contractor Profit	6.00%	\$900	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$3,750	
Subt: AWTS (stab aqueous tnks)		\$18,752	
Plus Contingency	10.00%	\$1,875	CWM and DEC 10%
Tot: AWTS (stab aqueous tanks)		\$20,628	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.24 AWTS (i/s trk wash bld) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.24.1 Inventory Verification						
Laborer	1.0	hours	\$39.00	\$39	prod'n rates: 50 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required 1 tanks @ 0.5 hour/tank = 0.5 hours @ 2 units/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$39		
(Subt: Assemb 5.24.1 - 5.24.1)				\$39	tank: T-120	
5.24.2 Empty Tank T-120						
Laborer	0.0	hours	\$39.00	\$0	production rate = 1,650 gals/hr; RSM/UP p. 9-171 (33-19-0101) Labor included in third party operation of AWTS	HASP req's two: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	1.0	hours	\$6.31	\$6	1650 gals @ 1650 gals/hr = 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank T-120				\$6		
5.24.3 Transport Tanker Onsite						
Road Tractor	0.2	hours	\$32.45	\$6	production rate = 0.5 hours/trip for onsite travel 1650 gals @ 5500 gals/load = 0.3 loads @ 0.5 hours/trip = 0.2 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.2	hours	\$6.31	\$1	1650 gals @ 5500 gals/load = 0.3 loads @ 0.5 hours/trip = 0.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Onsite Tanker Transport				\$8		
5.24.4 Empty Tanker						
Laborer	0.0	hours	\$39.00	\$0	production rate = 1,650 gals/hr; RSM/UP p. 9-171 (33-19-0101) Labor included in third party operation of AWTS	HASP req's two: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	1.0	hours	\$6.31	\$6	1650.0 gals @ 1650 gals/hr = 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty tanker				\$6		
(Subt: Assemb 5.24.2 - 5.24.4)				\$20		
5.24.5 Onsite Aqueous Treatment						
Onsite Aqueous Treatment - Tanks	1650.0	gals	\$0.0453	\$75	unit price = \$0.0453/gal; contents pumped to tankers labor & equip. in Assem. 13.0 1650 gals	AWTS average cost for all wastewater
Subt - Onsite Aqueous Treatment				\$75		
(Subt: Assemb 5.24.5 - 5.24.5)				\$75	onsite treatment of tanks' waste liquids	
5.24.6 Steel Tank Demolition						
No. of Tanks/Capacity/Area/Weight	0.0	tnks @			prod'n rate = 200 SF/hr ; 1 CF debris per 36 sf tank area 0 gallons: 0 SF Tanks: 0 CF @ 490 Lb/CF = 0 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$0	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	

Overall Site-Wide Closure Cost Estimate
 NYSDEC OHMS Document No. 201469232-00040
 6/6/2012

5.24 AWTS (i/s trk wash bld) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.24.7 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	1.0	tnks @			1650 gallons: 246 SF Tanks: 7 CF @ 245 Lb/CF = 1674 Lbs	FRP Tanks only; facility estimates 245#/CF
Laborer	3.7	hours	\$39.00	\$144	246 SF @ 200 SF/hour 1.2 hours @ 3 units/crew = 3.7 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	2.5	hours	\$45.00	\$113	246 SF @ 200 SF/hour 1.2 hours @ 2 units/crew = 2.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	1.2	hours	\$84.09	\$101	246 SF @ 200 SF/hour 1.2 hours @ 1 units/crew = 1.2 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	1.2	hours	\$34.40	\$41	246 SF @ 200 SF/hour 1.2 hours @ 1 units/crew = 1.2 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	1.2	hours	\$2.47	\$3	246 SF @ 200 SF/hour 1.2 hours @ 1 units/crew = 1.2 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	1.2	hours	\$30.03	\$36	246 SF @ 200 SF/hour 1.2 hours @ 1 units/crew = 1.2 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	1.2	hours	\$86.31	\$104	246 SF @ 200 SF/hour 1.2 hours @ 1 units/crew = 1.2 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	246 SF @ 200 SF/hour 1.2 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$542	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.24.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	100.0	LF			1 tanks @ 100 LF/tank = 100 LF @ 4 Lb/LF = 400 Lbs	combined Steel and FRP Tanks' Piping
Laborers	10.0	hours	\$39.00	\$390	100 LF @ 20 LF/hour 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5.0	hours	\$5.41	\$27	100 LF @ 20 LF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$417	in the absence of facility data, piping assumed to average 100 LF/tank	
5.24.9 Tank Pump Demolition					prod'n rate = 1 pump/hr assume 0.5 pumps/tank	
Laborers	1.0	hours	\$39.00	\$39	0.5 pumps @ 1 pump/hr 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	0.5	hours	\$5.41	\$3	0.5 pumps @ 1 pump/hr 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$42	pump weight = 250# each; in the absence of facility data, one pump per two tanks is estimated	
5.24.10 Load Tank Demo Debris					production rate = 15 CY/hour;	
Laborer	0.05	hours	\$39.00	\$2	0.7 CY @ 15 CY/hr = 0.05 hours @ 1 units/crew = 0.05 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.05	hours	\$45.00	\$2	0.7 CY @ 15 CY/hr = 0.05 hours @ 1 units/crew = 0.05 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.05	hours	\$30.03	\$2	0.7 CY @ 15 CY/hr = 0.05 hours @ 1 units/crew = 0.05 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.05	hours	\$5.20	\$0	0.7 CY @ 15 CY/hr = 0.05 hours @ 1 units/crew = 0.05 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$6	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.24.11 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	1.2	TONS			0.7 CY debr + 15% kiln dust = 0.84 CY total total tonnage = 1.2 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.2	hours	\$39.00	\$8	1.2 tons @ 15 tons/hr @ 0.1 hours @ 2 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.2	hours	\$45.00	\$9	1.2 tons @ 15 tons/hr @ 0.1 hours @ 3 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.1	hours	\$19.18	\$2	1.2 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.1	hours	\$14.39	\$1	1.2 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.1	hours	\$329.70	\$33	1.2 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.1	hours	\$136.29	\$14	1.2 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.1 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.1 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.1	tons	\$48.00	\$5		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.0	units	\$1,000.00	\$27	0.8 CYs @ 30 CY/unit = 0.0267 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.027	hours	\$19.02	\$1	0.8 CYs @ 30 CY/unit = 0.0 rolloffs @ 0.1 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$99	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	

5.24 AWTS (i/s trk wash bld) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.24.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	0.8 CY @ 30 CY/load = 0.0 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	0.8	CY	\$337.50	\$270	0.8 CY @ 27 CF/CY = 22.8 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo (Subt: Assemb 5.24.6 - 5.24.12)				\$395 \$1,500	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	

5.24.13 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	1.7	hours	\$39.00	\$66	175 SF @ 105 SF/hr = 1.7 hours @ 1 pers/crew = 1.7 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	1.7	hours	\$4.04	\$7	175 SF @ 105 SF/hr = 1.7 hours @ 1 unit/crew = 1.7 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	1.7	hours	\$3.41	\$6	175 SF @ 105 SF/hr = 1.7 hours @ 1 unit/crew = 1.7 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$79		

5.24.14 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	1.7	hours	\$39.00	\$66	175 SF @ 105 SF/hr = 1.7 hours @ 1 pers/crew = 1.7 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	1.7	hours	\$4.04	\$7	175 SF @ 105 SF/hr = 1.7 hours @ 1 unit/crew = 1.7 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	1.7	hours	\$3.41	\$6	175 SF @ 105 SF/hr = 1.7 hours @ 1 unit/crew = 1.7 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$79		

5.24.15 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	87.5	gal	\$0.0313	\$3	175 SF @ 2.4 gal/sf/wa = 87.5 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$160		

5.24.16 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	0.3	hours	\$38.00	\$11	0.3 samp @ 0.5 hr/samp = 0.15 hours @ 2 pers/crew = 0.3 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	0.3	samp	\$83.33	\$25	175 SF @ 625 SF/samp = 0.3 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemb 5.24.13 - 5.24.16)				\$36 \$354	<i>decontamination & sampling of SCA</i>	

Total Non-Super Labor Hours 23.5

5.24.17 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	23.5 hours @ 8 hr/day = 2.9 days @ 0% "D" days = 1.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	0.7	days	\$9.00	\$6	23.5 hours @ 8 hr/day = 2.9 days @ 25% "Mod C" days = 0.7 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	2.2	days	\$25.00	\$55	23.5 hours @ 8 hr/day = 2.9 days @ 75% "C" days = 2.2 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.6	hours	\$75.00	\$45	23.5 hours @ 2.5 hr/hr = 0.6 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$106		
5.24.18 Supervision					0.2 weeks supervisory time for closure of 1 tanks	
Foreman	8.0	hours	\$65.00	\$520	0.2 weeks @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520		

5.24 AWTS (i/s trk wash bld) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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5.24.19 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.4	hours	\$130.00	\$52	23.5 hours @ 0.015 hr/hr = 0.4 hours	Engineer rate: 2011 3rd party quote
Clerical	0.4	hours	\$45.00	\$18	23.5 hours @ 0.015 hr/hr = 0.4 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$70		
<i>(Subt: Assemb 5.24.17 - 5.24.19)</i>				\$696		

5.24 AWTS (i/s trk wash bld) 1 tnk	Direct Cost	Total	Basic	\$2,685
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5.24 AWTS (i/s trk wash bld) 1 tnk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$2,685	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$188	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$107	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$161	note: DEC uses 6%
Engineering During Construction	2.00%	\$54	note: DEC uses 2%
General Contractor Profit	6.00%	\$161	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$671	
Subt: AWTS (i/s trk wash bld) 1 tk		\$3,356	
Plus Contingency	10.00%	\$336	CWM and DEC 10%
Tot: AWTS (i/s trk wash bld) 1 tks		\$3,692	

Cost References:

- "RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
- "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
- "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.25 AWTS (i/s A wst awt bld) 2 tk

Basic Closure Activities Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.25.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	2.0	hours	\$39.00	\$78	2 tanks @ 0.5 hour/tank = 1.0 hours @ 2 units/crew = 2.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$78		
(Subt: Assemb 5.25.1 - 5.25.1)				\$78	tanks: T-8001 & T-8002	
5.25.2 Onsite Aqueous Treatment						
					liquid wastes pumped directly from tanks into AWTS	
Onsite Aqueous Treatment - Tanks	5550.0	gals	\$0.1526	\$847	5550 gals	AWTS cost for groundwater
Subt - Onsite Aqueous Treatment				\$847		
(Subt: Assemb 5.25.2 - 5.25.2)				\$847	onsite treatment of tanks' waste liquids	
5.25.3 Steel Tank Demolition						
					prod'n rate = 200 SF/hr ; 1 CF debris per 36 sf tank area	
No. of Tanks/Capacity/Area/Weight	1.0	tnks @		n/a	5000 gallons: 427 SF Tanks: 12 CF @ 490 Lb/CF = 5812 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	6.4	hours	\$39.00	\$250	427 SF @ 200 SF/hour 2.1 hours @ 3 units/crew = 6.4 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	4.3	hours	\$45.00	\$194	427 SF @ 200 SF/hour 2.1 hours @ 2 units/crew = 4.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	2.1	hours	\$84.09	\$177	427 SF @ 200 SF/hour 2.1 hours @ 1 units/crew = 2.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	2.1	hours	\$34.40	\$72	427 SF @ 200 SF/hour 2.1 hours @ 1 units/crew = 2.1 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	2.1	hours	\$2.47	\$5	427 SF @ 200 SF/hour 2.1 hours @ 1 units/crew = 2.1 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	2.1	hours	\$30.03	\$63	427 SF @ 200 SF/hour 2.1 hours @ 1 units/crew = 2.1 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	2.1	hours	\$86.31	\$181	427 SF @ 200 SF/hour 2.1 hours @ 1 units/crew = 2.1 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	2.1	hours	\$5.41	\$11	427 SF @ 200 SF/hour 2.1 hours @ 1 units/crew = 2.1 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$953	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.25.4 FRP Tank Demolition						
					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
No. of Tanks/Capacity/Area/Weight	1.0	tnks @		n/a	550 gallons: 85 SF Tanks: 2 CF @ 245 Lb/CF = 578 Lbs	FRP Tanks only; facility estimates 245#/CF
Laborer	1.3	hours	\$39.00	\$51	85 SF @ 200 SF/hour 0.4 hours @ 3 units/crew = 1.3 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.9	hours	\$45.00	\$41	85 SF @ 200 SF/hour 0.4 hours @ 2 units/crew = 0.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.4	hours	\$84.09	\$34	85 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.4	hours	\$34.40	\$14	85 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.4	hours	\$2.47	\$1	85 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.4	hours	\$30.03	\$12	85 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.4	hours	\$86.31	\$35	85 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	85 SF @ 200 SF/hour 0.4 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$186	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.25.5 Tank Piping Demolition						
					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
Estimated Piping Length	200.0	LF		n/a	2 tanks @ 100 LF/tank = 200 LF @ 4 Lb/LF = 800 Lbs	combined Steel and FRP Tanks' Piping
Laborers	20.0	hours	\$39.00	\$780	200 LF @ 20 LF/hour 10.0 hours @ 2 units/crew = 20.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	10.0	hours	\$5.41	\$54	200 LF @ 20 LF/hour 10.0 hours @ 1 units/crew = 10.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$834	in the absence of facility data, piping assumed to average 100 LF/tank	

5.25 AWTS (i/s A wst awt bld) 2 tk

Basic Closure Activities Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.25.6 Tank Pump Demolition						
					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	2.0	hours	\$39.00	\$78	1.0 pumps @ 1 pump/hr = 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	1.0	hours	\$5.41	\$5	1.0 pumps @ 1 pump/hr = 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$83	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.25.7 Load Tank Demo Debris						
					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.1	hours	\$39.00	\$4	1.5 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.1	hours	\$45.00	\$5	1.5 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.1	hours	\$30.03	\$3	1.5 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.1	hours	\$5.20	\$1	1.5 CY @ 15 CY/hr = 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$12	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.25.8 Uni'd Stabilize/Encapsulate						
					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
PROCESS TONS (incl kiln dust)	3.9	TONS			1.5 CY debr + 15% kiln dust = 1.71 CY total total tonnage = 3.9 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.5	hours	\$39.00	\$20	3.9 tons @ 15 tons/hr @ 0.3 hours @ 2 units/crew = 0.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.8	hours	\$45.00	\$36	3.9 tons @ 15 tons/hr @ 0.3 hours @ 3 units/crew = 0.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.3	hours	\$19.18	\$6	3.9 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.3	hours	\$14.39	\$4	3.9 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.3	hours	\$329.70	\$99	3.9 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.3	hours	\$136.29	\$41	3.9 tons @ 15 tons/hr @ 0.3 hours @ 1 units/crew = 0.3 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.2 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.2 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.2	tons	\$48.00	\$10		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.1	units	\$1,000.00	\$100	1.7 CYs @ 30 CY/unit = 0.1 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.0	hours	\$19.02	\$0	1.7 CYs @ 30 CY/unit = 0.1 rolloffs @ 0.3 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$315	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	
5.25.9 Offsite T&D - Tank Demo						
					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	1.7 CY @ 30 CY/load = 0.1 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	1.7	CY	\$337.50	\$574	1.7 CY @ 27 CF/CY = 46.3 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$699		
(Subt: Assemb 5.25.3 - 5.25.9)				\$3,082	<i>tank/piping/pump demolition, and offsite transportation & disposal</i>	
5.25.10 Decon SCA (wash)						
					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	5.6	hours	\$39.00	\$218	592 SF @ 105 SF/hr = 5.6 hours @ 1 pers/crew = 5.6 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	5.6	hours	\$4.04	\$23	592 SF @ 105 SF/hr = 5.6 hours @ 1 unit/crew = 5.6 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	5.6	hours	\$3.41	\$19	592 SF @ 105 SF/hr = 5.6 hours @ 1 unit/crew = 5.6 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$260		

5.25 AWTS (i/s A wst awt bld) 2 tk

Basic Closure Activities Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.25.11 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	5.6	hours	\$39.00	\$218	592 SF @ 105 SF/hr = 5.6 hours @ 1 pers/crew = 5.6 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	5.6	hours	\$4.04	\$23	592 SF @ 105 SF/hr = 5.6 hours @ 1 unit/crew = 5.6 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	5.6	hours	\$3.41	\$19	592 SF @ 105 SF/hr = 5.6 hours @ 1 unit/crew = 5.6 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$260		
5.25.12 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	296.0	gal	\$0.0313	\$9	592 SF @ 0.5 gal/sf/wa = 296 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$167		
5.25.13 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	0.9	hours	\$38.00	\$34	0.9 samp @ 0.5 hr/samp = 0.45 hours @ 2 pers/crew = 0.9 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	0.9	samp	\$83.33	\$75	592 SF @ 625 SF/samp = 0.9 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$109		
(Subt: Assemb 5.25.10 - 5.25.13)				\$796	decontamination & sampling of SCA	

Total Non-Super Labor Hours 51.6

5.25.14 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	63.0 hours @ 8 hr/day = 7.9 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	2.0	days	\$9.00	\$18	63.0 hours @ 8 hr/day = 7.9 days @ 25% "Mod C" days = 2.0 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	5.9	days	\$25.00	\$148	63.0 hours @ 8 hr/day = 7.9 days @ 75% "C" days = 5.9 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	1.6	hours	\$75.00	\$120	63.0 hours @ 2.5% hr/hr = 1.6 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$286		
5.25.15 Supervision					0.2 weeks supervisory time for closure of 2 tanks	
Foreman	8.0	hours	\$65.00	\$520	0.2 weeks @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520		
5.25.16 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.9	hours	\$130.00	\$117	63.0 hours @ 0.015 hr/hr = 0.9 hours	Engineer rate: 2011 3rd party quote
Clerical	0.9	hours	\$45.00	\$41	63.0 hours @ 0.015 hr/hr = 0.9 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$158		
(Subt: Assemb 5.25.14 - 5.25.16)				\$963		

5.25 AWTS (i/s A wst awt bld) 2 tk	Direct Cost	Total	Basic	\$5,766
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5.25 AWTS (i/s A wst awt bld) 2 tk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs		\$5,766	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$404	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$231	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$346	note: DEC uses 6%
Engineering During Construction	2.00%	\$115	note: DEC uses 2%
General Contractor Profit	6.00%	\$346	Note DEC adds 6%
Indirect Costs	25.00%	\$1,442	
Subt: AWTS (i/s A wes awt) 2 tks		\$7,208	
Plus Contingency	10.00%	\$721	CWM and DEC 10%
Tot: AWTS (i/s A west awt) 2 tnks		\$7,928	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.26 AWTS (i/s A south SLF3) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.26.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	1.0	hours	\$39.00	\$39	1 tanks @ 0.5 hour/tank = 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$39		
(Subt: Assemb 5.26.1 - 5.26.1)				\$39	tank: T-8004	
5.26.2 Empty Tank T-8004						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.3	hours	\$6.31	\$2	550 gals @ 1650 gals/hr = 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank				\$2		
5.26.3 Transport Tanker Onsite						
					production rate = 0.5 hours/trip for onsite transport	
Tractor	0.1	hours	\$32.45	\$3	550 SF @ 5500 gals/load = 0.1 loads @ 0.5 hours/trip = 0.1 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.1	hours	\$6.31	\$1	550 SF @ 5500 gals/load = 0.1 loads @ 0.5 hours/trip = 0.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Onsite Tanker Transport				\$4		
5.26.4 Empty Tanker						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.3	hours	\$6.31	\$2	550.0 gals @ 1650 gals/hr = 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanker				\$2		
(Subt: Assemb 5.26.2 - 5.26.4)				\$8		
5.26.5 Onsite Aqueous Treatment						
					liquid wastes transferred to AWTS by tankers	
Onsite Aqueous Treatment - Tanks	550.0	gals	\$0.1526	\$84	550 gals	AWTS cost for groundwater
Subt - Onsite Aqueous Treatment				\$84		
(Subt: Assemb 5.26.5 - 5.26.5)				\$84	onsite treatment of tanks' waste liquids	
5.26.6 Steel Tank Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
No. of Tanks/Capacity/Area/Weight	0.0	tnks @			0 gallons: 0 SF Tanks: 0 CF @ 490 Lb/CF = 0 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$0	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	

5.26 AWTS (i/s A south SLF3) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.26.7 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	1.0	tnks @			550 gallons: 85 SF Tanks: 2 CF @ 245 Lb/CF = 578 Lbs	FRP Tanks only; facility estimates 245#/CF
Laborer	1.3	hours	\$39.00	\$51	85 SF @ 200 SF/hour 0.4 hours @ 3 units/crew = 1.3 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.9	hours	\$45.00	\$41	85 SF @ 200 SF/hour 0.4 hours @ 2 units/crew = 0.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.4	hours	\$84.09	\$34	85 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.4	hours	\$34.40	\$14	85 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.4	hours	\$2.47	\$1	85 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.4	hours	\$30.03	\$12	85 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.4	hours	\$86.31	\$35	85 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	85 SF @ 200 SF/hour 0.4 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$186	tank areas based upc	
5.26.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	100.0	LF			1 tanks @ 100 LF/tank = 100 LF @ 4 Lb/LF = 400 Lbs	combined Steel and FRP Tanks' Piping
Laborers	10.0	hours	\$39.00	\$390	100 LF @ 20 LF/hour 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5.0	hours	\$5.41	\$27	100 LF @ 20 LF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$417	in the absence of faci	
5.26.9 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	1.0	hours	\$39.00	\$39	0.5 pumps @ 1 pump/hr 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	0.5	hours	\$5.41	\$3	0.5 pumps @ 1 pump/hr 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$42	pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated	
5.26.10 Load Tank Demo Debris					production rate = 15 C no separate facility estimate - part of total demo cost	
Laborer	0.0	hours	\$39.00	\$0	0.6 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0.6 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.0	hours	\$30.03	\$0	0.6 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.0	hours	\$5.20	\$0	0.6 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$0	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	

5.26 AWTS (i/s A south SLF3) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.26.11 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	0.6	TONS			0.6 CY debr + 15% kiln dust = 0.65 CY total total tonnage = 0.6 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.1	hours	\$39.00	\$4	0.6 tons @ 15 tons/hr @ 0.0 hours @ 2 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.1	hours	\$45.00	\$5	0.6 tons @ 15 tons/hr @ 0.0 hours @ 3 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.0	hours	\$19.18	\$0	0.6 tons @ 15 tons/hr @ 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.0	hours	\$14.39	\$0	0.6 tons @ 15 tons/hr @ 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.0	hours	\$329.70	\$0	0.6 tons @ 15 tons/hr @ 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.0	hours	\$136.29	\$0	0.6 tons @ 15 tons/hr @ 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.1	tons	\$0.00	\$0	0.1 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.1 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.1	tons	\$48.00	\$5		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.0	units	\$1,000.00	\$0	0.7 CYs @ 30 CY/unit = 0.0 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.0	hours	\$19.02	\$0	0.7 CYs @ 30 CY/unit = 0.0 rolloffs @ 0.0 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$13	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.26.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	0.7 CY @ 30 CY/load = 0.0 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	0.7	CY	\$337.50	\$236	0.7 CY @ 27 CF/CY = 17.7 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$361		
(Subt: Assemb 5.26.6 - 5.26.12)				\$1,019	tank/piping/pump demolition, and offsite transportation & disp	
5.26.13 Decon SCA (wash)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	1.9	hours	\$39.00	\$74	204 SF @ 105 SF/hr = 1.9 hours @ 1 pers/crew = 1.9 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	1.9	hours	\$4.04	\$8	204 SF @ 105 SF/hr = 1.9 hours @ 1 unit/crew = 1.9 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	1.9	hours	\$3.41	\$6	204 SF @ 105 SF/hr = 1.9 hours @ 1 unit/crew = 1.9 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (wash)				\$88		
5.26.14 Decon SCA (rinse)					production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	1.9	hours	\$39.00	\$74	204 SF @ 105 SF/hr = 1.9 hours @ 1 pers/crew = 1.9 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	1.9	hours	\$4.04	\$8	204 SF @ 105 SF/hr = 1.9 hours @ 1 unit/crew = 1.9 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	1.9	hours	\$3.41	\$6	204 SF @ 105 SF/hr = 1.9 hours @ 1 unit/crew = 1.9 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon SCA (rinse)				\$88		
5.26.15 Decon Water Samp/Disp					production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	102.0	gal	\$0.0313	\$3	204 SF @ 0.5 gal/sf/wa = 102 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$160		

5.26 AWTS (i/s A south SLF3) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.26.16 PCB Wipe Samples					No TCLP analyses necessary according to site-wide closure plan	
Technician	0.3	hours	\$38.00	\$11	0.3 samp @ 0.5 hr/samp = 0.15 hours @ 2 pers/crew = 0.3 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0.0	samp	\$446.67	\$0		analytical price: average of three quotes
PCB Analysis (SW 8080)	0.3	samp	\$83.33	\$25	204 SF @ 625 SF/samp = 0.3 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemb 5.26.13 - 5.26.16)				\$36		
				\$373	decontamination & sampling of SCA	

Total Non-Super Labor Hours 19.6

5.26.17 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	19.6 hours @ 8 hr/day = 2.5 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	0.6	days	\$9.00	\$5	19.6 hours @ 8 hr/day = 2.5 days @ 25% "Mod C" days = 0.6 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	1.9	days	\$25.00	\$48	19.6 hours @ 8 hr/day = 2.5 days @ 75% "C" days = 1.9 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.5	hours	\$75.00	\$38	19.6 hours @ 2.5% hr/hr = 0.5 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$90		
5.26.18 Supervision					0.1 weeks supervisory time for closure of 1 tank	
Foreman	4.0	hours	\$65.00	\$260	0.1 weeks @ 40 hrs/wk = 4.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$260		
5.26.19 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.3	hours	\$130.00	\$39	19.6 hours @ 0.015 hr/hr = 0.3 hours	Engineer rate: 2011 3rd party quote
Clerical	0.3	hours	\$45.00	\$14	19.6 hours @ 0.015 hr/hr = 0.3 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification (Subt: Assemb 5.26.17 - 5.26.19)				\$53		
				\$403		

5.26 AWTS (i/s A south SLF3) 1 tk	Direct Cost	Total	Basic	\$1,926
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5.26 AWTS (i/s A south SLF3) 1 tk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$1,926	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$135	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$77	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$116	note: DEC uses 6%
Engineering During Construction	2.00%	\$39	note: DEC uses 2%
General Contractor Profit	6.00%	\$116	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$482	
Subt: AWTS (i/s A sou SLF 3) 1 tk		\$2,408	
Plus Contingency	10.00%	\$241	CWM and DEC 10%
Tot: AWTS (i/s A sou SLF 3) 1 tk		\$2,649	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.27 AWTS (i/s A sou SLF10) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.27.1 Inventory Verification						
					prod'n rates: 100 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	1.0	hours	\$39.00	\$39	1 tanks @ 0.5 hour/tank = 0.5 hours @ 2 units/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$39		
(Subt: Assemb 5.27.1 - 5.27.1)				\$39	tank: T-8005	
5.27.2 Empty Tank T-8005						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.2	hours	\$6.31	\$1	300 gals @ 1650 gals/hr = 0.2 hours @ 1 units/crew = 0.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank				\$1		
5.27.3 Transport Tanker Onsite						
					production rate = 0.5 hours/trip for onsite travel	
Tractor	0.03	hours	\$32.45	\$1	300 gals @ 5500 gals/load = 0.05 loads @ 0.5 hours/load = 0.03 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.03	hours	\$6.31	\$0	300 gals @ 5500 gals/load = 0.05 loads @ 0.5 hours/load = 0.03 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transport Tanker Onsite				\$1		
5.27.4 Empty Tanker						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.2	hours	\$6.31	\$1	300 gals @ 1650 gals/hr = 0.2 hours @ 1 units/crew = 0.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanker				\$1		
(Subt: Assemb 5.27.2 - 5.27.4)				\$4		
5.27.5 Onsite Aqueous Treatment						
					liquid wastes transferred to AWTS by tankers	
Onsite Aqueous Treatment - Tanks	300.0	gals	\$0.1526	\$46	300 gals	AWTS cost for groundwater
Subt - Onsite Aqueous Treatment				\$46		
(Subt: Assemb 5.27.5 - 5.27.5)				\$46	onsite treatment of tanks' waste liquids	
5.27.6 Steel Tank Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
No. of Tanks/Capacity/Area/Weight	1.0	tnks @			300 gallons: 102 SF Tanks: 3 CF @ 490 Lb/CF = 1388 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	1.5	hours	\$39.00	\$59	102 SF @ 200 SF/hour 0.5 hours @ 3 units/crew = 1.5 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.0	hours	\$45.00	\$45	102 SF @ 200 SF/hour 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.5	hours	\$84.09	\$42	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.5	hours	\$34.40	\$17	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.5	hours	\$2.47	\$1	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.5	hours	\$30.03	\$15	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.5	hours	\$86.31	\$43	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.5	hours	\$5.41	\$3	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$225	tank area represents steel tank plus its steel secondary containment area.	

5.27 AWTS (i/s A sou SLF10) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.27.7 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	0.0	<i>tnks @</i>			<i>0 gallons: 0 SF Tanks: 0 CF @ 245 Lb/CF = 0 Lbs</i>	<i>FRP Tanks only; facility estimates 245#/CF</i>
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$0	<i>tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5</i>	
5.27.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	100.0	<i>LF</i>			<i>1 tanks @ 100 LF/tank = 100 LF @ 4 Lb/LF = 400 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	10.0	hours	\$39.00	\$390	100 LF @ 20 LF/hour 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5.0	hours	\$5.41	\$27	100 LF @ 20 LF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$417	<i>in the absence of facility data, piping assumed to average 100 LF/tank</i>	
5.27.9 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	1.0	hours	\$39.00	\$39	0.5 pumps @ 1 pump/hr 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	0.5	hours	\$5.41	\$3	0.5 pumps @ 1 pump/hr 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$42	<i>pump weight = 250# each; in the absence of facility data, one pump per two tanks is estimated</i>	
5.27.10 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.0	hours	\$39.00	\$0	0.59 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0.59 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.0	hours	\$30.03	\$0	0.59 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.0	hours	\$5.20	\$0	0.59 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$0	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	

5.27 AWTS (i/s A sou SLF10) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.27.11 Uni'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	1.0	TONS			0.6 CY debr + 15% kiln dust = 0.67 CY total total tonnage = 1.0 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.1	hours	\$39.00	\$4	1.0 tons @ 15 tons/hr @ 0.1 hours @ 2 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.2	hours	\$45.00	\$9	1.0 tons @ 15 tons/hr @ 0.1 hours @ 3 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.1	hours	\$19.18	\$2	1.0 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.1	hours	\$14.39	\$1	1.0 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.1	hours	\$329.70	\$33	1.0 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.1	hours	\$136.29	\$14	1.0 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.1 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.1 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.1	tons	\$48.00	\$5		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.0	units	\$1,000.00	\$0	0.7 CYs @ 30 CY/unit = 0.0 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.0	hours	\$19.02	\$0	0.7 CYs @ 30 CY/unit = 0.0 rolloffs @ 0.1 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$68	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.27.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	0.7 CY @ 30 CY/load = 0.1 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	0.7	CY	\$337.50	\$236	0.7 CY @ 27 CF/CY = 18.2 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$361		
(Subt: Assemb 5.27.6 - 5.27.12)				\$1,113	tank/piping/pump demolition, and offsite transportation & disposal	
5.27.13 Decon SCA (wash)					not applicable - secondary containmnet demolished with primary tank	
Subt - Decon SCA (wash)				\$0		
5.27.14 Decon SCA (rinse)						
Subt - Decon SCA (rinse)				\$0		
5.27.15 Decon Water Samp/Disp						
Subt - Decon Water Samp/Dispose				\$0		
5.27.16 PCB Wipe Samples						
Subt - PCB Wipe/Destruct Samp				\$0		
(Subt: Assemb 5.27.13 - 5.27.16)				\$0	decontamination & sampling of SCA	

Total Non-Super Labor Hours 14.8

5.27.17 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	14.8 hours @ 8 hr/day = 1.8 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	0.5	days	\$9.00	\$5	14.8 hours @ 8 hr/day = 1.8 days @ 25% "Mod C" days = 0.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	1.3	days	\$25.00	\$33	14.8 hours @ 8 hr/day = 1.8 days @ 75% "C" days = 1.3 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.4	hours	\$75.00	\$30	14.8 hours @ 2.5% hr/hr = 0.4 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$67		

5.27 AWTS (i/s A sou SLF10) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.27.18 Supervision					0.1 weeks supervisory time for closure of 1 tank	
Foreman	4.0	hours	\$65.00	\$260	0.1 weeks @ 40 hrs/wk = 4.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$260		
5.27.19 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.2	hours	\$130.00	\$26	14.8 hours @ 0.015 hr/hr = 0.2 hours	Engineer rate: 2011 3rd party quote
Clerical	0.2	hours	\$45.00	\$9	14.8 hours @ 0.015 hr/hr = 0.2 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$35		
<i>(Subt: Assemb 5.27.17 - 5.27.19)</i>				\$362		
5.27 AWTS (i/s A sou SLF10) 1 tnk	Direct Cost	Total	Basic	\$1,563		

5.27 AWTS (i/s A sou SLF10) 1 tnk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$1,563	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$109	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$63	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$94	note: DEC uses 6%
Engineering During Construction	2.00%	\$31	note: DEC uses 2%
General Contractor Profit	6.00%	\$94	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$391	
Subt: AWTS (i/s A sou SLF10) 1 tk		\$1,954	
Plus Contingency	10.00%	\$195	CWM and DEC 10%
Tot: AWTS (i/s A sou SLF10) 1 tnk		\$2,149	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.28 AWTS (i/s A eastSLF12) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.28.1 Inventory Verification						
					prod'n rates: 50 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	1.0	hours	\$39.00	\$39	1 tanks @ 0.5 hour/tank = 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$39		
(Subt: Assemb 5.28.1 - 5.28.1)				\$39	tank: T-8006	
5.28.2 Empty Tank T-8006						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.2	hours	\$6.31	\$1	300 gals @ 1650 gals/hr = 0.2 hours @ 1 units/crew = 0.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank				\$1		
5.28.3 Transport Tanker Onsite						
					production rate = 0.5 hours/trip for onsite travel	
Tractor	0.03	hours	\$32.45	\$1	300 gals @ 5500 gals/load = 0.05 loads @ 0.5 hours/load = 0.03 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.03	hours	\$6.31	\$0	300 gals @ 5500 gals/load = 0.05 loads @ 0.5 hours/load = 0.03 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Tanker Transport				\$1		
5.28.4 Empty Tanker						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.2	hours	\$6.31	\$1	300 gals @ 1650 gals/hr = 0.2 hours @ 1 units/crew = 0.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanker				\$1		
(Subt: Assemb 5.28.2 - 5.28.4)				\$4		
5.28.5 Onsite Aqueous Treatment						
					liquid wastes transferred to AWTS by tankers	
Onsite Aqueous Treatment - Tanks	300.0	gals	\$0.1526	\$46	300 gals	AWTS cost for groundwater
Subt - Onsite Aqueous Treatment				\$46		
(Subt: Assemb 5.28.5 - 5.28.5)				\$46	onsite treatment of tanks' waste liquids	
5.28.6 Steel Tank Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf tank area	
No. of Tanks/Capacity/Area/Weight	1.0	tnks @			300 gallons: 102 SF Tanks: 3 CF @ 490 Lb/CF = 1388 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	1.5	hours	\$39.00	\$59	102 SF @ 200 SF/hour 0.5 hours @ 3 units/crew = 1.5 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.0	hours	\$45.00	\$45	102 SF @ 200 SF/hour 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.5	hours	\$84.09	\$42	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.5	hours	\$34.40	\$17	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.5	hours	\$2.47	\$1	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.5	hours	\$30.03	\$15	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.5	hours	\$86.31	\$43	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.5	hours	\$5.41	\$3	102 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel Tank Demolition				\$225	steel tank area base	

5.28 AWTS (i/s A eastSLF12) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.28.7 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	0.0	<i>tnks @</i>			<i>0 gallons: 0 SF Tanks: 0 CF @ 245 Lb/CF = 0 Lbs</i>	<i>FRP Tanks only; facility estimates 245#/CF</i>
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 3 units/crew = 0.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.0 hours @ 2 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.0 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$0	<i>tank areas based up</i>	
5.28.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	100.0	<i>LF</i>			<i>1 tanks @ 100 LF/tank = 100 LF @ 4 Lb/LF = 400 Lbs</i>	<i>combined Steel and FRP Tanks' Piping</i>
Laborers	10.0	hours	\$39.00	\$390	100 LF @ 20 LF/hour 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5.0	hours	\$5.41	\$27	100 LF @ 20 LF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$417	<i>in the absence of fa</i>	
5.28.9 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	1.0	hours	\$39.00	\$39	0.5 pumps @ 1 pump/hr 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	0.5	hours	\$5.41	\$3	0.5 pumps @ 1 pump/hr 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$42	<i>pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated</i>	
5.28.10 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.0	hours	\$39.00	\$0	0.6 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0.6 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.0	hours	\$30.03	\$0	0.6 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.0	hours	\$5.20	\$0	0.6 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$0	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	

5.28 AWTS (i/s A eastSLF12) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.28.11 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	1.0	TONS			0.6 CY debr + 15% kiln dust = 0.67 CY total total tonnage = 1.0 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.1	hours	\$39.00	\$4	1.0 tons @ 15 tons/hr @ 0.1 hours @ 2 units/crew = 0.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.2	hours	\$45.00	\$9	1.0 tons @ 15 tons/hr @ 0.1 hours @ 3 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.1	hours	\$19.18	\$2	1.0 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.1	hours	\$14.39	\$1	1.0 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.1	hours	\$329.70	\$33	1.0 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.1	hours	\$136.29	\$14	1.0 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.1 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.1 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.1	tons	\$48.00	\$5		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.0	units	\$1,000.00	\$0	0.7 CYs @ 30 CY/unit = 0.0 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.0	hours	\$19.02	\$0	0.7 CYs @ 30 CY/unit = 0.0 rolloffs @ 0.1 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$68	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.28.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	0.7 CY @ 30 CY/load = 0.0 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	0.7	Y	\$337.50	\$236	0.7 CY @ 27 CF/CY = 18.2 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$361		
(Subt: Assemb 5.28.6 - 5.28.12)				\$1,113	tank/piping/pump demolition, and offsite transportation & disposal	
5.28.13 Decon SCA (wash)					not applicable - secondary containment demolished with primary tank	
Subt - Decon SCA (wash)				\$0		
5.28.14 Decon SCA (rinse)						
Subt - Decon SCA (rinse)				\$0		
5.28.15 Decon Water Samp/Disp						
Subt - Decon Water Samp/Disp				\$0		
5.28.16 PCB Wipe Samples						
Subt - PCB Wipe/Destruct Samp				\$0		
(Subt: Assemb 5.28.13 - 5.28.16)				\$0	decontamination & sampling of SCA	

Total Non-Super Labor Hours 14.8

5.28.17 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	14.8 hours @ 8 hr/day = 1.8 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	0.5	days	\$9.00	\$5	14.8 hours @ 8 hr/day = 1.8 days @ 25% "Mod C" days = 0.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	1.3	days	\$25.00	\$33	14.8 hours @ 8 hr/day = 1.8 days @ 75% "C" days = 1.3 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.4	hours	\$75.00	\$30	14.8 hours @ 2.5% hr/hr = 0.4 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$67		

5.28 AWTS (i/s A eastSLF12) 1 tnk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.28.18 Supervision					0.1 weeks supervisory time for closure of 1 tank	
Foreman	4.0	hours	\$65.00	\$260	0.1 weeks @ 40 hrs/wk = 4.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$260		
5.28.19 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.2	hours	\$130.00	\$26	14.8 hours @ 0.015 hr/hr = 0.2 hours	Engineer rate: 2011 3rd party quote
Clerical	0.2	hours	\$45.00	\$9	14.8 hours @ 0.015 hr/hr = 0.2 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$35		
<i>(Subt: Assemb 5.28.17 - 5.28.19)</i>				\$362		

5.28 AWTS (i/s A eastSLF12) 1 tnk	Direct Cost	Total	Basic	\$1,563
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5.28 AWTS (i/s A eastSLF12) 1 tnk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$1,563	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$109	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$63	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$94	note: DEC uses 6%
Engineering During Construction	2.00%	\$31	note: DEC uses 2%
General Contractor Profit	6.00%	\$94	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$391	
Subt: AWTS (i/s A eastSLF12) 1 tk		\$1,954	
Plus Contingency	10.00%	\$195	CWM and DEC 10%
Tot: AWTS (i/s A eastSLF12) 1 tnk		\$2,149	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.29 AWTS (i/s A sou PCBwh) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.29.1 Inventory Verification						
					prod'n rates: 50 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	1.0	hours	\$39.00	\$39	1 tanks @ 0.5 hour/tank = 0.5 hours @ 2 units/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$39		
(Subt: Assemb 5.29.1 - 5.29.1)				\$39	tank: T-8007	
5.29.2 Empty Tank T-8007						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.3	hours	\$6.31	\$2	500 gals @ 1650 gals/hr = 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank				\$2		
5.29.3 Onsite Tanker Transport						
					production rate = 0.5 hours/trip for onsite transport	
Tractor	0.05	hours	\$32.45	\$2	500 gals @ 5500 gals/load = 0.1 loads @ 0.5 hrs/trip = 0.05 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.05	hours	\$6.31	\$0	500 gals @ 5500 gals/load = 0.1 loads @ 0.5 hrs/trip = 0.05 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Onsite Tanker Transport				\$2		
5.29.4 Empty Tanker						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.3	hours	\$6.31	\$2	500 gals @ 1650 gals/hr = 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanker				\$2		
(Subt: Assemb 5.29.2 - 5.29.4)				\$6		
5.29.5 Onsite Aqueous Treatment						
					liquid wastes transferred to AWTS by tankers	
Onsite Aqueous Treatment - Tanks	500.0	gals	\$0.1526	\$76	500 gals	AWTS cost for groundwater
Subt - Onsite Aqueous Treatment				\$76		
(Subt: Assemb 5.29.5 - 5.29.5)				\$76	onsite treatment of tanks' waste liquids	
5.29.6 Steel SCA Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf sc area	
No. of Tanks/Capacity/Area/Weight	0.0	tnks @			0 gallons: 90 SF SCA: 3 CF @ 490 Lb/CF = 1225 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	1.4	hours	\$39.00	\$55	90 SF @ 200 SF/hour 0.5 hours @ 3 units/crew = 1.4 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.9	hours	\$45.00	\$41	90 SF @ 200 SF/hour 0.5 hours @ 2 units/crew = 0.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.5	hours	\$84.09	\$42	90 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.5	hours	\$34.40	\$17	90 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.5	hours	\$2.47	\$1	90 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.5	hours	\$30.03	\$15	90 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.5	hours	\$86.31	\$43	90 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.5	hours	\$5.41	\$3	90 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel SCA Demolition				\$216	tank areas based upon steel tank plus steel secondary containment area	

5.29 AWTS (i/s A sou PCBwh) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.29.7 FRP Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	1.0	tnks @			500 gallons: 84 SF Tanks: 2 CF @ 245 Lb/CF = 572 Lbs	FRP Tanks only; facility estimates 245#/CF
Laborer	1.3	hours	\$39.00	\$51	84 SF @ 200 SF/hour 0.4 hours @ 3 units/crew = 1.3 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.8	hours	\$45.00	\$36	84 SF @ 200 SF/hour 0.4 hours @ 2 units/crew = 0.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.4	hours	\$84.09	\$34	84 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.4	hours	\$34.40	\$14	84 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.4	hours	\$2.47	\$1	84 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.4	hours	\$30.03	\$12	84 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.4	hours	\$86.31	\$35	84 SF @ 200 SF/hour 0.4 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	84 SF @ 200 SF/hour 0.4 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$182	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.29.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	100.0	LF			1 tanks @ 100 LF/tank = 100 LF @ 4 Lb/LF = 400 Lbs	combined Steel and FRP Tanks' Piping
Laborers	10.0	hours	\$39.00	\$390	100 LF @ 20 LF/hour 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5.0	hours	\$5.41	\$27	100 LF @ 20 LF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$417	in the absence of facility data, piping assumed to average 100 LF/tank	
5.29.9 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	1.0	hours	\$39.00	\$39	0.5 pumps @ 1 pump/hr 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	0.5	hours	\$5.41	\$3	0.5 pumps @ 1 pump/hr 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$42	pump weight = 250# each; in the absense of facility data, one pump per two tanks is estimated	
5.29.10 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.04	hours	\$39.00	\$2	0.66 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.04	hours	\$45.00	\$2	0.66 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.04	hours	\$30.03	\$1	0.66 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.04	hours	\$5.20	\$0	0.66 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$5	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	

5.29 AWTS (i/s A sou PCBwh) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.29.11 Uni'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	1.3	TONS			0.7 CY debr + 15% kiln dust = 0.76 CY total total tonnage = 1.3 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.2	hours	\$39.00	\$8	1.3 tons @ 15 tons/hr @ 0.1 hours @ 2 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.3	hours	\$45.00	\$14	1.3 tons @ 15 tons/hr @ 0.1 hours @ 3 units/crew = 0.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.1	hours	\$19.18	\$2	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.1	hours	\$14.39	\$1	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.1	hours	\$329.70	\$33	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.1	hours	\$136.29	\$14	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.1 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.1 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.1	tons	\$48.00	\$5		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.02	units	\$1,000.00	\$20	0.8 CYs @ 30 CY/unit = 0.02 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.0	hours	\$19.02	\$0	0.8 CYs @ 30 CY/unit = 0.0 rolloffs @ 0.1 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$96	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.29.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	0.8 CY @ 30 CY/load = 0.0 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	0.8	CY	\$337.50	\$270	0.8 CY @ 27 CF/CY = 20.5 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$395		
<i>(Subt: Assemb 5.29.6 - 5.29.12)</i>				\$1,353	tank/piping/pump demolition, and offsite transportation & disposal	
5.29.13 Decon SCA (wash)					not applicable - secondary containment demolished with primary tank	
Subt - Decon SCA (wash)				\$0		
5.29.14 Decon SCA (rinse)						
Subt - Decon SCA (rinse)				\$0		
5.29.15 Decon Water Samp/Disp						
Subt - Decon Water Samp/Dispose				\$0		
5.29.16 PCB Wipe Samples						
Subt - PCB Wipe/Destruct Samp				\$0		
<i>(Subt: Assemb 5.29.13 - 5.29.16)</i>				\$0	decontamination & sampling of SCA	

Total Non-Super Labor Hours

17.0

5.29 AWTS (i/s A sou PCBwh) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.29.17 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	17.0 hours @ 8 hr/day = 2.1 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	0.5	days	\$9.00	\$5	17.0 hours @ 8 hr/day = 2.1 days @ 25% "Mod C" days = 0.5 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	1.6	days	\$25.00	\$40	17.0 hours @ 8 hr/day = 2.1 days @ 75% "C" days = 1.6 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.5	hours	\$75.00	\$38	17.0 hours @ 2.5% hr/hr = 0.5 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$82		
5.29.18 Supervision					0.1 weeks supervisory time for closure of 1 tank	
Foreman	4.0	hours	\$65.00	\$260	0.1 weeks @ 40 hrs/wk = 4.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$260		
5.29.19 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.3	hours	\$130.00	\$39	17.0 hours @ 0.015 hr/hr = 0.3 hours	Engineer rate: 2011 3rd party quote
Clerical	0.3	hours	\$45.00	\$14	17.0 hours @ 0.015 hr/hr = 0.3 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$53		
<i>(Subt: Assemb 5.29.17 - 5.29.19)</i>				\$395		

5.29 AWTS (i/s A sou PCBwh) 1 tk	Direct Cost	Total	Basic	\$1,869
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5.29 AWTS (i/s A sou PCBwh) 1 tk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$1,869	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$131	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$75	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$112	note: DEC uses 6%
Engineering During Construction	2.00%	\$37	note: DEC uses 2%
General Contractor Profit	6.00%	\$112	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$467	
Subt: AWTS (i/s A sou PCBwh) 1 t		\$2,336	
Plus Contingency	10.00%	\$234	CWM and DEC 10%
Tot: AWTS (i/s A sou PCBwh) 1 tk		\$2,569	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.30 AWTS (i/s TO Build) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.30.1 Inventory Verification						
					prod'n rates: 50 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	1.0	hours	\$39.00	\$39	1 tanks @ 0.5 hour/tank = 0.5 hours @ 2 units/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$39		
(Subt: Assemb 5.30.1 - 5.30.1)				\$39	tank: T-8009	
5.30.2 Empty Tank T-8007						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.3	hours	\$6.31	\$2	525 gals @ 1650 gals/hr = 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank				\$2		
5.30.3 Onsite Tanker Transport						
					production rate = 0.5 hours/trip for onsite transport	
Tractor	0.05	hours	\$32.45	\$2	525 gals @ 5500 gals/load = 0.1 loads @ 0.5 hrs/trip = 0.05 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.05	hours	\$6.31	\$0	525 gals @ 5500 gals/load = 0.1 loads @ 0.5 hrs/trip = 0.05 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Onsite Tanker Transport				\$2		
5.30.4 Empty Tanker						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.3	hours	\$6.31	\$2	525 gals @ 1650 gals/hr = 0.3 hours @ 1 units/crew = 0.3 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanker				\$2		
(Subt: Assemb 5.30.2 - 5.30.4)				\$6		
5.30.5 Onsite Aqueous Treatment						
					liquid wastes transferred to AWTS by tankers	
Onsite Aqueous Treatment - Tanks	525.0	gals	\$0.1526	\$80	525 gals	AWTS cost for groundwater
Subt - Onsite Aqueous Treatment				\$80		
(Subt: Assemb 5.30.5 - 5.30.5)				\$80	onsite treatment of tanks' waste liquids	
5.30.6 Steel SCA Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf sc area	
No. of Tanks/Capacity/Area/Weight	0.0	tnks @			0 gallons: 95.5 SF SCA: 3 CF @ 490 Lb/CF = 1300 Lbs	Steel Secondary containment only; estimate 490#/CF
Laborer	1.5	hours	\$39.00	\$59	95.5 SF @ 200 SF/hour 0.5 hours @ 3 units/crew = 1.5 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1.0	hours	\$45.00	\$45	95.5 SF @ 200 SF/hour 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.5	hours	\$84.09	\$42	95.5 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.5	hours	\$34.40	\$17	95.5 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.5	hours	\$2.47	\$1	95.5 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.5	hours	\$30.03	\$15	95.5 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.5	hours	\$86.31	\$43	95.5 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.5	hours	\$5.41	\$3	95.5 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel SCA Demolition				\$225	area based upon steel secondary containment area	

5.30 AWTS (i/s TO Build) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.30.7 HDPE Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	
<i>No. of Tanks/Capacity/Area/Weight</i>	1.0	tnks @			525 gallons: 88 SF Tanks: 2.5 CF @ 245 Lb/CF = 612.5 Lbs	HDPE Tanks only; estimates 245#/CF
Laborer	1.3	hours	\$39.00	\$51	88 SF @ 200 SF/hour 0.44 hours @ 3 units/crew = 1.3 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.9	hours	\$45.00	\$41	88 SF @ 200 SF/hour 0.44 hours @ 2 units/crew = 0.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.4	hours	\$84.09	\$34	88 SF @ 200 SF/hour 0.44 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.4	hours	\$34.40	\$14	88 SF @ 200 SF/hour 0.44 hours @ 1 units/crew = 0.4 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.4	hours	\$2.47	\$1	88 SF @ 200 SF/hour 0.44 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.4	hours	\$30.03	\$12	88 SF @ 200 SF/hour 0.44 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.4	hours	\$86.31	\$35	88 SF @ 200 SF/hour 0.44 hours @ 1 units/crew = 0.4 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	88 SF @ 200 SF/hour 0.44 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - FRP Tank Demolition				\$186	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.30.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	100.0	LF			1 tanks @ 100 LF/tank = 100 LF @ 4 Lb/LF = 400 Lbs	HDPE Tanks' Piping
Laborers	10.0	hours	\$39.00	\$390	100 LF @ 20 LF/hour 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5.0	hours	\$5.41	\$27	100 LF @ 20 LF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$417	piping assumed to average 100 LF/tank	
5.30.9 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 1.0 pumps/tank	
Laborers	2.0	hours	\$39.00	\$78	1.0 pumps @ 1 pump/hr 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	1.0	hours	\$5.41	\$5	1.0 pumps @ 1 pump/hr 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$83	pump weight = 250# each; one pump per tank is estimated	
5.30.10 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.04	hours	\$39.00	\$2	0.66 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.04	hours	\$45.00	\$2	0.66 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.04	hours	\$30.03	\$1	0.66 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.04	hours	\$5.20	\$0	0.66 CY @ 15 CY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$5	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	

5.30 AWTS (i/s TO Build) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.30.11 Uni'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	1.3	TONS			0.7 CY debr + 15% kiln dust = 0.76 CY total total tonnage = 1.3 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.2	hours	\$39.00	\$8	1.3 tons @ 15 tons/hr @ 0.1 hours @ 2 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.3	hours	\$45.00	\$14	1.3 tons @ 15 tons/hr @ 0.1 hours @ 3 units/crew = 0.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.1	hours	\$19.18	\$2	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.1	hours	\$14.39	\$1	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.1	hours	\$329.70	\$33	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.1	hours	\$136.29	\$14	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.1 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.1 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.1	tons	\$48.00	\$5		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.0	units	\$1,000.00	\$0	0.8 CYs @ 30 CY/unit = 0.0 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.0	hours	\$19.02	\$0	0.8 CYs @ 30 CY/unit = 0.0 rolloffs @ 0.1 hours/rolloff = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$76	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.30.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	0.8 CY @ 30 CY/load = 0.0 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	0.8	CY	\$337.50	\$270	0.8 CY @ 27 CF/CY = 20.5 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$395		
<i>(Subt: Assemb 5.30.6 - 5.30.12)</i>				\$1,387	tank/piping/pump demolition, and offsite transportation & disposal	
5.30.13 Decon SCA (wash)					not applicable - secondary containment demolished with primary tank	
Subt - Decon SCA (wash)				\$0		
5.30.14 Decon SCA (rinse)						
Subt - Decon SCA (rinse)				\$0		
5.30.15 Decon Water Samp/Disp						
Subt - Decon Water Samp/Dispose				\$0		
5.30.16 PCB Wipe Samples						
Subt - PCB Wipe/Destruct Samp				\$0		
<i>(Subt: Assemb 5.30.13 - 5.30.16)</i>				\$0	decontamination & sampling of SCA	

Total Non-Super Labor Hours

18.3

5.30 AWTS (i/s TO Build) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.30.17 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	18.2 hours @ 8 hr/day = 2.3 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	0.6	days	\$9.00	\$5	18.2 hours @ 8 hr/day = 2.3 days @ 25% "Mod C" days = 0.6 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	1.7	days	\$25.00	\$43	18.2 hours @ 8 hr/day = 2.3 days @ 75% "C" days = 1.7 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.5	hours	\$75.00	\$38	18.2 hours @ 2.5% hr/hr = 0.5 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$85		
5.30.18 Supervision					0.1 weeks supervisory time for closure of 1 tank	
Foreman	4.0	hours	\$65.00	\$260	0.1 weeks @ 40 hrs/wk = 4.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$260		
5.30.19 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.3	hours	\$130.00	\$39	18.2 hours @ 0.015 hr/hr = 0.3 hours	Engineer rate: 2011 3rd party quote
Clerical	0.3	hours	\$45.00	\$14	18.2 hours @ 0.015 hr/hr = 0.3 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				\$53		
<i>(Subt: Assemb 5.30.17 - 5.30.19)</i>				\$398		

5.30 AWTS (i/s A TO Build) 1 tk	Direct Cost	Total	Basic	\$1,910
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5.30 AWTS (i/s TO Build) 1 tk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$1,910	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$134	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$76	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$115	note: DEC uses 6%
Engineering During Construction	2.00%	\$38	note: DEC uses 2%
General Contractor Profit	6.00%	\$115	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$478	
Subt: AWTS (i/s A TO Build) 1 t		\$2,388	
Plus Contingency	10.00%	\$239	CWM and DEC 10%
Tot: AWTS (i/s A TO Build) 1 tk		\$2,626	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

5.31 AWTS (i/s A sou Full Trailer) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.31.1 Inventory Verification						
					prod'n rates: 50 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	1.0	hours	\$39.00	\$39	1 tanks @ 0.5 hour/tank = 0.5 hours @ 2 units/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$39		
(Subt: Assemb 5.31.1 - 5.30.1)				\$39	tank: T-8010	
5.31.2 Empty Tank T-8007						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.6	hours	\$6.31	\$4	1000 gals @ 1650 gals/hr = 0.6 hours @ 1 units/crew = 0.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank				\$4		
5.31.3 Onsite Tanker Transport						
					production rate = 0.5 hours/trip for onsite transport	
Tractor	0.1	hours	\$32.45	\$3	1000 gals @ 5500 gals/load = 0.2 loads @ 0.5 hrs/trip = 0.1 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.1	hours	\$6.31	\$1	1000 gals @ 5500 gals/load = 0.2 loads @ 0.5 hrs/trip = 0.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Onsite Tanker Transport				\$4		
5.31.4 Empty Tanker						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.6	hours	\$6.31	\$4	1000 gals @ 1650 gals/hr = 0.6 hours @ 1 units/crew = 0.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanker				\$4		
(Subt: Assemb 5.31.2 - 5.31.4)				\$11		
5.31.5 Onsite Aqueous Treatment						
					liquid wastes transferred to AWTS by tankers	
Onsite Aqueous Treatment - Tanks	1000.0	gals	\$0.1526	\$153	1000 gals	AWTS cost for groundwater
Subt - Onsite Aqueous Treatment				\$153		
(Subt: Assemb 5.31.5 - 5.31.5)				\$153	onsite treatment of tanks' waste liquids	
5.31.6 Steel SCA Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf sc area	
No. of Tanks/Capacity/Area/Weight	0.0	tnks @			0 gallons: 90 SF SCA: 3 CF @ 490 Lb/CF = 1225 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.5 hours @ 3 units/crew = 0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.5 hours @ 2 units/crew = 0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel SCA Demolition				\$0	tank areas based upon steel tank plus steel secondary containment area	

5.31 AWTS (i/s A sou Full Trailer) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.31.7 HDPE Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	168 SF Tank & 178 SF Secondary Containment
<i>No. of Tanks/Capacity/Area/Weight</i>	1.0	<i>tnks @</i>			1000 gallons: 346 SF Tanks: 9.6 CF @ 245 Lb/CF = 2354 Lbs	HDPE Tanks & HDPLE Secondary Containment
Laborer	5.2	hours	\$39.00	\$203	346 SF @ 200 SF/hour 1.7 hours @ 3 units/crew = 5.2 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	3.5	hours	\$45.00	\$158	346 SF @ 200 SF/hour 1.7 hours @ 2 units/crew = 3.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	1.7	hours	\$84.09	\$143	346 SF @ 200 SF/hour 1.7 hours @ 1 units/crew = 1.7 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	1.7	hours	\$34.40	\$58	346 SF @ 200 SF/hour 1.7 hours @ 1 units/crew = 1.7 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	1.7	hours	\$2.47	\$4	346 SF @ 200 SF/hour 1.7 hours @ 1 units/crew = 1.7 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	1.7	hours	\$30.03	\$51	346 SF @ 200 SF/hour 1.7 hours @ 1 units/crew = 1.7 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	1.7	hours	\$86.31	\$147	346 SF @ 200 SF/hour 1.7 hours @ 1 units/crew = 1.7 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	346 SF @ 200 SF/hour 1.7 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - HDPE Tank Demolition				\$764	<i>tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5</i>	
5.31.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	100.0	<i>LF</i>			1 tanks @ 100 LF/tank = 100 LF @ 4 Lb/LF = 400 Lbs	<i>combined Steel and HDPE Tanks' Piping</i>
Laborers	10.0	hours	\$39.00	\$390	100 LF @ 20 LF/hour 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5.0	hours	\$5.41	\$27	100 LF @ 20 LF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$417	<i>piping assumed to average 100 LF/tank</i>	
5.31.9 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	1.0	hours	\$39.00	\$39	0.5 pumps @ 1 pump/hr 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	0.5	hours	\$5.41	\$3	0.5 pumps @ 1 pump/hr 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$42	<i>pump weight = 250# each; one pump per tank is estimated</i>	
5.31.10 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.06	hours	\$39.00	\$2	1.0 CY @ 15 CY/hr = 0.06 hours @ 1 units/crew = 0.06 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.06	hours	\$45.00	\$3	1.0 CY @ 15 CY/hr = 0.06 hours @ 1 units/crew = 0.06 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.06	hours	\$30.03	\$2	1.0 CY @ 15 CY/hr = 0.06 hours @ 1 units/crew = 0.06 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.06	hours	\$5.20	\$0	1.0 CY @ 15 CY/hr = 0.06 hours @ 1 units/crew = 0.06 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$7	<i>1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps</i>	

5.31 AWTS (i/s A sou Full Trailer) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.31.11 Unl'd Stabilize/Encapsulate					production rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	1.3	TONS			1.0 CY debr + 15% kiln dust = 1.15 CY total total tonnage = 1.9 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.2	hours	\$39.00	\$8	1.9 tons @ 15 tons/hr @ 0.1 hours @ 2 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.3	hours	\$45.00	\$14	1.3 tons @ 15 tons/hr @ 0.1 hours @ 3 units/crew = 0.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.1	hours	\$19.18	\$2	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.1	hours	\$14.39	\$1	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.1	hours	\$329.70	\$33	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.1	hours	\$136.29	\$14	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.3 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.3 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.3	tons	\$48.00	\$14		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.03	units	\$1,000.00	\$30	1.15 CYs @ 30 CY/unit = 0.03 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.03	hours	\$19.02	\$1	1.15 CYs @ 30 CY/unit = 0.04 rolloffs @ 0.1 hours/rolloff = 0.03 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$116	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.31.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	1.15 CY @ 30 CY/load = 0.03 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	1.15	CY	\$337.50	\$388	1.15 CY @ 27 CF/CY = 31.1 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$513		
<i>(Subt: Assemb 5.31.6 - 5.31.12)</i>				\$1,859	tank/piping/pump demolition, and offsite transportation & disposal	
5.31.13 Decon SCA (wash)					not applicable - secondary containment demolished with primary tank	
Subt - Decon SCA (wash)				\$0		
5.31.14 Decon SCA (rinse)						
Subt - Decon SCA (rinse)				\$0		
5.31.15 Decon Water Samp/Disp						
Subt - Decon Water Samp/Dispose				\$0		
5.31.16 PCB Wipe Samples						
Subt - PCB Wipe/Destruct Samp				\$0		
<i>(Subt: Assemb 5.31.13 - 5.31.16)</i>				\$0	decontamination & sampling of SCA	

Total Non-Super Labor Hours

21.3

5.31 AWTS (i/s A sou Full Trailer) 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.31.17 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	21.3 hours @ 8 hr/day = 2.7 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
	0.7	days	\$9.00	\$6	21.3 hours @ 8 hr/day = 2.7 days @ 25% "Mod C" days = 0.7 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	2.0	days	\$25.00	\$50	21.3 hours @ 8 hr/day = 2.7 days @ 75% "C" days = 2.0 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.5	hours	\$75.00	\$38	21.3 hours @ 2.5% hr/hr = 0.5 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$94		
5.31.18 Supervision					0.2 weeks supervisory time for closure of 1 tank	
Foreman	8.0	hours	\$65.00	\$520	0.2 weeks @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520		
5.31.19 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.3	hours	\$130.00	\$39	21.3 hours @ 0.015 hr/hr = 0.3 hours	Engineer rate: 2011 3rd party quote
Clerical	0.3	hours	\$45.00	\$14	21.3 hours @ 0.015 hr/hr = 0.3 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$53		
<i>(Subt: Assemb 5.31.17 - 5.31.19)</i>				\$666		

5.31 AWTS (i/s A south Full Trailer) 1 tk	Direct Cost	Total	Basic	\$2,728
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5.31 AWTS (i/s A sou Full Trailer) 1 tk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$2,728	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$191	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$109	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$164	note: DEC uses 6%
Engineering During Construction	2.00%	\$55	note: DEC uses 2%
General Contractor Profit	6.00%	\$164	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$682	
Subt: AWTS (i/s A sou Full Trailer) 1 t		\$3,411	
Plus Contingency	10.00%	\$341	CWM and DEC 10%
Tot: AWTS (i/s A sou Full Trailer) 1 tk		\$3,752	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

NOTE: Sheet to be added.

5.32 AWTS Fac 5 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.32.1 Inventory Verification						
					prod'n rates: 50 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required	
Laborer	1.0	hours	\$39.00	\$39	1 tanks @ 0.5 hour/tank = 0.5 hours @ 2 units/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$39		
(Subt: Assemb 5.32.1)				\$39	tank: T-9002	
5.32.2 Empty Tank T-9002						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.6	hours	\$6.31	\$4	1000 gals @ 1650 gals/hr = 0.6 hours @ 1 units/crew = 0.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank				\$4		
5.32.3 Onsite Tanker Transport						
					production rate = 0.5 hours/trip for onsite transport	
Tractor	0.1	hours	\$32.45	\$3	1000 gals @ 5500 gals/load = 0.2 loads @ 0.5 hrs/trip = 0.1 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	\$45.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.1	hours	\$6.31	\$1	1000 gals @ 5500 gals/load = 0.2 loads @ 0.5 hrs/trip = 0.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Onsite Tanker Transport				\$4		
5.32.4 Empty Tanker						
					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)	
Laborer	0.0	hours	\$39.00	\$0	Labor included in third party operation of AWTS	loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	\$0.00	\$0	Existing equipment part of tank system	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.6	hours	\$6.31	\$4	1000 gals @ 1650 gals/hr = 0.6 hours @ 1 units/crew = 0.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanker				\$4		
(Subt: Assemb 5.32.2 - 5.32.4)				\$11		
5.32.5 Onsite Aqueous Treatment						
					liquid wastes transferred to AWTS by tankers	
Onsite Aqueous Treatment - Tanks	1000.0	gals	\$0.1526	\$153	1000 gals	AWTS cost for groundwater
Subt - Onsite Aqueous Treatment				\$153		
(Subt: Assemb 5.32.5)				\$153	onsite treatment of tanks' waste liquids	
5.32.6 Steel SCA Demolition						
					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf sc area	
No. of Tanks/Capacity/Area/Weight	0.0	tnks @			0 gallons: 90 SF SCA: 3 CF @ 490 Lb/CF = 1225 Lbs	Steel Tanks only; estimate 490#/CF
Laborer	0.0	hours	\$39.00	\$0	0 SF @ 200 SF/hour 0.5 hours @ 3 units/crew = 0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	0 SF @ 200 SF/hour 0.5 hours @ 2 units/crew = 0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	\$84.09	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	\$34.40	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	\$2.47	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	\$86.31	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	0 SF @ 200 SF/hour 0.5 hours @ 1 units/crew = 0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel SCA Demolition				\$0	T-9002 is a double walled HDPE tank. No steel demolition will be required.	

NOTE: Sheet to be added.

5.32 AWTS Fac 5 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.32.7 HDPE Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area	168 SF Tank & 178 SF Secondary Containment
<i>No. of Tanks/Capacity/Area/Weight</i>	1.0	tnks @			1000 gallons: 346 SF Tanks: 9.6 CF @ 245 Lb/CF = 2354 Lbs	HDPE Tanks & HDPLE Secondary Containment
Laborer	5.2	hours	\$39.00	\$203	346 SF @ 200 SF/hour 1.7 hours @ 3 units/crew = 5.2 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	3.5	hours	\$45.00	\$158	346 SF @ 200 SF/hour 1.7 hours @ 2 units/crew = 3.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	1.7	hours	\$84.09	\$143	346 SF @ 200 SF/hour 1.7 hours @ 1 units/crew = 1.7 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	1.7	hours	\$34.40	\$58	346 SF @ 200 SF/hour 1.7 hours @ 1 units/crew = 1.7 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	1.7	hours	\$2.47	\$4	346 SF @ 200 SF/hour 1.7 hours @ 1 units/crew = 1.7 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	1.7	hours	\$30.03	\$51	346 SF @ 200 SF/hour 1.7 hours @ 1 units/crew = 1.7 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	1.7	hours	\$86.31	\$147	346 SF @ 200 SF/hour 1.7 hours @ 1 units/crew = 1.7 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	\$5.41	\$0	346 SF @ 200 SF/hour 1.7 hours @ 0 units/crew = 0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - HDPE Tank Demolition				\$764	tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5	
5.32.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF	
<i>Estimated Piping Length</i>	100.0	LF			1 tanks @ 100 LF/tank = 100 LF @ 4 Lb/LF = 400 Lbs	combined Steel and HDPE Tanks' Piping
Laborers	10.0	hours	\$39.00	\$390	100 LF @ 20 LF/hour 5.0 hours @ 2 units/crew = 10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5.0	hours	\$5.41	\$27	100 LF @ 20 LF/hour 5.0 hours @ 1 units/crew = 5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				\$417	piping assumed to average 100 LF/tank	
5.32.9 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank	
Laborers	1.0	hours	\$39.00	\$39	0.5 pumps @ 1 pump/hr 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	0.5	hours	\$5.41	\$3	0.5 pumps @ 1 pump/hr 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				\$42	pump weight = 250# each; one pump per tank is estimated	
5.32.10 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)	
Laborer	0.06	hours	\$39.00	\$2	1.0 CY @ 15 CY/hr = 0.06 hours @ 1 units/crew = 0.06 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.06	hours	\$45.00	\$3	1.0 CY @ 15 CY/hr = 0.06 hours @ 1 units/crew = 0.06 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.06	hours	\$30.03	\$2	1.0 CY @ 15 CY/hr = 0.06 hours @ 1 units/crew = 0.06 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.06	hours	\$5.20	\$0	1.0 CY @ 15 CY/hr = 0.06 hours @ 1 units/crew = 0.06 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				\$7	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	
5.32.11 Unl'd Stabilize/Encapsulate					prod rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers	
<i>PROCESS TONS (incl kiln dust)</i>	1.3	TONS			1.0 CY debr + 15% kiln dust = 1.15 CY total total tonnage = 1.9 tons	total tons derived from foregoing assemblies + kiln dust
Laborer	0.2	hours	\$39.00	\$8	1.9 tons @ 15 tons/hr @ 0.1 hours @ 2 units/crew = 0.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.3	hours	\$45.00	\$14	1.3 tons @ 15 tons/hr @ 0.1 hours @ 3 units/crew = 0.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.1	hours	\$19.18	\$2	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.1	hours	\$14.39	\$1	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.1	hours	\$329.70	\$33	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.1	hours	\$136.29	\$14	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	\$0.00	\$0	0.3 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	\$0.00	\$0	0.3 tons @ 20 ton/load = 0.0 loads	
Cement Kiln Dust - Mat'l&Delv Cost	0.3	tons	\$48.00	\$14		CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.03	units	\$1,000.00	\$30	1.15 CYs @ 30 CY/unit = 0.03 containers	CWM actual 2011 costs
Rolloffs (30-CY)	0.03	hours	\$19.02	\$1	1.15 CYs @ 30 CY/unit = 0.04 rolloffs @ 0.1 hours/rolloff = 0.03 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				\$116	1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps	

NOTE: Sheet to be added.

5.32 AWTS Fac 5 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.32.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	\$3.25	\$125	1.15 CY @ 30 CY/load = 0.03 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	1.15	CY	\$337.50	\$388	1.15 CY @ 27 CF/CY = 31.1 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				\$513		
(Subt: Assemb 5.32.6 - 5.32.12)				\$1,859	tank/piping/pump demolition, and offsite transportation & disposal	

5.32.13 Decon SCA (wash)					not applicable - secondary containment demolished with primary tank	
Subt - Decon SCA (wash)				\$0		
5.32.14 Decon SCA (rinse)						
Subt - Decon SCA (rinse)				\$0		
5.32.15 Decon Water Samp/Disp						
Subt - Decon Water Samp/Dispose				\$0		
5.32.16 PCB Wipe Samples						
Subt - PCB Wipe/Destruct Samp				\$0		
(Subt: Assemb 5.32.13 - 5.32.16)				\$0	decontamination & sampling of SCA	

Total Non-Super Labor Hours 21.3

5.32.17 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	\$0.00	\$0	21.3 hours @ 8 hr/day = 2.7 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
	0.7	days	\$9.00	\$6	21.3 hours @ 8 hr/day = 2.7 days @ 25% "Mod C" days = 0.7 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	2.0	days	\$25.00	\$50	21.3 hours @ 8 hr/day = 2.7 days @ 75% "C" days = 2.0 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.5	hours	\$75.00	\$38	21.3 hours @ 2.5% hr/hr = 0.5 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$94		
5.32.18 Supervision					0.2 weeks supervisory time for closure of 1 tank	
Foreman	8.0	hours	\$65.00	\$520	0.2 weeks @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	\$75.00	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520		
5.32.19 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.3	hours	\$130.00	\$39	21.3 hours @ 0.015 hr/hr = 0.3 hours	Engineer rate: 2011 3rd party quote
Clerical	0.3	hours	\$45.00	\$14	21.3 hours @ 0.015 hr/hr = 0.3 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$53		
(Subt: Assemb 5.32.17 - 5.32.19)				\$666		

5.32 AWTS Fac 5 1 tk	Direct Cost	Total	Basic	\$2,728
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NOTE: Sheet to be added.

5.32 AWTS (FacPond 5) 1 tk			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$2,728	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$191	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$109	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$164	note: DEC uses 6%
Engineering During Construction	2.00%	\$55	note: DEC uses 2%
General Contractor Profit	6.00%	\$164	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$682	
Subt: AWTS (i/s A sou Full Trailer) 1 t		\$3,411	
Plus Contingency	10.00%	\$341	CWM and DEC 10%
Tot: AWTS (Fac Pond 5) 1 tk		\$3,752	

Cost References:

"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)

"RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)

"RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

6.0 Fac Ponds 1/2, 3 & 8

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
6.1 Inventory Verification						production rate: 0.5 hour/pond to take depth estimate and estimate volume; two persons required	
Laborer	3.0	hours	\$39.00	\$117	\$117	3 ponds @ 0.5 hr/pond = 1.5 hours @ 2 units/crew = 3.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$117	\$117	Fac Pond 8 out of service and empty	
<i>(Subt: Assemblies 6.1 thru 6.1)</i>				\$117	\$117	inventory of liquid volumes in Ponds 1/2, 3, and 8 at closure	
6.2 Ponds' Sampling & Analysis						production rate = 2.0 hours per composite sample for a three-person crew	
<i>Batch Sampling Events</i>						2 events @ 3 samp/evnt= 6 samples	sampling & analysis prior to pond discharge
Technician	36.0	hours	\$38.00	\$1,368	\$1,368	6 samps @ 2.0 hrs/samp = 12.0 hours @ 3 units/crew = 36.0 hours	technician rate: rate 2011 3rd party quote
Sampling Equipment	12.0	hours	\$25.00	\$300	\$300	6 samps @ 2.0 hrs/samp = 12.0 hours @ 1 units/crew = 12.0 hours	boat, samplers, meters, etc.
Sampling Supplies	6.0	samp	\$25.00	\$150	\$150	6 samples	bottles, shipping supplies
pH	6.0	samp	\$10.67	\$64	\$64	6 samples	analytical price: average of three quotes
Specific Conductance	6.0	samp	\$13.33	\$80	\$80	6 samples	analytical price: average of three quotes
Temperature	6.0	samp	-	\$0	\$0	6 samples obtained using field equipment	Obtained using field equipment
Dissolved Oxygen	6.0	samp	-	\$0	\$0	6 samples obtained using field equipment	Obtained using field equipment
Total Dissolved solids (TDS)	6.0	samp	\$15.00	\$90	\$90	6 samples	analytical price: average of three quotes
TDVS (total dissolved volatile solids)	6.0	samp	\$23.33	\$140	\$140	6 samples	analytical price: average of three quotes
Alkalinity as CaCO3	6.0	samp	\$15.33	\$92	\$92	6 samples	analytical price: average of three quotes
TOC	6.0	samp	\$31.67	\$190	\$190	6 samples	analytical price: average of three quotes
Ca/Mg Hardness (200.7)	6.0	samp	\$24.33	\$146	\$146	6 samples	analytical price: average of three quotes
Total Suspended Solids (TSS)	6.0	samp	\$13.33	\$80	\$80	6 samples	analytical price: average of three quotes
Settleable Solids	6.0	samp	\$13.33	\$80	\$80	6 samples	analytical price: average of three quotes
Ammonia (NH3)	6.0	samp	\$22.67	\$136	\$136	6 samples	analytical price: average of three quotes
Phosphorous	6.0	samp	\$20.00	\$120	\$120	6 samples	analytical price: average of three quotes
TON (TKN-NH3)	6.0	samp	\$41.67	\$250	\$250	6 samples	analytical price: average of three quotes
Cyanide	6.0	samp	\$35.00	\$210	\$210	6 samples	analytical price: average of three quotes
Sulfates	6.0	samp	\$21.00	\$126	\$126	6 samples	analytical price: average of three quotes
Sulfides	6.0	samp	\$25.00	\$150	\$150	6 samples	analytical price: average of three quotes
Surfactants (MBAS)	6.0	samp	\$28.33	\$170	\$170	6 samples	analytical price: average of three quotes
BOD-5	6.0	samp	\$30.00	\$180	\$180	6 samples	analytical price: average of three quotes
Fluoride	6.0	samp	\$19.33	\$116	\$116	6 samples	analytical price: average of three quotes
Chlorine	6.0	samp	\$19.33	\$116	\$116	6 samples	analytical price: average of three quotes
Residual Chlorine	6.0	samp	\$15.00	\$90	\$90	6 samples	analytical price: average of three quotes
NO2	6.0	samp	\$21.00	\$126	\$126	6 samples	analytical price: average of three quotes
NO3	6.0	samp	\$19.33	\$116	\$116	6 samples	analytical price: average of three quotes
VOCs (624)	6.0	samp	\$105.00	\$630	\$630	6 samples	analytical price: average of three quotes
Semi-volatile organics (625)	6.0	samp	\$208.33	\$1,250	\$1,250	6 samples	analytical price: average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	6.0	samp	\$133.33	\$800	\$800	6 samples	analytical price: average of three quotes
Oil & Grease (1631)	6.0	samp	\$21.67	\$130	\$130	6 samples	analytical price: average of three quotes
total Phenols	6.0	samp	\$26.67	\$160	\$160	6 samples	analytical price: average of three quotes
Priority Pollutant Metals (200.7) *	6.0	samp	\$188.00	\$1,128	\$1,128	6 samples	analytical price: average of three quotes
Mercury (245.1)	6.0	samp	\$25.00	\$150	\$150	6 samples	analytical price: average of three quotes
Mercury (1631B)	6.0	samp	\$111.67	\$670	\$670	6 samples	analytical price: average of three quotes
Acute Toxicity/Bioassy	2.0	samp	\$3,800.00	\$7,600	\$7,600	2 samples	One quote: actual cost for 2010
Subt - Ponds' Sampling & Analysis				\$17,204	\$17,204	two pond discharges (batches) requiring sampling & analysis (Fac Pond 8 empty)	Fac Pond 8 out of service empty

6.0 Fac Ponds 1/2, 3 & 8

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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6.3 S&A Certification & Report						one event per year for divers to check discharge pipe; two 40-hour predischarge qualification reports	
Divers (Sr. Technicians)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
SCBA Gear (2 units)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Laborer (Surface Support)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Underwater Inspection	1.0	each	\$4,000.00	\$4,000	\$4,000	\$4,000 per event @ 1 event per year	Based on 2010 site rate of \$3,500
Engineer (Report)	80.0	hours	\$130.00	\$10,400	\$10,400	2 events @ 40 hrs/event = 80.0 hours @ 1 units/crew = 80.0 hours	Eng Rate: rate 2011 3rd party quote
Subt - S&A Cert'n & Report				\$14,400	\$14,400	<i>diver(s) to check discharge pipe; also engineer's predischarge qualification report</i>	Fac Pond 8 out of service empty
(Subt: Assemblies 6.2 thru 6.3)				\$31,604	\$31,604		

6.4 Empty (Pump) FAC Pond 1/2						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	
<i>FAC Pond 1/2 Inventory in Gallons</i>	<i>22881000.0</i>	<i>gals</i>	<i>n/a</i>			<i>381.4 total hours req'd to pump</i>	<i>Fac Pond 1/2 = 22,881,000 gallons</i>
AWTS Tech'n (8-hr day shift/straight time)	190.7	day hrs	\$65.00	\$12,396	\$12,396	381.4 tot hrs @ 50% (day shift) = 190.7 hours @ 1 units/crew = 190.7 hours	technician rate: rate 2011 3rd party quote
AWTS Tech'n (8-hr night shift/straight time)	190.7	nite hrs	\$65.00	\$12,396	\$12,396	381.4 tot hrs @ 50% (night shift) = 190.7 hours @ 1 units/crew = 190.7 hours	technician rate: rate 2011 3rd party quote
AWTS Supervisor (day shift only)		day hrs	\$85.00	\$0	\$0	Supervisor included in 6.25 below	
Maintenance (day shift only)	114.4	day hrs	\$45.00	\$5,148	\$5,148	381.4 tot hrs @ 30% (total hrs) = 114.4 hours @ 1 units/crew = 114.4 hours	maintenance rate: rate 2011 3rd party quote
Tech/Sampler (day shift only)	38.1	day hrs	\$38.00	\$1,448	\$1,448	381.4 tot hrs @ 10% (total hrs) = 38.1 hours @ 1 units/crew = 38.1 hours	technician rate: rate 2011 3rd party quote
Engineer (day shift only)		day hrs	\$90.00	\$0	\$0	Engineer included in 6.25 below	
Settleable Solids	95.4	samp	\$13.33	\$1,272	\$1,272	381.4 tot hrs @ 1 samp/4.0 hrs = 95.4 samples	analytical price: average of three quotes
Dissolved Oxygen	1.7	samp	-	\$0	\$0	381.4 tot hrs @ 1 samp/2 wks = 1.7 samples	Field Measurement analytical price: average of three quotes
Sulfide (total)	1.7	samp	\$25.00	\$43	\$43	381.4 tot hrs @ 1 samp/2 wks = 1.7 samples	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	381.4	total hrs	\$12.34	\$4,706	\$4,706	381.4 tot hrs @ 100% total time = 381.4 hours @ 1 units/crew = 381.4 hours	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam/3,000 LF)	1144050.0	foot-hrs	\$0.0110	\$12,585	\$12,585	381.4 tot hrs @ 100% total time = 381.4 hours @ 3000 LF/crew = 1144050 foot-hrs	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Pump FAC Pond 1/2				\$49,992	\$49,992	<i>transfer contents of FAC Pond 1/2 to discharge pipe to Niagara River (3,000 ft)</i>	

6.5 Treat FAC Pond 3 Contents						FAC Pond 3 contents already have been treated; no further treatment required.	
Treat FAC Pond 3 Contents		gals	\$0.00	\$0	\$0		used unit price of \$0.00/gal as no treatment is required
Subt - Treat FAC Pond 3 Contents				\$0	\$0	<i>no treatment required for FAC Pond 3 contents prior to discharge</i>	

6.6 Tranfer (Pump) FAC Pond 8						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Avg 28.8 inches precipitaiton per year
<i>FAC Pond 8 Inventory in Gallons</i>	<i>5430480.0</i>	<i>gals</i>	<i>n/a</i>			<i>302,500 SF @ 2.4 FT/year = 726,000 CF @ 7.48 gal/CF = 5,430,480 gallons</i>	<i>Fac Pond 8 = 5,430,480 gallons</i>
AWTS Tech'n (8-hr day shift/straight time)	45.3	day hrs	\$65.00	\$2,945	\$2,945	90.5 tot hrs @ 50% (day shift) = 45.25 hours @ 1 units/crew = 45.3 hours	technician rate: rate 2011 3rd party quote
AWTS Tech'n (8-hr night shift/straight time)	45.3	nite hrs	\$65.00	\$2,945	\$2,945	90.5 tot hrs @ 50% (night shift) = 45.25 hours @ 1 units/crew = 45.3 hours	technician rate: rate 2011 3rd party quote
AWTS Supervisor (day shift only)	0.0	day hrs	\$85.00	\$0	\$0	Supervisor included in 6.25 below	
Maintenance (day shift only)	27.2	day hrs	\$39.00	\$1,061	\$1,061	90.5 tot hrs @ 30% (total hrs) = 27.2 hours @ 1 units/crew = 27.2 hours	maintenance rate: rate 2011 3rd party quote
Tech/Sampler (day shift only)	0.0	day hrs	\$38.00	\$0	\$0	Not required	technician rate: rate 2011 3rd party quote
Engineer (day shift only)	0.0	day hrs	\$90.00	\$0	\$0	Engineer included in 6.25 below	
Settleable Solids	0.0	samp	\$13.33	\$0	\$0	Not required	analytical price: average of three quotes
Dissolved Oxygen	0.0	samp	-	\$0	\$0	Not required	analytical price: average of three quotes
Sulfide (total)	0.0	samp	\$25.00	\$0	\$0	Not required	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	90.5	total hrs	\$12.34	\$1,117	\$1,117	90.5 tot hrs @ 100% total time = 90.5 hours @ 1 units/crew = 90.5 hours	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam/3000 LF)	271500.0	foot-hrs	\$0.0110	\$2,987	\$2,987	90.5 tot hrs @ 100% total time = 90.5 hours @ 3000 LF/crew = 271500 foot-hrs	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Pump FAC Pond 8				\$11,053	\$11,053	<i>Transfer FAC Pond 8 stormwater to FAC Ponds 1/2 prior to sampling FAC Ponds 1/2</i>	

6.0 Fac Ponds 1/2, 3 & 8

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
6.7 Empty (Pump) FAC Pond 3						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	
<i>FAC Pond 3 Inventory in Gallons</i>	51355000.0	<i>gals</i>	<i>n/a</i>				<i>FAC Pond 3: 51,355,000 gals</i>
AWTS Tech'n (8-hr day shift/straight time)	428.0	day hrs	\$65.00	\$27,820	\$27,820	855.9 tot hrs @ 50% (day shift) = 428.0 hours @ 1 units/crew = 428.0 hours	technician rate: rate 2011 3rd party quote
AWTS Tech'n (8-hr night shift/straight time)	428.0	nite hrs	\$65.00	\$27,820	\$27,820	855.9 tot hrs @ 50% (night shift) = 428.0 hours @ 1 units/crew = 428.0 hours	technician rate: rate 2011 3rd party quote
AWTS Supervisor (day shift only)		day hrs	\$85.00	\$0	\$0	Supervisor included in 6.25 below	
Maintenance (day shift only)	256.8	day hrs	\$39.00	\$10,015	\$10,015	855.9 tot hrs @ 30% (total hrs) = 256.8 hours @ 1 units/crew = 256.8 hours	maintenance rate: rate 2011 3rd party quote
Tech/Sampler (day shift only)	85.6	day hrs	\$38.00	\$3,253	\$3,253	855.9 tot hrs @ 10% (total hrs) = 85.6 hours @ 1 units/crew = 85.6 hours	technician rate: rate 2011 3rd party quote
Engineer (day shift only)		day hrs	\$90.00	\$0	\$0	Engineer included in 6.25 below	
Settleable Solids	214.0	samp	\$13.33	\$2,853	\$2,853	855.9 hours @ 1.0 sample per 4.0 hours = 214.0 samples	analytical price: average of three quotes
Dissolved Oxygen	10.7	samp	-	\$0	\$0	855.9 hours @ 1.0 sample per 80.0 hours = 10.7 samples Field Measurement	analytical price: average of three quotes
Sulfide (total)	10.7	samp	\$25.00	\$268	\$268	855.9 hours @ 1.0 sample per 80.0 hours = 10.7 samples	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	855.9	hours	\$12.34	\$10,562	\$10,562	855.9 hours @ 100% total time = 855.9 hours @ 1 units/crew = 855.9 hours	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam/0 LF) p ()	0.0	foot-hrs	\$0.0110	\$0	\$0	855.9 hours @ 100% total time = 855.9 hours @ 0 LF/crew = 0 hours	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Pump FAC Pond 3				\$82,590	\$82,590	<i>transfer contents of FAC Pond 3 to Niagara River</i>	
<i>(Subt: Assemblies 6.4 thru 6.7)</i>				\$143,635	\$143,635		
6.8 Soil/Sed S&A - FAC Pond 1/2							
<i>FAC Pond 1/2 Area in SF</i>	187500.0	<i>SF</i>	<i>n/a</i>			18.8 areas = 19 grids: 38 metals 2 hazardous 17 organ	Fac Pond 1/2 = 187,500 SF; grids @ 100' x 100'
Technician	114.0	hours	\$38.00	\$4,332	\$4,332	57 samps @ 1 hrs/samp = 57.0 hours @ 2 units/crew = 114.0 hours	technician rate: rate 2011 3rd party quote
Sampling Supplies	57.0	samp	\$10.00	\$570	\$570	57 samples	bottles, shipping supplies
USEPA 40CFR Part 264 Append IX	2.0	samp	\$1,226.67	\$2,453	\$2,453	2 samples	analytical price: average of three quotes
Priority Poll'nt Organics (semi-VOC)	17.0	samp	\$615.00	\$10,455	\$10,455	17 samples	analytical price: average of three quotes
Priority Pollutant Metals	38.0	samp	\$158.33	\$6,017	\$6,017	38 samples	analytical price: average of three quotes
Subtotal - Soil/Sed S&A - FAC 1/2				\$23,827	\$23,827	<i>sampling and analyses of FAC Pond 1/2 soils and sediments</i>	
6.9 Soil/Sed S&A - FAC Pond 3							
<i>FAC Pond 3 Area in SF</i>	495000.0	<i>SF</i>	<i>n/a</i>			12.4 areas = 13 grids: 26 metals 2 hazardous 11 organ	Fac Pond 3 = 495,000 SF; grids @ 200' x 200'
Technician	78.0	hours	\$38.00	\$2,964	\$2,964	39 samps @ 1 hrs/samp = 39.0 hours @ 2 units/crew = 78.0 hours	technician rate: rate 2011 3rd party quote
Sampling Supplies	39.0	samp	\$10.00	\$390	\$390	39 samps @	bottles, shipping supplies
USEPA 40CFR Part 264 Append IX	2.0	samp	\$1,226.67	\$2,453	\$2,453	2 samples	analytical price: average of three quotes
Priority Poll'nt Organics (semi-VOC)	11.0	samp	\$615.00	\$6,765	\$6,765	11 samples	analytical price: average of three quotes
Priority Pollutant Metals	26.0	samp	\$158.33	\$4,117	\$4,117	26 samples	analytical price: average of three quotes
Subtotal - Soil/Sed S&A - FAC 3				\$16,689	\$16,689	<i>sampling and analyses of FAC Pond 3 soils and sediments</i>	
6.10 Soil/Sed S&A - FAC Pond 8							
						Fac Pond 8 Sampling and Analysis performed in 2005. Report submitted November 2009.	No COCs above background
<i>FAC Pond 8 Area in SF</i>	302500.0	<i>SF</i>	<i>n/a</i>			7.6 areas = 8 grids: 16 metals 2 hazardous 6 organ	Fac Pond 8 = 302,500 SF; grids @ 200' x 200'
Technician	0.0	hours	\$38.00	\$0	\$0	24 samps @ 1 hrs/samp = 24.0 hours @ 2 units/crew = 48.0 hours	technician rate: rate 2011 3rd party quote
Sampling Supplies	0.0	samp	\$10.00	\$0	\$0	24 samps @	bottles, shipping supplies
USEPA 40CFR Part 264 Append IX	0.0	samp	\$1,226.67	\$0	\$0	2 samples	analytical price: average of three quotes
Priority Poll'nt Organics (semi-VOC)	0.0	samp	\$615.00	\$0	\$0	6 samples	analytical price: average of three quotes
Priority Pollutant Metals	0.0	samp	\$158.33	\$0	\$0	16 samples	analytical price: average of three quotes
Subtotal - Soil/Sed S&A - FAC 8				\$0	\$0	<i>sampling and analyses of FAC Pond 8 soils and sediments</i>	
<i>(Subt: Assemblies 6.8 thru 6.10)</i>				\$40,516	\$40,516	<i>sampling and analyses of soils and sediments from FAC Ponds 1/2, 3, and 8</i>	

6.0 Fac Ponds 1/2, 3 & 8

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
6.11 Excavate Soil/Sed - FAC 1/2							
						production rate = 100 CY/hour, includes loading & transport to stabilization:site experience	
FAC Pond 1/2 Area in SF x 0.5' dp	187500.0	SF	n/a			93750 CF = 3472 CY	
Laborer	34.7	hours	\$39.00	\$1,353	\$1,353	3472.2 CY @ 100 CY/hr = 34.7 hours @	1 units/crew = 34.7 hours loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	34.7	hours	\$45.00	\$1,562	\$1,562	3472.2 CY @ 100 CY/hr = 34.7 hours @	1 units/crew = 34.7 hours loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	34.7	hours	\$84.09	\$2,918	\$2,918	3472.2 CY @ 100 CY/hr = 34.7 hours @	1 units/crew = 34.7 hours RSM/HC p. 467 (line item 01 54 33 20 0320)
Driver	34.7	hours	\$45.00	\$1,562	\$1,562	3472.2 CY @ 100 CY/hr = 34.7 hours @	1 units/crew = 34.7 hours loaded labor rate: loaded labor rate 2011 3rd party quote
Dump Truck (12-ton load)	34.7	hours	\$24.78	\$860	\$860	3472.2 CY @ 100 CY/hr = 34.7 hours @	1 units/crew = 34.7 hours RSM/HC p. 469 (line item 01 54 33 20 5250)
Subt - Excavate Soil/Sed - FAC 1/2				\$8,254	\$8,254	excavate soils and sediments from FAC Pond 1/2	
6.12 Stabilize FAC Pond 1/2							
						production rate = 100 tons/hour = 800 tons/day; includes loading for transport to landfill	
PROCESS TONS (incl kiln dust)	5390.6	TONS	n/a			3472 CY @ 1.35 ton/CY + 15% kiln dust = 5390.6 tons	1 CY = 2,700# (1.35 ton) @ 100# per CF
Dump Truck (12-ton load)	53.9	hours	24.78	\$1,336	\$1,336	5390.6 tons @ 100 tons/hr @	53.9 hours @ 1 units/crew = 53.9 hours RSM/HC p. 469 (line item 01 54 33 20 5250)
Cement Kiln Dust - Mat'l&Delv Cost	703.1	tons	\$48.00	\$33,749	\$33,749	3472 CY @ 1.35 ton/CY @	15% kiln dust = 703.1 tons CWM actual 2011 costs
Stabilization Cost	4687.2	tons	\$25.00	\$117,180	\$117,180	3472 CY @ 1.35 ton/CY = 4687.2 tons	CWM actual 2011 costs inc. labor & equipment
TCLP (Metals/VOCs/Semi-VOCs)	1.3	each	\$446.67	\$581	\$581	53.9 hours @ 1 test/40 hr = 1.3 tests	analytical price: average of three quotes
Subt - Stabilize FAC Pond 1/2				\$152,845	\$152,845	stabilize soils and sediments from FAC Pond 1/2	
6.13 Transp FAC 1/2: Offsite Disp							
						production rate = 0.5 hours/rolloff for on-site travel	
Offsite Transportation - Solids	103757.5	miles	\$3.25	\$337,212	\$0	5390.6 tons @ 20 tons/load = 269.5 loads @	385 miles/trip = 103757.5 miles Rate: transporters quote/site experience
Subt - FAC 1/2 to Offsite Landfill				\$337,212	\$0	transport soils & sediments from FAC Pond 1/2 to offsite landfill	
6.13a Transp/Unload FAC 1/2: Onsite Disp							
						production rate = 0.5 hours for onsite travel	
Driver	224.6	hours	\$45.00	\$0	\$10,107	5390.6 tons @ 12 tons/load = 449.2 loads @	0.5 hours/trip = 224.6 hours loaded labor rate: loaded labor rate 2011 3rd party quote
Dump Truck (12-ton load)	224.6	hours	\$24.78	\$0	\$5,566	5390.6 tons @ 12 tons/load = 449.2 loads @	0.5 hours/trip = 224.6 hours RSM/HC p. 469 (line item 01 54 33 20 5250)
Subt - FAC 1/2 to Onsite Landfill				\$0	\$15,673	onsite disposal of stabilized sediment	
6.14 Offsite FAC 1/2 Disposal							
						if onsite landfill capacity not available	
Offsite Disposal - FAC 1/2 Soil/Sed	5390.6	tons	\$133.00	\$716,950	\$0	5390.6 tons	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite Landfill Disposal				\$716,950	\$0	offsite disposal of soils & sediments from FAC Pond 1/2	
(Subt: Assemblies 6.11 thru 6.14)				\$1,215,261	\$176,772	excavation, stabilization, and T&D for FAC Pond 1/2 soils & sediments	
6.15 Excavate Soil/Sed - FAC 3							
						production rate = 100 CY/hour, includes loading & transport to stabilization:site experience	
FAC Pond 3 Area in SF x 0.5' dp	495500.0	SF	n/a			247750 CF = 9176 CY	
Laborer	91.8	hours	\$39.00	\$3,580	\$3,580	9175.9 CY @ 100 CY/hr = 91.8 hours @	1 units/crew = 91.8 hours loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	91.8	hours	\$45.00	\$4,131	\$4,131	9175.9 CY @ 100 CY/hr = 91.8 hours @	1 units/crew = 91.8 hours loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	91.8	hours	\$84.09	\$7,719	\$7,719	9175.9 CY @ 100 CY/hr = 91.8 hours @	1 units/crew = 91.8 hours RSM/HC p. 467 (line item 01 54 33 20 0320)
Driver	91.8	hours	\$45.00	\$4,131	\$4,131	9175.9 CY @ 100 CY/hr = 91.8 hours @	1 units/crew = 91.8 hours loaded labor rate: loaded labor rate 2011 3rd party quote
Dump Truck (12-ton load)	91.8	hours	\$24.78	\$2,275	\$2,275	9175.9 CY @ 100 CY/hr = 91.8 hours @	1 units/crew = 91.8 hours RSM/HC p. 469 (line item 01 54 33 20 5250)
Subt - Excavate Soil/Sed - FAC 3				\$21,836	\$21,836	excavate soils and sediments from FAC Pond 3	

6.0 Fac Ponds 1/2, 3 & 8

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
6.16 Stabilize FAC Pond 3						production rate = 100 tons/hour = 800 tons/day; includes loading for transport to landfill	
<i>PROCESS TONS (incl kiln dust)</i>	14245.6	TONS	n/a			9176 CY @ 1.35 ton/CY + 15% kiln dust = 14245.6 tons	1 CY = 2,700# (1.35 ton) @ 100# per CF
Dump Truck (12-ton load)	142.5	hours	24.78	\$3,531	\$3,531	14245.6 tons @ 100 tons/hr @ 142.5 hours @ 1 units/crew = 142.5 hours	RSM/HC p. 469 (line item 01 54 33 20 5250)
Cement Kiln Dust - Mat'l&Delv Cost	1858.1	tons	\$48.00	\$89,189	\$89,189	9176 CY @ 1.35 ton/CY @ 15% kiln dust = 1858.1 tons	CWM actual 2011 costs
Stabilization Cost	12387.6	tons	\$25.00	\$309,690	\$309,690	9176 CY @ 1.35 ton/CY = 12387.6	CWM actual 2011 costs inc. labor & equipment
TCLP (Metals/VOCs/Semi-VOCs)	11.9	each	\$446.67	\$5,315	\$5,315	474.9 hours @ 1 test/40 hr = 11.9 tests	analytical price: average of three quotes
Subt - Stabilize FAC Pond 3				\$407,725	\$407,725	stabilize soils and sediments from FAC Pond 3	
6.17 Transp FAC 3: Offsite Disp						production rate = 0.5 hours/rolloff for on-site travel	
Offsite Transportation - Solids	274235.5	miles	\$3.25	\$891,265	\$0	14245.6 tons @ 20 tons/load = 712.3 loads @ 1385 hours/trip = 274,235.5 miles	Rate: transporters quote/site experience
Subt - FAC 3 to Offsite Landfill				\$891,265	\$0	transport soils & sediments from FAC Pond 3 to offsite landfill	
6.17a Transp/Unload FAC 3: Onsite Disp						production rate = 0.5 hours for onsite travel	
Driver	593.6	hours	\$45.00	\$0	\$26,712	14245.6 tons @ 12 tons/load = 1187.1 loads @ 0.5 hours/trip = 593.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dump Truck (12-ton load)	593.6	hours	\$24.78	\$0	\$14,709	14245.6 tons @ 12 tons/load = 1187.1 loads @ 0.5 hours/trip = 593.6 hours	RSM/HC p. 469 (line item 01 54 33 20 5250)
Subt - FAC 3 to Onsite Landfill				\$0	\$41,421	onsite disposal of stabilized sediment	
6.18 Offsite FAC 3 Disposal						in-house estimate = \$0 for on-site disposal	
Disposal - FAC 3 Soil/Sediments	14245.6	tons	\$133.00	\$1,894,665	\$0	14245.6 tons	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite Landfill Disposal				\$1,894,665	\$0	offsite disposal of soils & sediments from FAC Pond 3	
(Subt: Assemblies 6.15 thru 6.18)				\$3,215,492	\$470,983	excavation, stabilization, and T&D for FAC Pond 3 soils & sediments	
6.19 Backfill/Grade - FAC 1/2						production rate = 200 CY/hour, site experience w/ 2 dozers; 11,000 CY onsite soil/clay available from berms	
<i>FAC Pond 1/2 Backfill Volume</i>	31250.0	CY	n/a			31250 CY minus 11000 CY onsite = 20250 CY borrow	
Laborer	156.3	hours	\$39.00	\$6,094	\$6,094	31250 CY @ 200 CY/hr = 156.25 hours @ 1 units/crew = 156.25 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	312.5	hours	\$45.00	\$14,063	\$14,063	31250 CY @ 200 CY/hr = 156.25 hours @ 2 units/crew = 312.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dozer (200 hp)	312.5	hours	\$56.38	\$17,619	\$17,619	31250 CY @ 200 CY/hr = 156.25 hours @ 2 units/crew = 312.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4260)
Offsite Borrow - Material & Delivery Cost	20250.0	CY	\$11.00	\$222,750	\$222,750	20250 CY	3rd party quote for RMU-1 final cover construction Assb. 14.0
Subt - Backfill/Grade - FAC 1/2				\$260,525	\$260,525	backfill and grade FAC Pond 1/2	
6.20 Backfill/Grade - FAC 3						production rate = 200 CY/hour, site experience w/ 2 dozers	
<i>FAC Pond 3 Backfill Volume</i>	137500.0	CY	n/a			137500 CY minus 0 CY onsite = 137500 CY borrow	
Laborer	687.5	hours	\$39.00	\$26,813	\$26,813	137500 CY @ 200 CY/hr = 687.5 hours @ 1 units/crew = 687.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	1375.0	hours	\$45.00	\$61,875	\$61,875	137500 CY @ 200 CY/hr = 687.5 hours @ 2 units/crew = 1375.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dozer (200 hp)	1375.0	hours	\$56.38	\$77,523	\$77,523	137500 CY @ 200 CY/hr = 687.5 hours @ 2 units/crew = 1375.0 hours	RSM/HC p. 468 (line item 01 54 33 20 4260)
Offsite Borrow - Material & Delivery Cost	137500.0	CY	\$11.00	\$1,512,500	\$1,512,500	137500 CY	3rd party quote for RMU-1 final cover construction Assb. 14.0
Subt - Backfill/Grade - FAC 3				\$1,678,710	\$1,678,710	backfill and grade FAC Pond 3	

6.0 Fac Ponds 1/2, 3 & 8

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
6.21 Backfill/Grade - FAC 8						production rate = 200 CY/hour, site experience w/ 2 dozers; 30,556 CY onsite soil/clay available from berms	
<i>FAC Pond 8 Backfill Volume</i>	84027.0	CY	n/a			<i>84027 CY minus 30556 CY onsite = 53471 CY borrow</i>	
Laborer	420.1	hours	\$39.00	\$16,384	\$16,384	84027 CY @ 200 CY/hr = 420.1 hours @ 1 units/crew = 420.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	840.3	hours	\$45.00	\$37,814	\$37,814	84027 CY @ 200 CY/hr = 420.1 hours @ 2 units/crew = 840.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dozer (200 hp)	840.3	hours	\$56.38	\$47,376	\$47,376	84027 CY @ 200 CY/hr = 420.1 hours @ 2 units/crew = 840.3 hours	RSM/HC p. 468 (line item 01 54 33 20 4260)
Offsite Borrow - Material & Delivery Cost	53471.0	CY	\$11.00	\$588,181	\$588,181		3rd party quote for RMU-1 final cover construction Assb. 14.0
Subt - Backfill/Grade - FAC 8				\$689,755	\$689,755	<i>backfill and grade FAC Pond 8</i>	
<i>(Subt: Assemblies 6.19 thru 6.21)</i>				\$2,628,990	\$2,628,990	<i>backfill and grade FAC Ponds 1/2, 3, and 8</i>	
6.22 Seed/Fertilize FAC 1/2 3 & 8						soil prep prod' rate = 33K sf/day (0.75 ac/day); seed/fert prod'n rate = 80K sf/day (1.8 ac/day)	
<i>FAC Pond 1/2 Surface Area</i>	309.3	MSF	n/a			<i>7.1 acres</i>	
<i>FAC Pond 3 Surface Area</i>	575.0	MSF	n/a			<i>13.2 acres</i>	
<i>FAC Pond 8 Surface Area</i>	287.5	MSF	n/a			<i>6.6 acres</i>	
Soil Preparation	0.0	MSF	\$0.00	\$0	\$0	Not necessary	
Seeding & Fertilizing	1171.8	MSF	\$73.97	\$86,678	\$86,678	1172 MSF	2004 DEC Rate * Implicit Deflator
Subt - Seed/Fert FACs 1/2, 3, & 8				\$86,678	\$86,678	<i>seeding and fertilizing FAC Ponds 1/2, 3, and 8</i>	
<i>(Subt: Assemblies 6.22 thru 6.22)</i>				\$86,678	\$86,678	<i>seeding and fertilizing FAC Ponds 1/2, 3, and 8</i>	
6.23 GW Well Monitoring						production = 0.5 hours/sample for two techs	
Technician	30.0	hours	\$38.00	\$1,140	\$1,140	30.0 samp @ 0.5 hrs/samp = 15.0 hours @ 2 units/crew = 30.0 hours	technician rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	30.0	samp	\$25.00	\$750	\$750	30.0 samples	bottles, shipping supplies
VOC Analysis (EPA 624)	30.0	samp	\$105.00	\$3,150	\$3,150	30.0 points @ 1.0 samps/pt = 30.0 samples	analytical price: average of three quotes
Subt - GW Well Monitoring				\$5,040	\$5,040	<i>monitoring of twelve monitoring wells (plus three QA blanks/duplicates) - two events during one year closure</i>	
<i>(Subt: Assemblies 6.23 thru 6.23)</i>				\$5,040	\$5,040		
Total Non-Super hours	7100.5						
6.24 PPE Usage & H&S Planning						Level C @ 0%; Level Mod C @ 25%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	650.4	days	\$0.00	\$0	\$0	7100.5 hours @ 8 hr/day = 887.6 days @ 75% "D" days = 665.7 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	216.8	days	\$9.00	\$1,951	\$1,951	7100.5 hours @ 8 hr/day = 887.6 days @ 25% "C" days = 221.9 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	0.0	days	\$25.00	\$0	\$0	7100.5 hours @ 8 hr/day = 887.6 days @ 0% "C" days = 0.0 days	0% of non-supv hrs in Level C (price: \$25/day)
Health & Safety Officer	173.4	hours	\$75.00	\$13,005	\$13,005	7100.5 hours @ 2.5% hr/hr = 177.5 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$14,956	\$14,956		
6.25 Supervision						26 weeks for closure of FAC Ponds	
Foreman	1040.0	hours	\$65.00	\$67,600	\$67,600	26 weeks @ 40 hrs/wk = 1040.0 hours	Foreman rate 2011 3rd party quote
Site Project Manager	0.0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$67,600	\$67,600		

6.0 Fac Ponds 1/2, 3 & 8

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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6.26 Certification						Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory labor hours for all tasks	
Engineer	104.0	hours	\$130.00	\$13,520	\$13,520	7100.5 hours @ 0.015 hr/hr = 106.5 hours	Engineer rate: 2011 3rd party quote
Clerical	104.0	hours	\$45.00	\$4,680	\$4,680	7100.5 hours @ 0.015 hr/hr = 106.5 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$18,200	\$18,200		
<i>(Subt: Assemblies 6.24 thru 6.26)</i>				\$100,756	\$100,756	<i>supervision, health & safety, and certification</i>	

6.0 Fac Ponds	Direct Cost	Total	Basic	\$7,468,088	\$3,685,091
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6.0 Fac Ponds 1/2, 3 & 8			
Total Cost Summary Cost Category			
	Proposed Percent of Direct Cost	Proposed 2011 Cost OffSite Disposal	Cost Range
Direct Costs/Basic Disposal		\$7,468,088	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$522,766	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$298,724	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$448,085	note: DEC uses 6%
Engineering During Construction	2.00%	\$149,362	note: DEC uses 2%
General Contractor Profit	6.00%	\$448,085	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$1,867,022	
Subt: Fac Ponds		\$9,335,110	
Plus Contingency	10.00%	\$933,511	CWM and DEC 10%
Tot: Fac Ponds		\$10,268,621	

Cost References:

"RSM/HC" refers to the RSMs "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)

"RSM/UP" refers to the RSMs "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)

"RSM/BC" refers to the RSMs "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

**Overall Site-Wide Closure Cost Estimate
1-Nov-13**

NOTE: Sheet to be added.

6.04 Fac Pond 5						
Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Price - Offsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References

6.04.1 Inventory Verification					production rate: 0.5 hour/pond to take depth estimate and estimate volume; two persons required	
Laborer	1.0	hours	\$39.00	\$39	1 ponds @ 0.5 hr/pond = 0.5 hours @ 2 units/crew = 1.0 hours	HASP req's two; loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$39		
(Subt: Assemblies 6.04.1)				\$39	Inventory of liquid volume in Pond 5	

6.04.2 Ponds' Sampling & Analysis					production rate = 2 hours per composite sample for a three-person crew	
<i>Batch Sampling Events</i>					1 events @ 3 samp/evnt= 3 samples	sampling & analysis prior to pond discharge
Technician	18.0	hours	\$38.00	\$684	3 samps @ 2.0 hrs/samp = 6.0 hours @ 3 units/crew = 18.0 hours	technician rate: 2011 3rd party quote
Sampling Equipment	6.0	hours	\$25.00	\$150	3 samps @ 2.0 hrs/samp = 6.0 hours @ 1 units/crew = 6.0 hours	boat, samplers, meters, etc.
Sampling Supplies	3.0	samp	\$25.00	\$75	3 samples	bottles, shipping supplies
Specific Conductance	3.0	samp	\$13.33	\$40	3 samples	analytical price: average of three quotes
pH	3.0	samp	\$10.67	\$32	3 samples	analytical price: average of three quotes
Total Dissolved Solids	3.0	samp	\$15.00	\$45	3 samples	analytical price: average of three quotes
Total Dissolved Volatile Solids	3.0	samp	\$23.33	\$70	3 samples	analytical price: average of three quotes
Alkalinity	3.0	samp	\$15.33	\$46	3 samples	analytical price: average of three quotes
Hardness	3.0	samp	\$24.33	\$73	3 samples	analytical price: average of three quotes
Total Suspended Solids	3.0	samp	\$13.33	\$40	3 samples	analytical price: average of three quotes
Temperature	3.0	samp	\$0.00	\$0	3 samples	Obtained using field equipment
Ammonia	3.0	samp	\$22.67	\$68	3 samples	analytical price: average of three quotes
TON (TKN-NH3)	3.0	samp	\$41.67	\$125	3 samples	analytical price: average of three quotes
Phosphorous	3.0	samp	\$20.00	\$60	3 samples	analytical price: average of three quotes
Cyanide	3.0	samp	\$35.00	\$105	3 samples	analytical price: average of three quotes
Sulfides	3.0	samp	\$25.00	\$75	3 samples	analytical price: average of three quotes
Fluoride	3.0	samp	\$19.33	\$58	3 samples	analytical price: average of three quotes
Chlorine	3.0	samp	\$19.33	\$58	3 samples	analytical price: average of three quotes
Residual Chlorine	3.0	samp	\$15.00	\$45	3 samples	analytical price: average of three quotes
NO2	3.0	samp	\$21.00	\$63	3 samples	analytical price: average of three quotes
NO3	3.0	samp	\$19.33	\$58	3 samples	analytical price: average of three quotes
Pesticides/PCBs	3.0	samp	\$133.33	\$400	3 samples	analytical price: average of three quotes
VOCs	3.0	samp	\$105.00	\$315	3 samples	analytical price: average of three quotes
Priority Poll'nt Organics (semi-VOC)	3.0	samp	\$208.33	\$625	3 samples	analytical price: average of three quotes
Oil & Grease	3.0	samp	\$21.67	\$65	3 samples	analytical price: average of three quotes
Total Phenols	3.0	samp	\$26.67	\$80	3 samples	analytical price: average of three quotes
Priority Pollutant Metals	3.0	samp	\$188.00	\$564	3 samples	analytical price: average of three quotes
Settleable Solids	3.0	samp	\$13.33	\$40	3 samples	analytical price: average of three quotes
Dissolved Oxygen	3.0	samp	\$0.00	\$0	3 samples	Obtained using field equipment
Sulfates	3.0	samp	\$21.00	\$63	3 samples	analytical price: average of three quotes
BOD	3.0	samp	\$30.00	\$90	3 samples	analytical price: average of three quotes
TOC	3.0	samp	\$31.67	\$95	3 samples	analytical price: average of three quotes

NOTE: Sheet to be added.

Mercury (245.1)	3.0	samp	\$25.00	\$75	3 samples	analytical price: average of three quotes
Mercury (1631B)	3.0	samp	\$111.67	\$335	3 samples	analytical price: average of three quotes
Surfactants	3.0	samp	\$28.33	\$85	3 samples	analytical price: average of three quotes
Acute Toxicity	1.0	samp	\$7,600.00	\$7,600	1 samples	one quote: actual 2010 cost
Subt - Ponds' Sampling & Analysis				\$12,402		
6.04.3 S&A Certification & Report					one event for divers to check discharge pipe; one 40-hour pre-discharge qualification report	
Divers (Sr. Technicians)	0.0	hours	\$0.00	\$0	included in underwater inspection	
SCBA Gear (2 units)	0.0	hours	\$0.00	\$0	included in underwater inspection	
Laborer (Surface Support)	0.0	hours	\$0.00	\$0	included in underwater inspection	
Underwater Inspection	1.0	each	\$4,000.00	\$4,000	\$4000 per event @ 1 event	Based on 2010 site rate quote
Engineer (Report)	40.0	hours	\$130.00	\$5,200	1 events @ 40 hrs/event = 40.0 hours @ 1 units/crew = 40.0 hours	Eng. Rate: rate 2011 3rd party quote
Subt - S&A Cert'n & Report				\$9,200	<i>diver(s) to check discharge pipe; also engineer's pre-discharge qualification report</i>	
(Subt: Assem's 6.04.2 thru 6.04.3)				\$21,602		

**Overall Site-Wide Closure Cost Estimate
1-Nov-13**

NOTE: Sheet to be added.

6.04 Fac Pond 5				2011 CWM	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	Price - Offsite Disposal		
6.04.4 Empty (Pump) FAC Pond 5					prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	
<i>FAC Pond 5 Inventory in Gallons</i>	24700000	<i>gals</i>	<i>n/a</i>	<i>n/a</i>	<i>412.0 total hours req'd to pump</i>	<i>Fac Pond 5 = 24,700,000 gallons</i>
AWTS Tech'n (8-hr day shift)	206.0	day hrs	\$65.00	\$13,390	412.0 tot hrs @ 50% (day shift) = 206.0 hours @ 1 units/crew = 206.0 hours	technician rate: 2011 3rd party quote
AWTS Tech'n (8-hr night shift)	206.0	nite hrs	\$65.00	\$13,390	412.0 tot hrs @ 50% (nite shift) = 206.0 hours @ 1 units/crew = 206.0 hours	technician rate: 2011 3rd party quote
Maintenance (day shift only)	123.6	day hrs	\$45.00	\$5,562	412.0 tot hrs @ 30% (nite shift) = 123.6 hours @ 1 units/crew = 123.6 hours	maintenance rate: 2011 3rd party quote
Tech/Sampler (day shift only)	41.2	day hrs	\$38.00	\$1,566	412.0 tot hrs @ 10% (day shift) = 41.2 hours @ 1 units/crew = 41.2 hours	technician rate: 2011 3rd party quote
Settleable Solids	103.0	samp	\$13.33	\$1,373	412.0 tot hrs @ 1.0 sample per 4.0 hours = 103 samples	analytical price: average of three quotes
Sulfide (total)	5.2	samp	\$25.00	\$130	412.0 tot hrs @ 1.0 sample per 80.0 hours = 5 samples	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	412.0	total hrs	\$12.34	\$5,084	412.0 tot hrs @ 100% total time = 412.0 hours @ 1 units/crew = 412.0 hours	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam/3,000 LF)	1236000.0	foot-hrs	\$0.011	\$13,596	412.0 tot hrs @ 100% total time = 412.0 hours @ 3000 LF/crew = 1236000 foot-hrs	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Pump FAC Pond 1/2	24700000	<i>gals @</i>	<i>0.00219</i>	\$54,091	<i>transfer contents of FAC Pond 5 to discharge pipe to Niagara River</i>	
6.04.5 Remove Fac Pond 5 Ballast					Ballast area assume 1.73 acres	
<i>FAC Pond 5 Ballast Area in SF x 1'</i>		<i>CY</i>	<i>n/a</i>		<i>75471.0 SF * 1 ft. depth / 27 = 2795.22 CY</i>	
Laborer	28.0	hours	\$39.00	\$1,090	2795.2 CY @ 100 CY/hr = 28.0 hours @ 1 units/crew = 28.0 hours	loaded labor rate: 2011 3rd party quote
Equipment Operator	28.0	hours	\$45.00	\$1,258	2795.2 CY @ 100 CY/hr = 28.0 hours @ 1 units/crew = 28.0 hours	loaded labor rate: 2011 3rd party quote
Excavator	28.0	hours	\$84.09	\$2,351	2795.2 CY @ 100 CY/hr = 28.0 hours @ 1 units/crew = 28.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Driver Onsite Disp.	28.0	hours	\$45.00	\$0	2795.2 CY @ 100 CY/hr = 28.0 hours @ 1 units/crew = 28.0 hours	loaded labor rate: 2011 3rd party quote
Dump Truck (12-ton) Onsite Disp.	28.0	hours	\$24.78	\$0	2795.2 CY @ 100 CY/hr = 28.0 hours @ 1 units/crew = 28.0 hours	RSM/HC p. 469 (line item 01 54 33 20 5250)
Offsite Transportation	1034.2	miles	\$3.25	\$3,361	4136.6 tons @ 20 tons/load = 206.8 loads 5 miles/trip = 1034.2 miles	Rate: transporter's quote
Offsite Disposal	4136.9	tons	\$27.000	\$111,697	2795.2 CY * 1.48 ton/CY = \$4,137 tons	Non-Haz Disposal Cost
Subtotal - Ballast Removal				\$119,757		

**Overall Site-Wide Closure Cost Estimate
1-Nov-13**

NOTE: Sheet to be added.

6.04 Fac Pond 5											
Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Price - Offsite Disposal	Basis of Production and Quantities for In-house Estimate				In-house Pricing References		
6.04.8 Backfill/Grade - FAC 5					berm						
<i>FAC Pond 5 Backfill Volume</i>	<i>58550.0</i>	<i>CY</i>	<i>n/a</i>		<i>58550 CY</i>						
Laborer	292.8	hours	\$39.00	\$11,417	58550 CY @	200 CY/hr =	292.8 hours @	1 units/crew =	292.8 hours	loaded labor rate: 2011 3rd party quote	
Equipment Operator (Medium)	585.5	hours	\$45.00	\$26,348	58550 CY @	200 CY/hr =	292.8 hours @	2 units/crew =	585.5 hours	loaded labor rate: 2011 3rd party quote	
Dozer (200 hp)	585.5	hours	\$56.38	\$33,010	58550 CY @	200 CY/hr =	292.8 hours @	2 units/crew =	585.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4260)	
Offsite Borrow - Transportation Cost	0.0	miles		\$0	Assumes only on-site berm material will be used.						
Offsite Borrow - Material Cost	0.0	CY		\$0	Assumes only on-site berm material will be used.						
Subt - Backfill/Grade - FAC 5	<i>58550.0</i>	<i>cy @</i>	<i>\$1.21</i>	\$70,775	<i>backfill and grade FAC Pond 5</i>						
6.04.9 Seed/Fertilize FAC 5					soil prep prod' rate = 33K sf/day (0.75 ac/day); seed/fert prod'n rate = 80K sf/day (1.8 ac/day)						
<i>FAC Pond 5 Surface Area</i>	<i>326.7</i>	<i>MSF</i>	<i>n/a</i>	<i>n/a</i>	<i>7.5 acres</i>						
Soil Preparation	0.0	MSF	\$0.00	\$0	not necessary						
Seeding & Fertilizing	326.7	MSF	\$73.97	\$24,166	327 MSF						
Subt - Seed/Fert FAC 5	<i>7.5</i>	<i>acres @</i>	<i>\$3,222</i>	\$24,166	<i>seeding and fertilizing FAC Pond 5</i>						
6.04.10 FAC 5 GW Well Monitoring					production = 0.5 hours/sample for two techs						
Technician	12.0	hours	\$38.00	\$456	12.0 samp @	0.5 hrs/samp =	6.0 hours @	2 units/crew =	12.0 hours	technician rate: 2011 3rd party quote	
Sampling Supplies	12.0	samp	\$25.00	\$300	12.0 samples						
VOC Analysis (EPA 624)	12.0	samp	\$105.00	\$1,260	6.0 points @	2.0 samps/pt =	12.0 samples	analytical price: average of three quotes			
Subt - GW Well Monitoring				\$2,016	<i>monitoring of three monitoring wells (plus three QA blanks/duplicates) - two events</i>						

**Overall Site-Wide Closure Cost Estimate
1-Nov-13**

NOTE: Sheet to be added.

6.04 Fac Pond 5						
Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Price - Offsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References

6.04.11 PPE Usage & H&S Plan					Level C @ 25%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	197.2	days	\$0.00	\$0	2103.0 hours @ 8 hr/day = 262.9 days @ 75% "D" days = 197.2 days	Standard Work Clothes
PPE Usage - Level C (moderate)	65.7	days	\$9.00	\$591	2103.0 hours @ 8 hr/day = 262.9 days @ 25% "C" days = 65.7 days	25% of non-supv hrs in Level C (used facility price: \$9/day)
Health & Safety Officer	52.6	hours	\$75.00	\$3,943	2103.0 hours @ 2.5% hr/hr = 52.6 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$4,535		
6.04.12 Supervision					10 weeks for closure of Fac Pond 5	
Foreman	400.0	hours	\$65.00	\$26,000	10.0 weeks @ 40 hrs/wk = 400	Foreman rate 2011 3rd party quote
Site Project Manager	0.0	hours	\$59.72	\$0	Included in indirect costs	
Subtotal - Supervision				\$26,000		
6.04.13 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory labor hours for all tasks	
Engineer	31.5	hours	\$130.00	\$4,101	2103.0 hours @ 0.015 hr/hr = 31.5 hours	Engineer rate: 2011 3rd party quote
Clerical	31.5	hours	\$45.00	\$1,419	2103.0 hours @ 0.015 hr/hr = 31.5 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$5,520		
(Subt: Assem. 6.04.11 thru 6.04.13)				\$36,055	supervision, health & safety, and certification	

6.04 Fac Pond 5	Direct Cost	Total	Basic	\$366,122		

**Overall Site-Wide Closure Cost Estimate
1-Nov-13**

NOTE: Sheet to be added.

6.04 Fac Pond 5 Total Cost Summary				
Cost Category	Percent of Direct Cost		2011 Cost Offsite Disposal	Cost Range
Direct Costs/Basic Disposal			\$366,122	
Plus Indirect Costs/Profit:				
Site Activity Management Costs	7.00%		\$25,629	DEC 7%
General Contractor Home Office	4.00%		\$14,645	DEC 4%
Pre-Construction Design Costs	6.00%		\$21,967	DEC 6%
Engineering During Construction	2.00%		\$7,322	DEC 2%
General Contractor Profit	6.00%		\$21,967	DEC 6%
Indirect Costs/Basic Disposal	25.00%		\$91,531	
Subtotal - FAC Pond 5			\$457,653	
Plus Contingency	10.00%		\$45,765	CWM & DEC 10%
Total - FAC Ponds			\$503,418	
Percent Differential			100.0%	

Cost References:

- "RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
- "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data", 2004 Edition (rates adjusted for inflation)
- "RSM/MC" refers to the RSMeans "Mechanical Cost Data", 2004 Edition
- "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

7.0 CSA 29 (Truck Wash Bldg)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
7.1 Inventory Verification						prod'n rate: 15 min/rolloff; two persons required	
Laborer	1.5	hours	\$39.00	\$59	\$59	3 rolloffs @ 0.25 hr/rolloff = 0.8 hours @ 2 units/crew = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification (Subt: Assemblies 7.1 - 7.1)				\$59	\$59	conducting inventory of CSA 29	
7.2 Transp ROs to onsite L'dfill						prod'n rate = 0.5 hrs for onsite travel; three 30-CY (16 ton) solids' rolloffs parked at CSA 29 = 48 tons	
Road Tractor (4 x 2, 30-ton)	1.5	hours	\$32.45	\$49	\$49	90 CY @ 30 CY/load = 3.0 loads @ 0.5 hrs/trip = 1.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	1.5	hours	\$45.00	\$68	\$68	90 CY @ 30 CY/load = 3.0 loads @ 0.5 hrs/trip = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30 CY)	1.5	hours	\$19.02	\$29	\$29	90 CY @ 30 CY/load = 3.0 loads @ 0.5 hrs/trip = 1.5 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Transp Rolloffs to Landfill				\$145	\$145		
7.3 Unload Solids Rolloffs						Not Applicable: included in 7.2 above	
Laborer	0.0	hours	\$39.00	\$0	\$0		loaded labor rate: loaded labor rate 2011 3rd party quote
Loader (small)	0.0	hours	\$14.39	\$0	\$0		RSM/HC p. 468 (line item 01 54 33 20 4610)
Rolloff (30 CY)	0.0	hours	\$19.02	\$0	\$0		dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Unload Rolloffs Onsite				\$0	\$0		
7.4 Offsite Solids T&D						assumes off-site land disposal; 1 CY = 1065 Lbs;	
Offsite Transport'n - Rolloff Solids	1155.0	miles	\$3.25	\$3,754	\$0	90 CY @ 30 CY/load = 3.0 loads @ 385 miles/trip = 1155 miles	Rate: transporters quote/site experience
Offsite Disposal - Rolloff Solids	48.0	tons	\$90.00	\$4,320	\$0	90 CY @ 0.5333 tons/CY = 48.0 tons	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite Rolloff Solids T&D (Subt: Assemblies 7.2 - 7.4)				\$8,074	\$0	landfill disposal of 90 CY (48 tons)	
				\$8,218	\$145		
7.5 Decon CSA 29 (wash)						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	13.9	hours	\$39.00	\$542	\$542	1462 SF @ 105 SF/hr = 13.9 hours @ 1 pers/crew = 13.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	13.9	hours	\$4.04	\$56	\$56	1462 SF @ 105 SF/hr = 13.9 hours @ 1 unit/crew = 13.9 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	13.9	hours	\$3.41	\$47	\$47	1462 SF @ 105 SF/hr = 13.9 hours @ 1 unit/crew = 13.9 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 29 (wash)				\$646	\$646		
7.6 Decon CSA 29 (rinse)						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	13.9	hours	\$39.00	\$542	\$542	1462 SF @ 105 SF/hr = 13.9 hours @ 1 pers/crew = 13.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	13.9	hours	\$4.04	\$56	\$56	1462 SF @ 105 SF/hr = 13.9 hours @ 1 unit/crew = 13.9 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	13.9	hours	\$3.41	\$47	\$47	1462 SF @ 105 SF/hr = 13.9 hours @ 1 unit/crew = 13.9 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 29 (rinse)				\$646	\$646		
7.7 Decon Water Samp/Disp						production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	2924.0	gal	\$0.0313	\$92	\$92	1462 SF @ 1.0 gal/sf/wa = 1462 gallons + 1.0 gal/sf/rinse = 1462 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$249	\$249		

7.0 CSA 29 (Truck Wash Bldg)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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7.8 PCB Wipe Samples						production rate = 0.5 hours/sample for two techs	
Technician	3.4	hours	\$38.00	\$129	\$129	3.4 samp @ 0.5 hr/samp = 1.7 hours @ 2 pers/crew = 3.4 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	1.1	samp	\$446.67	\$491	\$491	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	2.3	samp	\$83.33	\$192	\$192	1462 SF @ 625 SF/samp = 2.3 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$812	\$812		
(Subt: Assemblies 7.5 - 7.8)				\$2,352	\$2,352	decontamination & sampling of CSA 29	

7.9 Soils Samples						production rate = 0.5 hours/sample for two techs	
Technician	4.4	hours	\$38.00	\$167	\$167	4.4 samp @ 0.5 hr/samp = 2.2 hours @ 2 pers/crew = 4.4 hours	technician rate: rate 2011 3rd party quote
VOC/PCB/Total Metals Analysis	4.4	samp	\$395.00	\$1,738	\$1,738	4.0 grid sq @ 1.1 samp/area = 4.4 samples	analytical price: average of three quotes
Subt - Soil Samples				\$1,905	\$1,905		
(Subt: Assemblies 7.9 - 7.9)				\$1,905	\$1,905	soil sampling at CSA 29	

Total Non-Super hours 39.7

7.10 PPE Usage/H&S Planning						Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Mod Level C	1.3	days	\$9.00	\$12	\$12	39.7 hours @ 8 hr/day = 5.0 days @ 25% "Mod C" days = 1.3 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	3.7	days	\$25.00	\$93	\$93	39.7 hours @ 8 hr/day = 5.0 days @ 75% "C" days = 3.7 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	1.7	hours	\$75.00	\$128	\$128	39.7 hours @ 2.5% hr/hr = 1.7 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$232	\$232		
7.11 Supervision						0.2 weeks for closure of Truck Wash Building	
Foreman	8.0	hours	\$65.00	\$520	\$520	0.2 weeks @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0.0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520	\$520		
7.12 Certification						Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	1.0	hours	\$130.00	\$130	\$130	39.7 hours @ 0.015 hr/hr = 1.0 hours	Engineer rate: 2011 3rd party quote
Clerical	1.0	hours	\$45.00	\$45	\$45	39.7 hours @ 0.015 hr/hr = 1.0 hours	Clerical rate: 2011 3rd party quote
Subtotal CertificationSubtotal -Certification				\$175	\$175		
(Subt: Assemblies 7.10 - 7.12)				\$927	\$927		

7.0 CSA 29 (Truck Wash Bldg)	Direct Cost	Total	Basic	\$13,461	\$5,387
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7.0 CSA 29 (Truck Wash Bldg)			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost OffSite Disposal	Cost Range
Direct Costs/Basic Disposal		\$13,461	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$942	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$538	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$808	note: DEC uses 6%
Engineering During Construction	2.00%	\$269	note: DEC uses 2%
General Contractor Profit	6.00%	\$808	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$3,365	
Subtotal: CSA 29 (Trk Wsh Bldg)		\$16,826	
Plus Contingency	10.00%	\$1,683	CWM and DEC 10%
Total: CSA 29 (Truck Wash Bldg)		\$18,509	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

8.0 CSA 11 (South Trail Parking)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
8.1 Inventory Verification							
Laborer	1.25	hours	\$39.00	\$49	\$49	prod'n rates: 8 tankers or rolloffs/hour/crew; two persons required; 5 tankers @ 0.125 hr/tanker = 0.625 hours @ 2 units/crew = 1.25 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$49	\$49	area capacity is 29 tankers: 5 tanker proposed permit limit	However, unit only capable of storing 29 tankers
8.1a Inventory Verification							
Laborer	12	hours	\$39.00	\$468	\$468	prod'n rates: 8 tankers or rolloffs/hour/crew; two persons required; 48 rolloffs @ 0.125 hr/rolloff = 6 hours @ 2 units/crew = 12.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$468	\$468	area capacity is 58 rolloffs end to end: 48 realistic limit	
<i>(Subt: Assemblies 8.1 - 8.1)</i>							
8.2 Offsite Transportation							
Transport in 5,500-gal tanker	7645.0	miles	\$3.50	\$26,758	\$26,758	Five (5) 5,500-gal tankers parked at CSA 11 = 27,500 gals 27,500 gals @ 5500 gals/load = 5.0 loads @ 1529 miles/trip = 7645 miles	Rate: transporters quote/site experience
Offsite Transportation - Solids	18480.0	miles	\$3.25	\$60,060	\$0	768.0 tons @ 16 tons/load = 48.0 loads @ 385 miles/trip = 18480.0 miles	Rate: transporters quote/site experience
Subt - Offsite Transportation				\$86,818	\$26,758	assumes offsite disposal/incineration of liquid	
8.2a Transp All Rolloffs: Onsite Stab							
Road Tractor (4 x 2, 30-ton)	8.0	hours	\$32.45	\$0	\$260	production rate = 10 mins/rolloff for on-site travel (all rolloffs previously existing at site) 48 rolloffs @ 1 rolloff/load = 48.0 loads @ 10 mins/trip = 8.0 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	8.0	hours	\$45.00	\$0	\$360	48 rolloffs @ 1 rolloff/load = 48.0 loads @ 10 mins/trip = 8.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0.0	hours	\$19.02	\$0	\$0	0 rolloffs @ 1 rolloff/load = 0.0 loads @ 0.5 hours/trip = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subtotal -Transport Rolloffs Onsite				\$0	\$620	assumes onsite stabilization and disposal	
8.2b Stabilization (non-Macro mat'l)							
PROCESS TONS (incl kiln dust)	883.2	TONS	n/a			prod'n rate = 100 tons/hour = 800 tons/day (non-Macro Room material); 30 CY roll = 16 tons 48 rolloffs @ 30 CY each @ 16 tons/rolloff + 15% kiln dust = 883.2 tons	
Cement Kiln Dust - Mat'l&Delv Cost	115.2	tons	\$48.00	\$0	\$5,530		CWM actual 2011 costs
Stabilization Cost	768.0	tons	\$25.00	\$0	\$19,200		CWM actual 2011 costs inc. labor & equipment
TCLP Testing - RCRA (EPA 1311)	16.0	samp	\$348.33	\$0	\$5,573	48 rolloffs @ 3 ro's/samp = 16.0 samples	average of 3 third party labs; one sample per 3 rolloffs
Subt - Stabilization				\$0	\$30,303		
8.2c Transp Rolloffs to Onsite L'fill							
Road Tractor (4 x 2, 30-ton)	12.0	hours	\$32.45	\$0	\$389	production rate = 0.25 hours for onsite travel 48 rolloffs @ 1 rolloff/load = 48.0 loads @ 0.25 hours/trip = 12.0 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	12.0	hours	\$45.00	\$0	\$540	48 rolloffs @ 1 rolloff/load = 48.0 loads @ 0.25 hours/trip = 12.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0.0	hours	\$19.02	\$0	\$0		dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Transp RO's to Onsite Landfill				\$0	\$929	Assembly estimate assumes on-site disposal	
8.2d Unload non-Macro Rolloffs							
Laborer	12.0	hours	\$39.00	\$0	\$468	production rate = 0.25 hours for unload in landfill 48 rolloffs @ 1 rolloff/load = 48.0 loads @ 0.25 hours/trip = 12.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	12.0	hours	\$19.18	\$0	\$230	48 rolloffs @ 1 rolloff/load = 48.0 loads @ 0.25 hours/trip = 12.0 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Equipment Operator (Medium)	12.0	hours	\$45.00	\$0	\$540	48 rolloffs @ 1 rolloff/load = 48.0 loads @ 0.25 hours/trip = 12.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0.0	hours	\$19.02	\$0	\$0		dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Unload RO's at Onsite L'Fill				\$0	\$1,238		
8.3 Offsite Disposal							
Disposal Cost (Incin PCB Liquids)	27500.0	gallons	\$4.68	\$128,700	\$128,700	27,500 gallons	HWC/ETC 2004 & Current third party rate
Offsite Disp - Haz Rolloff Solids	768.0	tons	\$133.00	\$102,144	\$0	48 rolloffs @ 30 CY each @ 16 tons/rolloff = 768.0 tons	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite Liquids Disposal				\$230,844	\$128,700		
<i>(Subt: Assemblies 8.2 - 8.3)</i>							
				\$317,662	\$188,548	disposal of bulk liquid PCB wastes from 5 tankers/48 rolloffs	

8.0 CSA 11 (South Trail Parking)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
8.4 Decon CSA 11 Area (wash)						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	140.0	hours	\$39.00	\$5,460	\$5,460	14702 SF @ 105 SF/hr = 140.0 hours @ 1 pers/crew = 140.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	140.0	hours	\$4.04	\$566	\$566	14702 SF @ 105 SF/hr = 140.0 hours @ 1 unit/crew = 140.0 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	140.0	hours	\$3.41	\$477	\$477	14702 SF @ 105 SF/hr = 140.0 hours @ 1 unit/crew = 140.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 11 Area (wash)				\$6,503	\$6,503		
8.5 Decon CSA 11 Area (rinse)						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	140.0	hours	\$39.00	\$5,460	\$5,460	14702 SF @ 105 SF/hr = 140.0 hours @ 1 pers/crew = 140.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	140.0	hours	\$4.04	\$566	\$566	14702 SF @ 105 SF/hr = 140.0 hours @ 1 unit/crew = 140.0 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	140.0	hours	\$3.41	\$477	\$477	14702 SF @ 105 SF/hr = 140.0 hours @ 1 unit/crew = 140.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 11 Area (rinse)				\$6,503	\$6,503		
8.6 Decon water samp/disp - N/A						production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	15000.0	gal	\$0.0313	\$470	\$470	15,000 gallons	facility o/s mild waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$627	\$627		
8.7 PCB Wipe Samples						production rate = 0.5 hours/sample for two techs	
Technician	24.6	hours	\$38.00	\$935	\$935	24.6 samp @ 0.5 hr/samp = 12.3 hours @ 2 pers/crew = 24.6 hours	technician rate: rate 2011 3rd party quote
TLCP (Metals/VOCs/Semi-VOCs)	1.1	samp	\$446.67	\$491	\$491	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	23.5	samp	\$83.33	\$1,958	\$1,958	14702 SF @ 625 SF/samp = 23.5 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemblies 8.4 - 8.7)				\$3,384	\$3,384		
				\$17,017	\$17,017	decontamination & sampling of CSA 11 (South Parking Area)	
8.8 Demolish Conc CSA 11						prod'n rate = 8 CY/hr (site experience); 10" mesh reinf: 1 cf = 150#; 1 cy = 2 tons	
Laborer	56.5	hours	\$39.00	\$2,204	\$2,204	14702 SF @ 260 SF/hour 56.5 hours @ 1 units/crew = 56.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	113.1	hours	\$50.70	\$5,734	\$5,734	14702 SF @ 260 SF/hour 56.5 hours @ 2 units/crew = 113.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	113.1	hours	\$84.09	\$9,511	\$9,511	14702 SF @ 260 SF/hour 56.5 hours @ 2 units/crew = 113.1 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Hydraulic Hammer Attach (1,200#)	56.5	hours	\$20.59	\$1,163	\$1,163	14702 SF @ 260 SF/hour 56.5 hours @ 1 units/crew = 56.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0349)
Claw Attachment	56.5	hours	\$2.47	\$140	\$140	14702 SF @ 260 SF/hour 56.5 hours @ 1 units/crew = 56.5 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	\$0	not required	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Truck (12-ton load)	56.5	hours	\$24.78	\$1,400	\$1,400	14702 SF @ 260 SF/hour 56.5 hours @ 1 units/crew = 56.5 hours	RSM/HC p. 469 (line item 01 54 33 20 5250)
Welding Equipment	56.5	hours	\$5.41	\$306	\$306	14702 SF @ 260 SF/hour 56.5 hours @ 1 units/crew = 56.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Demolish Conc CSA 11				\$20,457	\$20,457	452 CY @ 2 tons/CY = 903.9 tons	
8.9 Transp/Unload debris to onsite landfill						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	0.0	hours	\$32.45	\$0	\$0	not required	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	37.7	hours	\$45.00	\$0	\$1,697	903.9 tons @ 12 tons/load = 75.3 loads 0.5 hours/trip = 37.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dump Truck (12-ton load)	0.0	hours	\$24.78	\$0	\$0	Included in 8.8 rate above	RSM/HC p. 469 (line item 01 54 33 20 5250)
Subt - Transp Debris to onsite L'fill				\$0	\$1,697	onsite disposal of debris	

8.0 CSA 11 (South Trail Parking)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
8.10 Unload Demolition Debris						Included in 8.9	
Laborer	0.0	hours	\$39.00	\$0	\$0	not required	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$50.70	\$0	\$0	not required	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.0	hours	\$30.03	\$0	\$0	not required	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.0	hours	\$5.20	\$0	\$0	not required	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Unload Demo Debris				\$0	\$0		
8.11 Offsite Conc Debris T&D						assume off-site "D" disposal facility within 50 miles of facility; 1 CY = 32.5 SF of conc. @ 10" depth	
Offsite Transportation - Debris	150.5	miles	\$3.25	\$489	\$0	452 CY @ 15 CY/load = 30.1 loads @ 5 miles/trip = 150.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Concrete Debris	903.9	tons	\$35.00	\$31,637	\$0	452 CY @ 2 tons/CY = 903.9 tons	Modern Disposal/Site Experience
Subt - Offsite Conc Debris T&D				\$32,126	\$0		
(Subt: Assemblies 8.8 - 8.11)				\$52,582	\$22,153	off-site transport and disposal of demolition debris	
8.12 Soils Samples						production rate = 0.5 hours/sample for two techs	
Technician	15.4	hours	\$38.00	\$585	\$585	15.4 samp @ 0.5 hr/samp = 7.7 hours @ 2 pers/crew = 15.4 hours	technician rate: rate 2011 3rd party quote
VOC/PCB/Total Metals Analysis	15.4	samp	\$395.00	\$6,083	\$6,083	14.0 grid sq @ 1.1 samp/area = 15.4 samples	analytical price: average of three quotes
Subt - Soil Samples				\$6,668	\$6,668		
(Subt: Assemblies 8.12 - 8.12)				\$6,668	\$6,668	soil sampling at CSA 11	
Total Non-Super hours	584.4						
8.13 PPE Usage/H&S Planning						Level C @ 0%; Mod Level C @ 25%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	54.8	days	\$0.00	\$0	\$0	584.4 hours @ 8 hr/day = 73.1 days @ 75% "D" days = 54.8 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	18.3	days	\$9.00	\$165	\$165	584.4 hours @ 8 hr/day = 73.1 days @ 25% "Mod C" days = 18.3 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	0.0	days	\$25.00	\$0	\$0	584.4 hours @ 8 hr/day = 73.1 days @ 0% "C" days = 0 days	0% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	14.6	hours	\$75.00	\$1,095	\$1,095	584.4 hours @ 2.5% hr/hr = 14.6 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$1,260	\$1,260		
8.14 Supervision						2 weeks for closure of South Trailer Parking closure	
Foreman	80.0	hours	\$65.00	\$5,200	\$5,200	2 weeks @ 40 hrs/wk = 80.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0.0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$5,200	\$5,200		
8.15 Certification						Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	8.8	hours	\$130.00	\$1,144	\$1,144	584.4 hours @ 0.015 hr/hr = 8.8 hours	Engineer rate: 2011 3rd party quote
Clerical	8.8	hours	\$45.00	\$396	\$396	584.4 hours @ 0.015 hr/hr = 8.8 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$1,540	\$1,540		
(Subt: Assemblies 8.13 - 8.15)				\$8,000	\$8,000		

8.0 CSA 11 (South Trail Parking)	Direct Cost	Total	Basic	\$402,446	\$242,903
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8.0 CSA 11 (South Trail Parking)			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost OffSite Disposal	Cost Range
Direct Costs/Basic Disposal		\$402,446	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$28,171	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$16,098	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$24,147	note: DEC uses 6%
Engineering During Construction	2.00%	\$8,049	note: DEC uses 2%
General Contractor Profit	6.00%	\$24,147	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$100,611	
Subt: CSA 11 (SouthTrail Pkg)		\$503,057	
Plus Contingency	10.00%	\$50,306	CWM and DEC 10%
Total: CSA 11 (South Trail Pkg)		\$553,363	

Cost References:

"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)

"RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)

"RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

NOTE: Sheet to be added.

8.01 CSA New Full Trail Parking 5 Tankers

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
8.01.1 Inventory Verification							
Laborer	1.25	hours	\$39.00	\$49	\$49	prod'n rates: 8 tankers or rollofs/hour/crew; two persons required; 5 tankers @ 0.125 hr/tanker = 0.625 hours @ 2 units/crew = 1.25 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$49	\$49	area capacity is 24 tankers: 5 tanker proposed permit limit	However, unit only capable of storing 29 tankers
8.01.2 Inventory Verification							
Laborer	9.6	hours	\$39.00	\$374	\$374	prod'n rates: 8 tankers or rollofs/hour/crew; two persons required; 38 rollofs @ 0.125 hr/rolloff = 4.8 hours @ 2 units/crew = 9.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				\$374	\$374	area capacity is 48 rollofs end to end	
(Subt: Assemblies 8.01.1 - 8.01.2)				\$423	\$423	conducting inventory of CSA 11 (New Full Trailer Parking Area)	
8.01.3 Offsite Transportation							
Transport in 5,500-gal tanker	7645.0	miles	\$3.50	\$26,758	\$26,758	Five (5) 5,500-gal tankers parked at CSA 11 = 27,500 gals 27,500 gals @ 5500 gals/load = 5.0 loads @ 1529 miles/trip = 7645 miles	Rate: transporters quote/site experience
Offsite Transportation - Solids	14630.0	miles	\$3.25	\$47,548	\$0	608 tons @ 16 tons/load = 38.0 loads @ 385 miles/trip = 14630 miles	Rate: transporters quote/site experience
Subt - Offsite Transportation				\$74,305	\$26,758	assumes offsite disposal/incineration of liquid	
8.01.4 Transp All Rollofs: Onsite Stab							
Road Tractor (4 x 2, 30-ton)	6.3	hours	\$32.45	\$0	\$204	production rate = 10 mins/rolloff for on-site travel (all rollofs previously existing at site) 38 rollofs @ 1 rolloff/load = 38.0 loads @ 10 mins/trip = 6.3 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	6.3	hours	\$45.00	\$0	\$284	38 rollofs @ 1 rolloff/load = 38.0 loads @ 10 mins/trip = 6.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0.0	hours	\$19.02	\$0	\$0	0 rollofs @ 1 rolloff/load = 0.0 loads @ 0.5 hours/trip = 0.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subtotal -Transport Rollofs Onsite				\$0	\$488	assumes onsite stabilization and disposal	
8.01.5 Stabilization (non-Macro mat'l)							
PROCESS TONS (incl kiln dust)	699.0	TONS	n/a			prod'n rate = 100 tons/hour = 800 tons/day (non-Macro Room material); 30 CY roll = 16 tons 38 rollofs @ 30 CY each @ 16 tons/rolloff + 15% kiln dust = 699 tons	
Cement Kiln Dust - Mat'l&Delv Cost	91.0	tons	\$48.00	\$0	\$4,368		CWM actual 2011 costs
Stabilization Cost	608.0	tons	\$25.00	\$0	\$15,200		CWM actual 2011 costs inc. labor & equipment
TCLP Testing - RCRA (EPA 1311)	12.7	samp	\$348.33	\$0	\$4,424	38 rollofs @ 3 ro's/samp = 12.7 samples	average of 3 third party labs; one sample per 3 rollofs
Subt - Stabilization				\$0	\$23,992		
8.01.6 Transp Rollofs to Onsite L'fill							
Road Tractor (4 x 2, 30-ton)	9.5	hours	\$32.45	\$0	\$308	production rate = 0.25 hours for onsite travel 38 rollofs @ 1 rolloff/load = 38.0 loads @ 0.25 hours/trip = 9.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	9.5	hours	\$45.00	\$0	\$428	38 rollofs @ 1 rolloff/load = 38.0 loads @ 0.25 hours/trip = 9.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0.0	hours	\$19.02	\$0	\$0		dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Transp RO's to Onsite Landfill				\$0	\$736	Assembly estimate assumes on-site disposal	
8.01.7 Unload non-Macro Rollofs							
Laborer	9.5	hours	\$39.00	\$0	\$371	production rate = 0.25 hours for unload in landfill 38 rollofs @ 1 rolloff/load = 38.0 loads @ 0.25 hours/trip = 9.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	9.5	hours	\$19.18	\$0	\$182	38 rollofs @ 1 rolloff/load = 38.0 loads @ 0.25 hours/trip = 9.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Equipment Operator (Medium)	9.5	hours	\$45.00	\$0	\$428	38 rollofs @ 1 rolloff/load = 38.0 loads @ 0.25 hours/trip = 9.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0.0	hours	\$19.02	\$0	\$0		dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Unload RO's at Onsite L'Fill				\$0	\$980		
8.01.8 Offsite Disposal							
Disposal Cost (Incin PCB Liquids)	27500.0	gallons	\$4.68	\$128,700	\$128,700	27,500 gallons	HWC/ETC 2004 & Current third party rate
Offsite Disp - Haz Rolloff Solids	608.0	tons	\$133.00	\$80,864	\$0	38 rollofs @ 30 CY each @ 16 tons/rolloff = 608 tons	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite Liquids Disposal				\$209,564	\$128,700		
(Subt: Assemblies 8.01.3 - 8.01.8)				\$283,869	\$181,653	disposal of bulk liquid PCB wastes from 5 tankers/38 rollofs	

NOTE: Sheet to be added.

8.01 CSA New Full Trail Parking 5 Tankers

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
8.01.9 Decon CSA 11 Area (wash)							
						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	157.0	hours	\$39.00	\$6,123	\$6,123	16504 SF @ 105 SF/hr = 157 hours @ 1 pers/crew = 157 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	157.0	hours	\$4.04	\$634	\$634	16504 SF @ 105 SF/hr = 157 hours @ 1 unit/crew = 157 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	157.0	hours	\$3.41	\$535	\$535	16504 SF @ 105 SF/hr = 157 hours @ 1 unit/crew = 157 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 11 Area (wash)				\$7,293	\$7,293		
8.01.10 Decon CSA 11 Area (rinse)							
						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	
Laborer	157.0	hours	\$39.00	\$6,123	\$6,123	16504 SF @ 105 SF/hr = 157 hours @ 1 pers/crew = 157 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	157.0	hours	\$4.04	\$634	\$634	16504 SF @ 105 SF/hr = 157 hours @ 1 unit/crew = 157 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	157.0	hours	\$3.41	\$535	\$535	16504 SF @ 105 SF/hr = 157 hours @ 1 unit/crew = 157 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon CSA 11 Area (rinse)				\$7,293	\$7,293		
8.01.11 Decon water samp/disp - N/A							
						production rate = 0.5 hours/sample for two techs	
Technician	1.1	hours	\$38.00	\$42	\$42	1.1 samp @ 0.5 hr/samp = 0.6 hours @ 2 pers/crew = 1.1 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	1.1	samp	\$105.00	\$116	\$116	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
On-site Water Disposal	15000.0	gal	\$0.0313	\$470	\$470	15,000 gallons	facility o/s mild waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$627	\$627		
8.01.12 PCB Wipe Samples							
						production rate = 0.5 hours/sample for two techs	
Technician	26.4	hours	\$38.00	\$1,003	\$1,003	26.4 samp @ 0.5 hr/samp = 13.2 hours @ 2 pers/crew = 26.4 hours	technician rate: rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	1.1	samp	\$446.67	\$491	\$491	1.0 areas @ 1.1 samp/area = 1.1 samples	analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	26.4	samp	\$83.33	\$2,200	\$2,200	16504 SF @ 625 SF/samp = 26.4 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				\$3,694	\$3,694		
(Subt: Assemblies 8.01.9 - 8.01.12)				\$18,907	\$18,907	decontamination & sampling of CSA 11 (New Full Parking Area)	
8.01.13 Demolish Conc CSA 11							
						prod'n rate = 8 CY/hr (site experience); 10" mesh reinf: 1 cf = 150#; 1 cy = 2 tons	
Laborer	52.9	hours	\$39.00	\$2,063	\$2,063	13750 SF @ 260 SF/hour 52.9 hours @ 1 units/crew = 52.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	105.8	hours	\$50.70	\$5,364	\$5,364	13750 SF @ 260 SF/hour 52.9 hours @ 2 units/crew = 105.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	105.8	hours	\$84.09	\$8,897	\$8,897	13750 SF @ 260 SF/hour 52.9 hours @ 2 units/crew = 105.8 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Hydraulic Hammer Attach (1,200#)	52.9	hours	\$20.59	\$1,089	\$1,089	13750 SF @ 260 SF/hour 52.9 hours @ 1 units/crew = 52.9 hours	RSM/HC p. 467 (line item 01 54 33 20 0349)
Claw Attachment	52.9	hours	\$2.47	\$131	\$131	13750 SF @ 260 SF/hour 52.9 hours @ 1 units/crew = 52.9 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	\$30.03	\$0	\$0	not required	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Truck (12-ton load)	52.9	hours	\$24.78	\$1,311	\$1,311	13750 SF @ 260 SF/hour 52.9 hours @ 1 units/crew = 52.9 hours	RSM/HC p. 469 (line item 01 54 33 20 5250)
Welding Equipment	52.9	hours	\$5.41	\$286	\$286	13750 SF @ 260 SF/hour 52.9 hours @ 1 units/crew = 52.9 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Demolish Conc CSA 11				\$19,141	\$19,141	509.2 CY @ 2 tons/CY = 1018.4 tons	Arcadis Drawing No. D-3A
8.01.14 Transp/Unload debris to onsite landfi							
						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	0.0	hours	\$32.45	\$0	\$0	not required	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	42.4	hours	\$45.00	\$0	\$1,908	1018.4 tons @ 12 tons/load = 84.9 loads 0.5 hours/trip = 42.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dump Truck (12-ton load)	0.0	hours	\$24.78	\$0	\$0	Included in 8.01.13 rate above	RSM/HC p. 469 (line item 01 54 33 20 5250)
Subt - Transp Debris to onsite L'fill				\$0	\$1,908	onsite disposal of debris	

NOTE: Sheet to be added.

8.01 CSA New Full Trail Parking 5 Tankers

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References	
8.01.15 Unload Demolition Debris								
Laborer	0.0	hours	\$39.00	\$0	\$0	Included in 8.01.14 not required	loaded labor rate: loaded labor rate 2011 3rd party quote	
Equipment Operator (Medium)	0.0	hours	\$50.70	\$0	\$0	not required	loaded labor rate: loaded labor rate 2011 3rd party quote	
Loader	0.0	hours	\$30.03	\$0	\$0	not required	RSM/HC p. 469 (line item 01 54 33 20 4730)	
Dump Trailer (20 CY)	0.0	hours	\$5.20	\$0	\$0	not required	RSM/HC p. 469 (line item 01 54 33 20 5400)	
Subt - Unload Demo Debris				\$0	\$0			
8.01.16 Offsite Conc Debris T&D								
Offsite Transportation - Debris	161.5	miles	\$3.25	\$525	\$0	assume off-site "D" disposal facility within 50 miles of facility; 1 CY = 32.5 SF of conc. @ 10" depth 509.2 CY @ 15 CY/load = 33.9 loads @ 5 miles/trip = 169.5 miles	Rate: transporters quote/site experience	
Offsite Disposal - Concrete Debris	1018.4	tons	\$35.00	\$35,644	\$0	509.2 CY @ 2 tons/CY = 1018.4 tons	Modern Disposal/Site Experience	
Subt - Offsite Conc Debris T&D				\$36,169	\$0			
(Subt: Assemblies 8.01.13 - 8.01.16)				\$55,310	\$21,049	off-site transport and disposal of demolition debris		
8.01.17 Soils Samples								
Technician	6.6	hours	\$38.00	\$251	\$251	production rate = 0.5 hours/sample for two techs 13750/2500 = 6.0 grids 6.6 samp @ 0.5 hr/samp = 3.3 hours @ 2 pers/crew = 6.6 hours	50' x 50' sample grids technician rate: rate 2011 3rd party quote	
VOC/PCB/Total Metals Analysis	6.6	samp	\$395.00	\$2,607	\$2,607	6.0 grid sq @ 1.1 samp/area = 6.6 samples	analytical price: average of three quotes	
Subt - Soil Samples				\$2,858	\$2,858			
(Subt: Assemblies 8.01.17 - 8.01.17)				\$2,858	\$2,858	soil sampling at CSA 11		
Total Non-Super hours		593.6						
8.01.18 PPE Usage/H&S Planning								
PPE Usage - Level D	55.6	days	\$0.00	\$0	\$0	Level C @ 0%; Mod Level C @ 25%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs 593.6 hours @ 8 hr/day = 74.2 days @ 75% "D" days = 55.6 days	Standard Work Clothes - Site Experience	
PPE Usage - Mod Level C	18.6	days	\$9.00	\$167	\$167	593.6 hours @ 8 hr/day = 74.2 days @ 25% "Mod C" days = 18.6 days	25% of non-supv hrs in Mod Level C (price: \$9/day)	
PPE Usage - Level C	0.0	days	\$25.00	\$0	\$0	593.6 hours @ 8 hr/day = 74.2 days @ 0% "C" days = 0 days	0% of non-supv hrs in Level C (price: \$25/day)	
Safety Engineer	14.8	hours	\$75.00	\$1,110	\$1,110	593.6 hours @ 2.5% hr/hr = 14.8 hours	Safety Eng Rate: rate 2011 3rd party quote	
Subt - PPE Usage/H&S Planning				\$1,277	\$1,277			
8.01.19 Supervision								
Foreman	80.0	hours	\$65.00	\$5,200	\$5,200	2 weeks for closure of Full Trailer Parking closure 2 weeks @ 40 hrs/wk = 80.0 hours	Outside foreman rate: 2011 3rd party quote	
Site Project Manager	0.0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote	
Subtotal - Supervision				\$5,200	\$5,200			
8.01.20 Certification								
Engineer	8.9	hours	\$130.00	\$1,157	\$1,157	Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks 593.6 hours @ 0.015 hr/hr = 8.9 hours	Engineer rate: 2011 3rd party quote	
Clerical	8.9	hours	\$45.00	\$401	\$401	593.6 hours @ 0.015 hr/hr = 8.9 hours	Clerical rate: 2011 3rd party quote	
Subtotal - Certification				\$1,558	\$1,558			
(Subt: Assemblies 8.01.18 - 8.01.20)				\$8,035	\$8,035			
8.01 CSA New Full Trail Parking 5 Tankers	Direct Cost	Total	Basic	\$369,401	\$232,924			

NOTE: Sheet to be added.

8.01 CSA 11 (New Full Trail Parking)			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost OffSite Disposal	Cost Range
Direct Costs/Basic Disposal		\$369,401	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$25,858	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$14,776	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$22,164	note: DEC uses 6%
Engineering During Construction	2.00%	\$7,388	note: DEC uses 2%
General Contractor Profit	6.00%	\$22,164	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$92,350	
Subt: CSA 11 (SouthTrail Pkg)		\$461,751	
Plus Contingency	10.00%	\$46,175	CWM and DEC 10%
Total: CSA (New Full Trail Pkg)		\$507,926	

Cost References:

- "RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
- "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
- "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

10.0 Laboratory

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
10.1 Hazcat Lab Containers						Not necessary	
Subt - Hazcat Lab Containers				\$0	\$0	hazcat and inventory of laboratory contents not necessary - known quantities and types	
10.2 Hazcat/Overpack Lab Containers						production rate = 20 units/hour (1 unit per 3 min); assume 5 variously-sized lab containers/labpack	
Technician	60.0	hours	\$38.00	\$2,280	\$2,280	600 cont @ 20 cont/hr = 30.0 hours @ 2 units/crew = 60.0 hours	technician rate: rate 2011 3rd party quote
Chemist	30.0	hours	\$75.00	\$2,250	\$2,250	600 cont @ 20 cont/hr = 30.0 hours @ 1 units/crew = 30.0 hours	Chemist rate: rate 2011 3rd party quote
Labpacks (55-gal recond. steel)	120.0	each	\$114.68	\$13,762	\$13,762	600 cont @ 5 cont/LbPk = 120.0 Labpacks	2004 DEC Rate * Implicit Deflator
Subt - Overpack Lab Containers				\$18,292	\$18,292		
(Subt: Assemblies 10.1 thru 10.2)				\$18,292	\$18,292	loading, on-site transporting, unloading, and on-site disposal of drummed PCB solids	
10.3 Load Organic Liquid Labpacks						production rate = 80 drums/hour; RSM/UP p. 9-171 (line item 33-19-0103)	
Laborer	1.0	hours	\$39.00	\$39	\$39	37 LbPks @ 40 LbPks/Hr = 0.5 hours @ 2 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	0.5	hours	\$22.21	\$11	\$11	37 LbPks @ 40 LbPks/Hr = 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	0.5	hours	\$6.26	\$3	\$3	37 LbPks @ 40 LbPks/Hr = 0.5 hours @ 1 units/crew = 0.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Org. Liquid Labpacks				\$53	\$53		
10.4 Trans Org. Liq. LbPks Offsite						capacity per trailer = eighty (80) 55-gal drums	
Flatbed Transport	127.5	miles	\$3.50	\$446	\$446	37 LbPks @ 80 LbPk/load = 0.5 loads @ 255 miles/trip = 127.5 miles	Rate: transporters quote/site experience
Subt - Offsite Transp/Org. Liq. LbPk				\$446	\$446		
10.5 Offsite Disposal - Org. Liqs.						disposal price = \$1.91/pound to incinerate organic liquid labpacks	
Disposal Cost (Organic Liquids)	7400.0	Lbs	\$1.91	\$14,134	\$14,134	37 LbPks @ 200 Lbs/LbPk = 7400.0 Lbs	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing
Subt - Offsite Disposal - Org. Liqs.				\$14,134	\$14,134		
(Subt: Assemblies 10.3 thru 10.5)				\$14,633	\$14,633	loading, transportation, and offsite disposal of labpacks of organic liquids	
10.6 Load Misc. Labpacks						production rate = 80 drums/hour/person; Facility experience	
Laborer	2.2	hours	\$39.00	\$86	\$0	83 LbPks @ 80 LbPks/Hr = 1.1 hours @ 2 units/crew = 2.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	1.1	hours	\$22.21	\$24	\$0	83 LbPks @ 80 LbPks/Hr = 1.1 hours @ 1 units/crew = 1.1 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	1.1	hours	\$6.26	\$7	\$0	83 LbPks @ 80 LbPks/Hr = 1.1 hours @ 1 units/crew = 1.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Misc. Labpacks				\$117	\$0	load drums for offsite disposal	
10.6a Load Misc. Labpacks						production rate = 80 drums/hour/person; Facility experience	
Laborer	2.0	hours	\$39.00	\$0	\$78	80 LbPks @ 80 LbPks/Hr = 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	1.0	hours	\$22.21	\$0	\$22	80 LbPks @ 80 LbPks/Hr = 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	1.0	hours	\$6.26	\$0	\$6	80 LbPks @ 80 LbPks/Hr = 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Misc. Labpacks				\$0	\$106	Load drums to onsite landfill	

10.0 Laboratory

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
10.7 Transport to Onsite Landfill							
						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	0.5	hours	\$32.45	\$0	\$16	80 LbPks @ 80 drums/load = 1.0 loads @ 0.5 hr/load = 0.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.5	hours	\$45.00	\$0	\$23	80 LbPks @ 80 drums/load = 1.0 loads @ 0.5 hr/load = 0.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	0.5	hours	\$6.26	\$0	\$3	80 LbPks @ 80 drums/load = 1.0 loads @ 0.5 hr/load = 0.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transport to Onsite Landfill				\$0	\$42	assumes off-site land disposal; Facility Estimate assumes on-site disposal	
10.8 Unload Labpacks Onsite							
						Not Applicable: assume off-site land disposal	
Laborer	2.0	hours	\$39.00	\$0	\$78	80 LbPks @ 80 LbPks/Hr = 1.0 hours @ 2 units/crew = 2.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	1.0	hours	\$22.21	\$0	\$22	80 LbPks @ 80 LbPks/Hr = 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	1.0	hours	\$6.26	\$0	\$6	80 LbPks @ 80 LbPks/Hr = 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Labpacks Onsite				\$0	\$106		
10.9 Offsite Disp: Misc LbPks							
						assume off-site land disposal; 80 drms/load	
Offsite Transportation	1681.9	miles	\$3.50	\$5,887	\$0	83 LbPks @ 80 LbPks/lb = 1.1 loads @ 1529 miles/trip = 1681.9 miles	Rate: transporters quote/site experience
Offsite Disposal - Landfill	83.0	LabPk	\$341.00	\$28,303	\$0	83 LbPks @ 200 lbs/LbPks = 16600 lbs	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing
Subt - Offsite Disp. Misc. Labpacks				\$34,190	\$0	offsite disposal of all labpacks (PCB waste incineration)	
10.9a Offsite Disp: Misc LbPks							
						assume off-site land disposal; 80 drms/load	
Offsite Transportation	152.9	miles	\$3.50	\$0	\$535	3 LbPks @ 80 LbPks/lb = 0.1 loads @ 1529 miles/trip = 152.9 miles	Rate: transporters quote/site experience
Offsite Disposal - Landfill	3.0	LabPk	\$341.00	\$0	\$1,023	3 LbPks @ 200 lbs/LbPks = 600 lbs	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing
Subt - Offsite Disp. Misc. Labpacks (Subt: Assemb 10.6 thru 10.9(a))				\$0	\$1,558	offsite disposal of 3 labpacks (PCB waste incineration)	
				\$34,307	\$1,813	loading, transportation, offsite disposal of labpacks	
10.10 Decon Laboratory (Wash)							
						production rate = 105 SF/hr/person	
Laborer	9.5	hours	\$39.00	\$371	\$371	1000 SF @ 105 SF/hr = 9.5 hours @ 1 units/crew = 9.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	9.5	hours	\$4.04	\$38	\$38	1000 SF @ 105 SF/hr = 9.5 hours @ 1 units/crew = 9.5 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	9.5	hours	\$0.84	\$8	\$8	1000 SF @ 105 SF/hr = 9.5 hours @ 1 units/crew = 9.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon Lab (wash)				\$417	\$417		
10.11 Decon Laboratory (Rinse)							
						production rate = 105 SF/hr/person	
Laborer	9.5	hours	\$39.00	\$371	\$371	1000 SF @ 105 SF/hr = 9.5 hours @ 1 units/crew = 9.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Pressure Washer	9.5	hours	\$4.04	\$38	\$38	1000 SF @ 105 SF/hr = 9.5 hours @ 1 units/crew = 9.5 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	9.5	hours	\$0.84	\$8	\$8	1000 SF @ 105 SF/hr = 9.5 hours @ 1 units/crew = 9.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Decon Lab (rinse)				\$417	\$417		
10.12 Decon Water Samp/Dispose							
						production rate 0.5 hours/sample for two techs; facility treatment price \$0.0273/gal	
Technician	2.2	hours	\$38.00	\$84	\$84	2.2 samp @ 0.5 hr/samp = 1.1 hours @ 2 units/crew = 2.2 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	2.2	samp	\$105.00	\$231	\$231	2.0 areas @ 1.1 samp/area = 2.2 samples	analytical price: average of three quotes
On-site Water Disposal	1000.0	gal	\$0.0313	\$31	\$31	1000 SF @ 1.0 gal/sf/wa = 1000.0 gallons	facility o/s mild waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				\$346	\$346		

10.0 Laboratory

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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10.13 PCB Wipe & Destruct Samp						No TCLP analyses necessary according to site-wide closure plan	
Technician	12.0	hours	\$38.00	\$456	\$456	12.0 samp @ 0.5 hr/samp = 6.0 hours @ 2 units/crew = 12.0 hours	technician rate: rate 2011 3rd party quote
TCLP VOC & Metals Analysis	0.0	samp	\$446.67	\$0	\$0		analytical price: average of three quotes
PCB Analysis (SW 8080)	12.0	samp	\$83.33	\$1,000	\$1,000	7500 SF @ 625 SF/samp = 12.0 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp (Subt: Assemb 10.10 thru 10.13)				\$1,456	\$1,456		
				\$2,636	\$2,636	building decontamination and sampling	

Total Non-Super hours 130.9

10.14 PPE Usage & H&S Planning						Level C @ 75%; Mod Level C @ 25% for total non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Mod Level C	4.1	days	\$9.00	\$37	\$37	130.9 hours @ 8 hr/day = 16.4 days @ 25% "Mod C" days = 4.1 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	12.3	days	\$25.00	\$308	\$308	130.9 hours @ 8 hr/day = 16.4 days @ 75% "C" days = 12.3 days	75% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	3.3	hours	\$75.00	\$248	\$248	130.9 hours @ 0.025 hr/hr = 3.3 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$592	\$592		
10.15 Supervision						0.4 weeks for closure of South Trailer Parking closure	
Foreman	16.0	hours	\$65.00	\$1,040	\$1,040	0.4 weeks @ 40 hrs/wk = 16.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0.0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$1,040	\$1,040		
10.16 Certification						Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	2.0	hours	\$130.00	\$260	\$260	130.9 hours @ 0.015 hr/hr = 2.0 hours	Engineer rate: 2011 3rd party quote
Clerical	2.0	hours	\$45.00	\$90	\$90	130.9 hours @ 0.015 hr/hr = 2.0 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification (Subt: Assemb 10.14 thru 10.16)				\$350	\$350		
				\$1,982	\$1,982	supervision, health & safety, and certification	

10.0 Laboratory - Basic	Direct Cost	Total	Basic	\$71,849	\$39,356
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10.0 Laboratory			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost OffSite Disposal	Cost Range
Direct Costs/Basic Disposal		\$71,849	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$5,029	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$2,874	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$4,311	note: DEC uses 6%
Engineering During Construction	2.00%	\$1,437	note: DEC uses 2%
General Contractor Profit	6.00%	\$4,311	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$17,962	
Subtotal - Laboratory - Basic		\$89,812	
Plus Contingency	10.00%	\$8,981	CWM and DEC 10%
Total - Laboratory - Basic		\$98,793	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

11.0 Roadways

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
11.1 Sweep Roadways						production rate = 15,000 SF/hour (250 SF/min); assume 4 miles of roadway 20-feet wide	
Laborer	7.0	hours	\$39.00	\$273	\$273	105600 SF @ 15000 SF/hour = 7.0 hours @ 1 units/crew = 7.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	7.0	hours	\$45.00	\$315	\$315	105600 SF @ 15000 SF/hour = 7.0 hours @ 1 units/crew = 7.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Road Sweeper (90 Hp)	7.0	hours	\$32.25	\$226	\$226	105600 SF @ 15000 SF/hour = 7.0 hours @ 1 units/crew = 7.0 hours	RSM/HC p. 473 (line item 01 54 33 50 3400)
Subt - Hazcat Lab Containers				\$814	\$814		
11.2 Load Roadway Sweepings						production rate = 50 CY/hour; @ one-inch (1") depth of road debris = 325 CY over 105,600 SF	
Laborer	6.5	hours	\$39.00	\$254	\$254	325 CY @ 50 CY/hr 6.5 hours @ 1 units/crew = 6.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	6.5	hours	\$45.00	\$293	\$293	325 CY @ 50 CY/hr 6.5 hours @ 1 units/crew = 6.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader (Small)	6.5	hours	\$14.39	\$94	\$94	325 CY @ 50 CY/hr 6.5 hours @ 1 units/crew = 6.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Dump Truck (12 Ton)	6.5	hours	\$24.78	\$161	\$161	325 CY @ 50 CY/hr 6.5 hours @ 1 units/crew = 6.5 hours	RSM/HC p. 469 (line item 01 54 33 20 5250)
Subt - Load Roadway Sweepings				\$801	\$801		
11.3 Transp/Unload: Onsite Landfill						production rate = 0.5 hours for onsite travel	
Driver	6.8	hours	\$45.00	\$0	\$306	162.5 tons @ 12 tons/load = 13.5 loads @ 0.5 hours/trip = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dump Truck (12 Ton)	6.8	hours	\$24.78	\$0	\$169	325 CY @ 0.5 tons/CY = 162.5 tons	RSM/HC p. 469 (line item 01 54 33 20 5250)
Subt - Transport to Onsite Landfill				\$0	\$475	onsite disposal road debris	
11.4 Unload Roadway Sweepings						Not Required: included in 11.3	
Laborer	0.0	hours	\$39.00	\$0	\$0		loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	\$45.00	\$0	\$0		loaded labor rate: loaded labor rate 2011 3rd party quote
Loader (Small)	0.0	hours	\$14.39	\$0	\$0		RSM/HC p. 468 (line item 01 54 33 20 4610)
Dump Trailer (20 CY)	0.0	hours	\$5.20	\$0	\$0		RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Unload Sweepings Onsite				\$0	\$0		
11.5 Offsite Disp: Sweepings						assume off-site land disposal; 20 tons/load	
Offsite Transportation	3118.5	miles	\$3.25	\$10,135	\$0	162.5 tons @ 20 tons/load = 8.1 loads @ 385 miles/trip = 3118.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Landfill	162.5	tons	\$90.00	\$14,625	\$0	325 CY @ 0.5 tons/CY = 162.5 tons	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite Disp. Sweepings				\$24,760	\$0		
(Subt: Assemb 11.1 thru 11.5(a))				\$26,374	\$2,089	sweeping roadways, loading, transportation and off-site disposal of sweepings	
11.6 PPE Usage & H&S Planning						Level C @ 0%; Level Mod C @ 25%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	3.2	days	\$0.00	\$0	\$0	33.8 hours @ 8 hr/day = 4.2 days @ 75% "D" days = 3.2 days	Standard Work Clothes - Site Experience
PPE Usage - Mod Level C	1.0	days	\$9.00	\$9	\$9	33.8 hours @ 8 hr/day = 4.2 days @ 25% "Mod C" days = 1.0 days	25% of non-supv hrs in Mod Level C (price: \$9/day)
PPE Usage - Level C	0.0	days	\$25.00	\$0	\$0	33.8 hours @ 8 hr/day = 4.2 days @ 0% "C" days = 0 days	0% of non-supv hrs in Level C (price: \$25/day)
Safety Engineer	0.8	hours	\$75.00	\$60	\$60	33.8 hours @ 0.025 hr/hr = 0.8 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$69	\$69		

11.0 Roadways

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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11.7 Supervision						0.2 weeks supervisory time for Roadways	
Foreman	8.0	hours	\$65.00	\$520	\$520	0.2 weeks @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project Manager	0.0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				\$520	\$520		
11.8 Certification						Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.5	hours	\$130.00	\$65	\$65	33.8 hours @ 0.015 hr/hr = 0.5 hours	Engineer rate: 2011 3rd party quote
Clerical	0.5	hours	\$45.00	\$23	\$23	33.8 hours @ 0.015 hr/hr = 0.5 hours	Clerical rate: 2011 3rd party quote
Subtotal - Certification				\$88	\$88		
<i>(Subt: Assemblies 11.6 thru 11.8)</i>				\$677	\$677	<i>supervision, health & safety, and certification</i>	

11.0 Roadways - Basic	Direct Cost	Total	Basic	\$27,051	\$2,765
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11.0 Roadways			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost OffSite Disposal	Cost Range
Direct Costs/Basic Disposal		\$27,051	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$1,894	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$1,082	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$1,623	note: DEC uses 6%
Engineering During Construction	2.00%	\$541	note: DEC uses 2%
General Contractor Profit	6.00%	\$1,623	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$6,763	
Subtotal - Roadways		\$33,814	
Plus Contingency	10.00%	\$3,381	CWM and DEC 10%
Total - Roadways		\$37,195	

Cost References:

"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

12.0 Site Monitoring

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
12.1 Outfalls 002, 003, 004 SPDES Monitoring					production rate = 2 hours per sample for a one-person crew: one (1) year of monitoring during closure	
<i>Weekly Sampling Events</i>					1 years = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples	sampling & analysis according to SPDES Permit
Technician	312	hours	\$38.00	\$11,856	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew = 312.0 hours	technician rate: rate 2011 3rd party quote
Pickup Truck	312	hours	\$10.45	\$3,260	312.0 hours	RSM/HC p. 472 (line item 01 54 33 40 7100)
Sampling Equipment	312	hours	\$5.00	\$1,560	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew = 312.0 hours	samplers, meters, etc.
Sampling Supplies	156	samp	\$5.00	\$780	156 samples	bottles, shipping supplies
pH	156	samp	\$10.67	\$1,664	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples	weekly: Average of three quotes
Specific Conductance	156	samp	\$13.33	\$2,080	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples	weekly: Average of three quotes
Total Suspended Solids (TSS)	128	samp	\$13.33	\$1,707	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 128 samples	weekly: Average of three quotes
Total Dissolved Solids	128	samp	\$15.00	\$1,920	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 128 samples	weekly: Average of three quotes
Settleable Solids	608.4	samp	\$13.33	\$8,112	3 outfalls @ 3.9 samp/OF/week @ 52 weeks = 608.4 samples	daily during flow assume 3.9/week: Average of three quotes
BOD-5	36	samp	\$31.67	\$1,140	3 outfalls @ 1 samp/OF/month @ 1 year = 36 samples	monthly: Average of three quotes
Dissolved Oxygen	36	samp	\$17.50	\$630	3 outfalls @ 1 samp/OF/month @ 1 year = 36 samples	monthly: Average of three quotes
Ammonia (NH3)	36	samp	\$22.67	\$816	3 outfalls @ 1 samp/OF/month @ 1 year = 36 samples	monthly: Average of three quotes
VOCs (624)	72	samp	\$105.00	\$7,560	3 outfalls @ 2 samp/OF/month @ 1 year = 72 samples	2/month: Average of three quotes
Oil & Grease (1631)	72	samp	\$40.00	\$2,880	3 outfalls @ 2 samp/OF/month @ 1 year = 72 samples	2/month: Average of three quotes
Copper	36	samp	\$17.67	\$636	3 outfalls @ 1 samp/OF/month @ 1 year = 36 samples	monthly: Average of three quotes
Zinc	36	samp	\$17.67	\$636	3 outfalls @ 1 samp/OF/month @ 1 year = 36 samples	monthly: Average of three quotes
Phenols	36	samp	\$26.67	\$960	3 outfalls @ 1 samp/OF/month @ 1 year = 36 samples	monthly: Average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	156	samp	\$133.33	\$20,800	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples	weekly: Average of three quotes
2-Chloroethyl vinyl ether		samp	\$86.67	\$0	3 outfalls @ 2 samp/OF/month @ 1 year = 72 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Dichlorodifluoromethane	72	samp	\$75.00	\$5,400	3 outfalls @ 2 samp/OF/month @ 1 year = 72 samples	2/month: Average of three quotes
Methylene chloride		samp	\$75.00	\$0	3 outfalls @ 2 samp/OF/month @ 1 year = 72 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Shipping	156	samp	\$5.00	\$780		
Subt - SPDES Outfall Sampling & Analysis				\$75,177	three outfalls requiring weekly sampling & analysis for 1.0 year during closure	
12.2 Discharge Monitoring Report					Monthly Discharge Monitoring Reports	
Engineer (Report)	24	hours	\$130.00	\$3,120	1 years = 2 hrs/event = 24.0 hours @ 1 units/crew = 24.0 hours	Engineer rate: 2011 3rd party quote
Clerical	48	hours	\$45.00	\$2,160	1 years = 4 hrs/event = 48.0 hours @ 1 units/crew = 48.0 hours	Clerical rate: 2011 3rd party quote
Subt - Discharge Monitoring Report				\$5,280	submission of SPDES Permit required Discharge Monitoring Report (DMR)	
12.3 RCRA Inspections (daily)					Technician 8 hrs/day 5 days per week on weekdays and 4 hrs/day 2 days per week on weekends	
Technician	2496	hours	\$38.00	\$94,848	1 years = 52 weeks @ 48 hrs/week = 2496 hours	
Pickup Truck	2496	hours	\$10.45	\$26,083	2496 hours	
Subt - RCRA Inspections				\$120,931	Daily RCRA Inspections of facility	
(Subt: Assemblies 12.1 thru 12.3)				\$201,388		

12.0 Site Monitoring			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$201,388	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$14,097	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$8,056	note: DEC uses 4%
Pre-Construction Design Costs	0.00%	\$0	No design necessary
Engineering During Construction	0.00%	\$0	No engineering necessary
General Contractor Profit	6.00%	\$12,083	Note DEC adds 6%
Indirect Costs/Basic Disposal	17.00%	\$34,236	
Subtotal - Site Monitoring		\$235,624	
Plus Contingency	10.00%	\$23,562	
Total - Site Monitoring		\$259,187	

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)

"RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)

"RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

13.0 Third Party Leachate Treatment Cost

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basic of Production and Quantities for In-house Estimate	In-house Pricing References
13.1 AWTS Operation					Shift operation of the AWTS for 1 year	
Material handler/basic labor	1920.0	hours	\$39.00	\$74,880	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew = 1920.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Maintenance/basic labor	3840.0	hours	\$39.00	\$149,760	240 days @ 8 hours/day = 1920.0 hours @ 2 units/crew = 3840.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Operator/technician	5840.0	hours	\$38.00	\$221,920	365 days @ 8 hours/day = 2920 hours @ 2 units/crew = 5840.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Laboratory/technician	1920.0	hours	\$38.00	\$72,960	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew = 1920.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
AWT Foreman/Supervisor	2920.0	hours	\$65.00	\$189,800	365 days @ 8 hours/day = 2920 hours @ 1 units/crew = 2920.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - AWTS Operation				\$709,320	AWTS Operation	
13.2 Batch Tank Qualification					2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
PCB	24	samp	\$133.33	\$3,200	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples	monthly: Average of three quotes
Semi-Volatiles	24	samp	\$208.33	\$5,000	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples	monthly: Average of three quotes
Total Mercury	24	samp	\$25.00	\$600	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples	monthly: Average of three quotes
BOD-5	24	samp	\$31.67	\$760	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples	monthly: Average of three quotes
Subt - Batch Tank Qualification (Subt: Assemb 13.1 thru 13.2)				\$9,560	operation of AWTS for one (1) year during closure of the site	Samples collected by lab technician
				\$718,880		

13.0 AWTS Operation - Basic	Direct Cost	Total	Basic	\$718,880
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Note:
 Labor only. Material costs included in leachate treatment unit costs included in the applicable assemblies.

13.0 AWTS Operation			
Total Cost Summary			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Disposal		\$718,880	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	\$50,322	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$28,755	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$43,133	note: DEC uses 6%
Engineering During Construction	2.00%	\$14,378	note: DEC uses 2%
General Contractor Profit	6.00%	\$43,133	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	\$179,720	
Subtotal - AWTS Operation		\$898,600	
Plus Contingency	10.00%	\$89,860	CWM and DEC 10%
Total - AWTS Operation		\$988,460	

14.0 RMU-1 Landfill Closure (7.5 acres)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
Waste Cover Area Parameters	39.6 acres = 1724976 SF = 191664 SY					
Certified Final Cover Area (as of 2013)	32.47 acres = 1,414,393 SF = 157,155 SY					
Slope Correction (5%)	7.13 + 5% = 7.5 acres					
Active Waste Area	7.5 acres = 326,700 SF = 36,300 SY				= 12,100 BCY @ 1' deep = 6,050 BCY @ 0.5' deep = 18,150 BCY @ 1.5' deep	
Perimeter Ditch	0 linear feet					
Drainage Tile System	1,775 linear feet					
14.1 Final Waste Cover Grading					production rate = 250 cy/hr - based upon max of 12 inch depth	
Volume of Material to be Graded					12,100 BCY plus 25% comp fact = 15,125 LCY x 0% offsite mat'l = 0 LCY	no add'l mat'l; levelling/grading of existing waste pile only
Waste Grading	7.5	acre	\$5,000.00	\$37,500	7.5 acres	Contractor Rates/Site experience
Subt - Grading Final Waste Cover				\$37,500	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
14.1a Equipment Decontamination					production rate = 4 hours per unit with 2 man crew: 6 pieces of equipment	
Laborer	48	hours	\$39.00	\$1,872	6 units @ 4 hrs/unit = 24 hours @ 2 pers/crew = 48 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Cleaning Solvent	6	gal	\$4.00	\$24	6 units @ 1 gal/unit = 6 gallons	site experience
Pressure Washer	24	hours	\$4.04	\$97	6 units @ 4 hrs/unit = 24 hours @ 1 units/crew = 24 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
PCB Solids/Debris Transport	4.8	mile	\$3.50	\$17	1 drum Solids/debris @ 80 drums/load = 0.0125 loads @ 385 miles/load = 4.8 miles	Rate: transporters quote/site experience
PCB Solids/Debris Disposal	1	drum	\$100.00	\$100	1 drum Solids/debris	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing
Subt - Equipment Decontamination				\$2,110		
14.1b Decon Water Samp/Dispose					production rate = 0.5 hours/sample for two techs; facility treatment unit price = \$0.0273/gallon	
Technician	1	hours	\$38.00	\$38	1.0 samp @ 0.5 hr/samp = 0.5 hours @ 2 pers/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
VOC Analysis (EPA 624)	1	samp	\$105.00	\$105	1.0 areas @ 1.0 samp/area = 1.0 samples	analytical price: average of three quotes
On-site Water Disposal	1200	gal	\$0.0313	\$38	6 units @ 200 gal/unit/wa = 1200 gallons	200 gallons per unit/site experience
Subt - Decon Water Samp/Disposal				\$181		
14.1c PCB Equipment Wipe					production rate = 0.5 hours/sample for two techs; 2 wipe samples per unit/site experience	
Technician	12	hours	\$38.00	\$456	12.0 samp @ 0.5 hr/samp = 6.0 hours @ 2 pers/crew = 12.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
PCB Analysis (SW 8081/8082)	12	samp	\$83.33	\$1,000	6 units @ 2 samp/unit = 12.0 samples	analytical price: average of three quotes
Subt - PCB Wipe				\$1,456		
14.2 Perimeter Ditch Spreading					Included in 14.3	
Subt - Spreading Ditch Fill				\$0.00		
14.3 Perimeter Road/Ditch Compaction					Includes ditch excavation & road placement compaction	2010 Average of two bids
Subt - Compact Fin'l Cover/Ditch	0	LF	\$12.00	\$0	Liner feet	All perimeter roads and perimeter drainage ditches completed
14.4 Final Cover/Ditch Inspection					Included in CQA 14.26	
Subt - Inspecting Final Cover/Ditch				\$0		
(Subt: Assemblies 14.1 thru 14.4)				\$41,246	grading, compacting, & inspecting final waste pile layer; decon & testing of equipment	waste cover area

14.0 RMU-1 Landfill Closure (7.5 acres)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
14.5 Pre-Qual Clay Mat'l Testing					Clay material not used for final cover based on 2009 Redesign	
Subt - Pre-Qual Clay Mat'l Testing				\$0	Replaced with 0.5' grading layer and geosynthetic clay liner (GCL)	see assemblies 14.9a & 14.9b for grading layer and GCL
14.6 Clay Test Pad Testing					Clay material not used for final cover based on 2009 Redesign	
Subt - Clay Test Pad Testing				\$0	Replaced with 0.5' grading layer and geosynthetic clay liner (GCL)	see assemblies 14.9a & 14.9b for grading layer and GCL
14.7 Clay Layer Spreading					Clay material not used for final cover based on 2009 Redesign	
Subt - Spreading Clay Layer				\$0	Replaced with 0.5' grading layer and geosynthetic clay liner (GCL)	see assemblies 14.9a & 14.9b for grading layer and GCL
14.8 Clay Layer Compaction					Clay material not used for final cover based on 2009 Redesign	
Subt - Compacting Clay Layer				\$0	Replaced with 0.5' grading layer and geosynthetic clay liner (GCL)	see assemblies 14.9a & 14.9b for grading layer and GCL
14.9 Clay Layer Testing					Clay material not used for final cover based on 2009 Redesign	
Subt - Clay Layer Testing				\$0	Replaced with 0.5' grading layer and geosynthetic clay liner (GCL)	see assemblies 14.9a & 14.9b for grading layer and GCL
14.9a Grading Layer					Based on 2009 Redesign & 7.5 acres remaining to be closed	
General Fill	7562.5	CY	\$11.00	\$83,188	6,050 BCY plus 25% comp fact = 7,562 LCY x 100% offsite mat'l = 7,562 LCY	
General Fill Place/Compact	7562.5	CY	\$10.00	\$75,625	6,050 BCY plus 25% comp fact = 7,562 LCY x 100% offsite mat'l = 7,562 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Grading Layer Surface Prep	7.5	acre	\$10,000.00	\$75,000	7.5 acres	
Subt - Grading Layer				\$233,813		
14.9b Geosynthetic Clay Liner					Based on 2009 Redesign & 7.5 acres remaining to be closed	
GCL Material	408375	SF	\$0.46	\$187,853	326700 SF plus 25% lap factor = 408375SF	2011 Actual Cost per SQFT including shipping & tax
GCL Installation	408375	SF	\$0.35	\$142,931	326700 SF plus 25% lap factor = 408375SF	2010 Quoted price from CETCO
Subt - GCL				\$330,784		
(Subt: Assemblies 14.5 thru 14.9b)				\$564,596	spread and compact grading layer (0.5' offsite material) and install of impervious GCL	cap cover area
14.10 40-Mil Liner					production rate = 250 SF/Hr,	
40-Mil Polymeric Liner	408375	SF	\$0.21	\$85,759	326700 SF plus 25% lap factor = 408375SF	2010 Actual Cost per SQFT including tax & shipping
40-Mil Polymeric Liner Installation	408375	SF	\$0.46	\$187,853	326700 SF plus 25% lap factor = 408375SF	2010 Quoted price from CETCO
Subt - 40-Mil Liner				\$273,611		
14.11 Liner Anchor Trench						
Anchor Trench	0	acres	\$1,000.00	\$0	7.5 acres remaining	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Anchor Trench				\$0	includes labor & equipment for trenching, backfilling, and compacting (3' x 1.5')	All perimeter anchor trench complete through 2013
14.12 Geocomposite Drainage Layer					production rate = 5,000 SF/Hr, RSM/UP p. 9-83 (33-08-0513)	
Geocomposite Drainage Layer	408375	SF	\$0.38	\$155,183	326700 SF plus 25% lap factor = 408375SF	2011 Actual Blended cost (TN240 & TN350) including shipping & handling
Geocomposite Drainage Layer Install	408375	SF	\$0.32	\$130,680	326700 SF plus 25% lap factor = 408375SF	2010 Quoted price from CETCO
Subt - Geocomposite Layer				\$285,863		

14.0 RMU-1 Landfill Closure (7.5 acres)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
14.13 Geosynthetic Liner Testing					QC testing included in Assem 14.10; see assembly 14.26 for QA Monitoring	
Subt - Liner Testing			\$0	\$0	field testing crew required to work concurrently with liner placement crew in Assem 14.10	
(Subt: Assemb 14.10 thru 14.13)				\$559,474	installing geosynthetics above impervious gcl layer	liner area: cap cover plus 25% lap factor
14.14 Unclassified Fill					depth = 1.5 feet (in one 18" lift) for final cover based on 2009 Redesign	
General Fill - offsite source	22688	LCY	\$11	\$249,568	18,150 BCY plus 25% comp fact = 22,688 LCY x 100% offsite mat'l : 22,688 LCY	Actual Quoted Cost 2011 (Tri-C, Inc.)
Subt - Spreading Unclassified Fill				\$249,568	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
14.15 Compacting Unclassified Fill					Compaction of one 1.5 feet lift	
Place/Spread/Compact Unclass. Fill	22688	LCY	\$10	\$226,880	18,150 BCY plus 25% comp fact = 22,688 LCY x 100% offsite mat'l : 22,688 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Compacting Unclass. Fill				\$226,880		
14.16 Unclassified Fill Testing						
Subt - Unclassified Fill Testing				\$0	Included in Assemb 14.26 QA/QC Monitoring	
14.16a Unclassified Fill Test Fill						
Test Fill Construction	1	each	\$12,000	\$12,000	1 test fill/source @ 1 source/7.5 acres = 1 test fill	Actual Cost 2011 (Tri-C, Inc.)
Test Fill QA Testing/Reporting	1	each	\$8,000	\$8,000		Actual Cost 2011 (Ensol, Inc.)
Subt - Unclassified Fill Test Fill				\$20,000		
(Subt: Assemb 14.14 thru 14.16a)				\$496,448	spreading and compacting unclassified fill layer; 1.5-feet in depth using 100% offsite material	cap cover area
14.17 Spreading Topsoil					depth = 0.5 feet	
Topsoil	7562.5	LCY	\$15.00	\$113,438	6,050 BCY plus 25% comp fact = 7,562.5 LCY x 100% offsite mat'l : 7,562.5 LCY	Actual Cost 2011 (Tri-C, Inc.)
Spreading Topsoil	7562.5	LCY	\$11.00	\$83,188	6,050 BCY plus 25% comp fact = 7,562.5 LCY x 100% offsite mat'l : 7,562.5 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Spreading Topsoil				\$196,625	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	Includes hydroseeding/mulch/fertilizer
14.18 Cap Vegetation						see assembly 14.17 for facility vegetation estimate
Hydro Seeding w/Mulch & Fertilizer	0	MSF	0	\$0	Included in Assemb 14.17	
Erosion Control Matting	1972	SY	\$12.50	\$24,650	1775 lf @ 10 ft wide 17,750 sf = 1,972 SY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt -Cap Vegetation				\$24,650		
(Subt: Assemb 14.17 thru 14.18)				\$221,275	placing topsoil and hydro seeding with mulch and fertilizer	cap cover area
14.19 Downflume Installation						
Rip Rap Downflume (grouted)	0	each	\$23,625.00	\$0	7.5 acres @ 0 downflume = 0 downflume	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Install Downflume				\$0	All final cover downflumes have been completed	
14.20 Cap Drainage Syst Install'n					production rate = 47.5 LF/hr, RSM/SWL p. 77 (02510-850-0200)	
Install Cap Drainage System	1775	LF	\$15.06	\$26,732	7.5 acres 1775 LF	Actual Cost 2011 (Tri-C, Inc.)
Subt - Install Cap Drainage System				\$26,732		Average of two bids (3rd bid disqualified due to non-conformity)
(Subt: Assemb 14.19 thru 14.20)				\$26,732	downflume and drainage system installation	cap cover area

14.0 RMU-1 Landfill Closure (7.5 acres)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
14.21 Groundwater Monitoring					production rate = 0.5 hours per sample for two techs; 51 wells; 3 QA/QC; 1 event/6 months	
Technician	54	hours	\$38.00	\$2,052	54 samp @ 0.5 hrs/samp = 22 hours @ 2 units/crew = 54.0 hours	
Sampling Supplies	54	samp	\$25.00	\$1,350	54 samples	bottles, shipping supplies
VOC Analysis (EPA 624)	51	samp	\$105.00	\$5,355		
VOC Analysis (EPA 624) QA/QC	3	samp	\$105.00	\$315	3 sampl/event	
Subt - GW Mon During Closure (Subt: Assembly 14.21)				\$9,072	groundwater monitoring for six (6) months	

14.22 Leachate Management					leachate collected from surface and sub-surface projected to be mildly contaminated	
Onsite Aqueous Treatment	11880335	gals	\$0.0178	\$211,470	11880335 gals 12 months	leachate quantity based avg 2002 -2013 actuals over 12 months closure
Electricity for 40-gpm Pumps	12264	kwh	\$0.10	\$1,226	2 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 7.0 pumps = 12,264 kwhs	40 gpm pump = 2 hp; 1.0 hph = .75 kwh
Electricity for 100-gpm Pumps	13140	kwh	\$0.10	\$1,314	5 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 3.0 pumps = 13,140 kwhs	100 gpm pump = 5 hp; 1.0 hph = .75 kwh
Electricity for 600-gpm Pump	26280	kwh	\$0.10	\$2,628	30 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 1.0 pump = 26,280 kwhs	600 gpm pump = 30 hp; 1.0 hph = .75 kwh
200 GPM Transfer Pump	1	each	\$6,194.00	\$6,194	1.0 pump =	2004 DEC Rate * Implicit Deflator
Fuel for 200-gpm Transfer Pump	1800	gals	\$4.50	\$8,100	2 gal/hr x 900 hrs/year x 1.0 pump = 1800 gals	fuel for transfer pump
Pump/Motor Replace/Maint/Repair	3	each	\$2,294.00	\$6,882	12 pumps x 25% factor = 3.0 events	2004 DEC Rate * Implicit Deflator
Subt - Leachate Management				\$237,814	leachate collection and management for twelve months	
14.23 Leachate Monitoring					12 months of leachate monitoring	
Technician	56	hours	\$38.00	\$2,128	56.0 samp @ 0.5 hrs/samp = 28.0 hours @ 2 units/crew = 56.0 hours	
Sampling Supplies	56	samp	\$5.00	\$280	56.0 samples Included in unit rate	bottles, shipping supplies
Primary Leachate: PP VOCs (epa 624)	58.8	samp	\$105.00	\$6,174	4 samp/yr x 14 cells x 1.0 years 1.05 QA req't = 58.8 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PCBs (sw 8081)	29.4	samp	\$131.67	\$3,871	2 samp/yr x 14 cells x 1.0 years 1.05 QA req't = 29.4 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PP Metals (sw 6010)	29.4	samp	\$155.00	\$4,557	2 samp/yr x 14 cells x 1.0 years 1.05 QA req't = 29.4 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: VOCs (epa 624)	58.8	samp	\$105.00	\$6,174	4 samp/yr x 14 cells x 1.0 years 1.05 QA req't = 58.8 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Organics	14.7	samp	\$633.33	\$9,310	1 samp/yr x 14 cells x 1.0 years 1.05 QA req't = 14.7 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Metals (sw 6010)	14.7	samp	\$155.00	\$2,279	1 samp/yr x 14 cells x 1.0 years 1.05 QA req't = 14.7 samples	analytical price: average of three quotes - permit specifications
Shipping	58.8	each	\$5.00	\$294		
Subt - Leachate Monitoring (Subt: Assemb 14.22 thru 14.23)				\$35,067	leachate collection and management for twelve months	CWM estimate for leachate monitoring for 6 months

14.24 PPE Usage & H&S Planning					Level C during waste grading, grading layer installation, and decon only.	
PPE Usage - Level D	400	days	\$0.00	\$0	400 man days to complete closure	
PPE Usage - Mod Level C	0	days	\$9.00	\$0	0 days for Modified Level C	
PPE Usage - Level C	66	days	\$25.00	\$1,650	33 days for waste grading, grading layer installation and equip decon * 2 crew = 66 days	
Health & Safety Officer	80	hours	\$75.00	\$6,000	3200.0 hours @ 2.5% hr/hr = 80.0 hours	
Subt - PPE Usage/H&S Planning				\$7,650		
14.25 Supervision						
Foreman	0	hours	\$65.00	\$0	Foreman included in per acre unit costs	
Site Project Manager	0	hours	\$75.00	\$0	Included in Construction Management costs	
Construction Management	7.5	acre	\$4,500.00	\$33,750	\$4,500 per acre @ 7.5 acres	
Subtotal - Supervision				\$33,750		

14.0 RMU-1 Landfill Closure (7.5 acres)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
14.26 QA/QC Monitoring/Certification						
GCL Conformance Testing	5.0	test	\$235.00	\$1,175	326700 SF plus 25% lap factor = 408375 SF @ 1 test/100000 SF = 5.0 tests	Actual Costs 2011 (TRI Environmental)
40-Mil Liner Conformance Testing	5.0	test	\$98.00	\$490	326700 SF plus 25% lap factor = 408375 SF @ 1 test/100000 SF = 5.0 tests	Actual Costs 2011 (TRI Environmental)
Geocomposite Liner Conformance Testing	5.0	test	\$300.00	\$1,500	326700 SF plus 25% lap factor = 408375 SF @ 1 test/100000 SF = 5.0 tests	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (GCL/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (GCL/40-Mil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (40-Mil/Geocomposite)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Geocomposite/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
QA/QC Monitoring/Certification	7.5	acre	\$25,700.00	\$192,750	7.5 acres	Actual cost 2010/2011 (Ensol, Inc.)
Subtotal - Certification				\$216,135		
(Subt: Assemb 14.24 thru 14.26)				\$257,535	supervision, health & safety, and certification	
14.0 RMU-1 Landfill Closure				\$2,449,259	CWM estimate based on 7.5 acres	

The Total Labor and Maintenance Costs per year to run the AWT Facility was calculated under the Site Wide Post Closure Plan and will remain constant regardless of whether or not RMU-1 is generating leachate; the labor, maintenance and number of days per year to run the facility will be the same. Therefore, no costs are associated with labor and maintenance.

14.0 RMU-1 Landfill Closure (7.5 acres)			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Closure		\$2,449,259	
Site Activity Management Costs	7.00%	\$171,448	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$97,970	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$146,956	note: DEC uses 6%
Engineering During Construction	2.00%	\$48,985	note: DEC uses 2%
General Contractor Profit	6.00%	\$146,956	Note DEC adds 6%
Indirect Costs/Basic Closure	25.00%	\$612,315	
Subtotal - RMU-1 Landfill Closure		\$3,061,573	
Plus Contingency	10.00%	\$306,157	CWM and DEC 10%
Total - RMU-1 Landfill Closure		\$3,367,731	

Cost Per Acre \$437,367.62 CWM estimate based on 7.5 acres

Cost References:

- "RSM/HC" refers to the RSM Means "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
- "RSM/UP" refers to the RSM Means "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
- "RSM/BC" refers to the RSM Means "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

Waste Area of RMU-1 (14 cells) :

Cell #	Acres
1	2.5
2	2.0
3	2.4
4	1.9
5	3.2
6	3.1
7	3.4
8	3.6
9	3.0
10	2.7
11	2.5
12	2.2
13	3.0
14	4.1

Assumptions:

- Deduct 32.3 acres of completed and certified capped area (Phases I through VIII) from total 14 cell area of RMU-1.
- Use RMU-1 Cover system design components from CWM RMU-1 Closure Plan:

- 0.5 Grading Layer (Unclassified/General Fill)
- Geosynthetic Clay Liner
- 40 mil roughened HDPE geomembrane
- Geocomposite drainage layer
- Eighteen inches (1.5 feet) of unclassified/general fill
- Six inches (0.5 feet) topsoil and vegetative cover

Total Area 39.6 acres

Therefore: 39.6 acres
 - 32.47 capped
 7.13 acres remaining to be capped
 7.5 +5%

(Add 5% to area to cover to account for 3:1 side slopes)

**Unit Rates RMU-1
 Closure Cost Estimate
 CWM Chemical Services, LLC, Model City, New York**

2011 Unit Rates are based on actual costs for contractor capping 10.0 acres of RMU-1 during Phase VII Final Cover construction.

Basis:

UNIT RATES (THIRD PARTY COSTS)

RMU-1 CLOSURE	2011		Basis of Production and Quantities for In-House Estimate
	UOM	Price	
WASTE GRADING			
Final waste grading & surface preparation:	acre	\$ 5,000	Actual 2010 costs/site experience using site personnel
GRADING LAYER			
Load, haul, place, grade, grading layer:	CY	\$ 10.00	Actual Quoted Cost 2011 (Tri-C, Inc.) for placement of grading layer (\$10/CY)
Purchase/delivery of general fill from off-site source =	CY	\$ 11.00	Actual Quoted Cost 2011 (Tri-C, Inc.) for providing of grading layer (\$11/CY)
Grading layer surface preparation:	acre	\$ 10,000.00	Actual cost incurred for 2010 activities
EARTHWORKS CONTRACTOR MOB/DEMOB	acre	\$ 37,750.00	Average of two bids (third bid disqualified due to non-conformity)
GEOSYNTHETICS			
Geosynthetic Clay Liner (GCL)			
Material Cost	SQFT	\$ 0.46	2011 Actual Cost per SQFT including shipping & tax
Installation Cost	SQFT	\$ 0.35	2010 Average of two bids
Subtotal	SQFT	\$ 0.81	
GEOSYNTHETICS CONTRACTOR MOB/DEMOB	acre	\$ 13,750.00	2010 Average of two bids
40 mil Roughened HDPE geomembrane (textured 2 sided)			
Material Cost	SQFT	\$ 0.21	2010 Actual Cost per SQFT including tax & shipping
Installation Cost	SQFT	\$ 0.46	2010 Average of two bids
Subtotal	SQFT	\$ 0.67	
Geosynthetic Installation at Standpipe Riser	each	\$ 1,000.00	Average of two bids (third bid disqualified due to non-conformity)
Geosynthetic Installation at Riser Vault	each	\$ 1,000.00	Average of two bids (third bid disqualified due to non-conformity)
Geocomposite			
Material Cost	SQFT	\$ 0.38	2011 Actual Blended cost (TN240 & TN350) including shipping & handling
Installation Cost (w/Sewing)	SQFT	\$ 0.32	2010 Average of two bids
Subtotal	SQFT	\$ 0.70	
Subtotal Geosynthetics:	SQFT	\$ 2.18	GCL + Membrane + Geocomposite
ANCHOR TRENCHES			
Permanent	acre	\$ 1,100	Quoted price from Tri-C
Temporary	acre	\$ 4,500	Quoted price from Tri-C
Subtotal	acre	\$ 5,600	

**Unit Rates RMU-1
 Closure Cost Estimate
 CWM Chemical Services, LLC, Model City, New York**

2011 Unit Rates are based on actual costs for contractor capping 10.0 acres of RMU-1 during Phase VII Final Cover construction.

Basis:

UNIT RATES (THIRD PARTY COSTS)

RMU-1 CLOSURE		2011	Basis of Production and Quantities for In-House Estimate
GEOTEXTILE MATERIAL			
	acre	\$ 1,220	Quoted price from Tri-C
PERIMETER DITCHES AND ROADWAYS			
Perimeter Ditches and Roadways	LF	\$ 12	2010 Average of two bids
UNCLASSIFIED FILL			
Load, haul, place, grade and compact general fill:	CY	\$ 10.00	Actual Quoted Cost 2011 (Tri-C, Inc.) for placement of general fill (\$10/CY)
Purchase/delivery of general fill from off-site source =	CY	\$ 11.00	Actual Quoted Cost 2011 (Tri-C, Inc.) for providing of general fill (\$11/CY)
Test Fill Pad Construction	each	\$ 12,000.00	Actual 2010 costs/site experience
Test Fill Pad QA/QC & Reporting	each	\$ 8,000.00	Actual 2010 costs/site experience
TOPSOIL/VEGETATION			
Load, place, grade, topsoil:seed, fertilize and mulch =	CY	\$ 11.00	2011 Quoted price from Tri-C
Purchase/delivery of topsoil from off-site source =	CY	\$ 15.00	Quoted price from Tri-C
Purchase and Installation of erosion control matting =	SY	\$ 12.50	Average of two bids (third bid disqualified due to non-conformity)
Subtotal Topsoil/Vegetation	CY	\$ 38.50	
DRAINAGE			
Provide, install final cover drainage tile system	LF	\$ 15.06	Average of two bids (third bid disqualified due to non-conformity)
Provide, install final cover surface water downflume	each	\$ 23,625	6,300 SQFT x \$3.75/SQFT = \$23,625
CQA, SURVEYING AND CQA REPORT	acre	\$ 21,689	2010 Average of two bids
CONSTRUCTION CONTRACTOR MOB/DEMOB/ADMIN/SURVEY =	%	5	
DESIGN SUPPORT			
Pre-Construction Design Costs		\$ 25,000	\$25,000 for 22.8 acres
Engineering During Construction		\$ 25,000	\$25,000 for 22.8 acres
CONSTRUCTION MANAGEMENT	acre	\$ 4,500	Quoted price Ensol, Inc

GEOSYNTHETICS CONFORMANCE TESTING			
40-Mil Geomembrane (1/100,000)	sample	\$ 98	Actual Costs 2011 (TRI Environmental)
Geocomposite (1/100,000)	sample	\$ 300	Actual Costs 2011 (TRI Environmental)
GCL (1/100,000)	sample	\$ 235	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (GCL/Soil)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (GCL/40-Mil)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)

**Unit Rates RMU-1
 Closure Cost Estimate
 CWM Chemical Services, LLC, Model City, New York**

2011 Unit Rates are based on actual costs for contractor capping 10.0 acres of RMU-1 during Phase VII Final Cover construction.

Basis:

UNIT RATES (THIRD PARTY COSTS)

RMU-1 CLOSURE		2011	Basis of Production and Quantities for In-House Estimate
Interface Friction Testing (40-Mil/Geocomposite)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Geocomposite/Soil)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)

MISCELLANEOUS			
200 GPM Transfer Pump	each	\$6,194	2004 DEC Rate * Implicit Deflator
Pump/Motor Replace/Maint/Repair	each	\$2,294.00	2004 DEC Rate * Implicit Deflator

Rate Adjustment for inflation:

2011 Rate = 110.654 (2010 GDP) ÷ 96.77 (2004 GDP) = 1.14347421721608

1.147

Adjust 2004 DEC rates to 2011 rates based on implicit deflator

NOTE: Sheet to be added.

15.01 RMU-2 Landfill Closure (1-Cell)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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Waste Cover Area Parameters			38.5 acres = 1,677,060 SF = 186,340 SY	= 62,113 BCY @ 1' deep	Includes slope correction	
1-Cell Scenario (Cell 20)	6.9	6.9 acres = 300,564 SF = 33,396 SY		= 11,132 BCY @ 1' deep	= 5,566 BCY @ 0.5' deep	= 16,698 BCY @ 1.5' deep
2-Cell Scenario (Cells 18,20)	13.1	13.1 acres = 570,636 SF = 63,404 SY		= 21,135 BCY @ 1' deep	= 10,567 BCY @ 0.5' deep	= 31,702 BCY @ 1.5' deep
3-Cell Scenario (Cells 18,20,19)	19.5	19.5 acres = 849,420 SF = 94,380 SY		= 31,460 BCY @ 1' deep	= 15,730 BCY @ 0.5' deep	= 47,190 BCY @ 1.5' deep
4-Cell Scenario (Cells 18,20,19,17)	25.4	25.4 acres = 1,106,424 SF = 122,936 SY		= 40,979 BCY @ 1' deep	= 20,489 BCY @ 0.5' deep	= 61,468 BCY @ 1.5' deep
5-Cell Scenario (Cells 18,20,19,17,16)	31.9	31.9 acres = 1,389,564 SF = 154,396 SY		= 51,465 BCY @ 1' deep	= 25,733 BCY @ 0.5' deep	= 77,198 BCY @ 1.5' deep
6-Cell Scenario (Cells 18,20,19,17,16,15)	38.5	38.5 acres = 1,677,060 SF = 186,340 SY		= 62,113 BCY @ 1' deep	= 31,056 BCY @ 0.5' deep	= 93,170 CY @ 1.5' deep

Liner Feet of Separator Berm Converted to Perimeter Berm	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
1-Cell Scenario (Cell 20)	575	lf		445	Cut-Off-Wall Length	
2-Cell Scenario (Cells 18,20)	1490	lf		1300	2-Cell Scenario (Cells 18,20)	
3-Cell Scenario (Cells 18,20,19)	1030	lf		960	3-Cell Scenario (Cells 18,20,19)	
4-Cell Scenario (Cells 18,20,19,17)	575	lf		515	4-Cell Scenario (Cells 18,20,19,17)	
5-Cell Scenario (Cells 18,20,19,17,16)	600	lf		500	5-Cell Scenario (Cells 18,20,19,17,16)	
6-Cell Scenario (Cells 18,20,19,17,16,15)	N/A	lf		N/A	6-Cell Scenario (Cells 18,20,19,17,16,15)	

BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material

Separator Berm, Perimeter Berm, and Cut-Off-Wall Lengths from RMU-2 Permit Drawing No. 5
 Perimeter Ditch 2,290 linear feet 585+585+560+560 = 2,290
 Drainage Tile System 2,939 linear feet 6.9 acres * 426 LF/acre = 2,939 LF
 Material Pre-Qualification and Construction Testing Frequencies from RMU-2 Quality Assurance Manual and Technical Specifications (2013)

15.01.1 Convert Separator Berm to Perimeter Berm						
Perimeter Berm	575	lf	\$ 2,338.17	\$1,344,449	Includes 445 feet of Cut-Off-Wall and 575 feet of perimeter berm construction	Value taken from 15.01 Closure Cost, 15.A Berm tab.
Subt - Convert Separator Berm to Perimeter Berm			\$ 2,338.17	\$1,344,449		
(Subt: Assemblies 15.01.1)				\$1,344,449		

15.01.2 Final Waste Cover Grading						
Volume of Material to be Graded					production rate = 250 cy/hr - based upon max of 12 inch depth	
Waste Grading	6.9	acre	\$5,000.00	\$34,500	11132 BCY plus 25% comp fact = 13914 LCY x 0% offsite mat'l = 0 LCY	no add'l mat'l; levelling/grading of existing waste pile only
Subt - Grading Final Waste Cover				\$34,500	6.9 acres	Contractor Rates/Site experience
					BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	

15.01.3 Equipment Decontamination						
Laborer	48	hours	\$39.00	\$1,872	production rate = 4 hours per unit with 2 man crew: 6 pieces of equipment	
Cleaning Solvent	6	gal	\$4.00	\$24	6 units @ 4 hrs/unit = 24 hours @ 2 pers/crew = 48 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Pressure Washer	24	hours	\$4.04	\$97	6 units @ 1 gal/unit = 6 gallons	site experience
PCB Solids/Debris Transport	4.8	mile	\$3.50	\$17	6 units @ 4 hrs/unit = 24 hours @ 1 units/crew = 24 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
PCB Solids/Debris Disposal	1	drum	\$100.00	\$100	1 drum Solids/debris @ 80 drums/load = 0.0125 loads @ 385 miles/load = 4.8 miles	Rate: transporters quote/site experience
Subt - Equipment Decontamination				\$2,110	1 drum Solids/debris	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing

15.01.4 Decon Water Samp/Dispose						
Technician	1	hours	\$38.00	\$38	production rate = 0.5 hours/sample for two techs	
VOC Analysis (EPA 624)	1	samp	\$105.00	\$105	1.0 samp @ 0.5 hr/samp = 0.5 hours @ 2 pers/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
On-site Water Disposal	1200	gal	\$0.0313	\$38	1.0 areas @ 1.0 samp/area = 1.0 samples	analytical price: average of three quotes
Subt - Decon Water Samp/Disposal				\$181	6 units @ 200 gal/unit/wa = 1200 gallons	200 gallons per unit/site experience

NOTE: Sheet to be added.

15.01 RMU-2 Landfill Closure (1-Cell)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.01.5 PCB Equipment Wipe					production rate = 0.5 hours/sample for two techs; 2 wipe samples per unit/site experience	
Technician	12	hours	\$38.00	\$456	12.0 samp @ 0.5 hr/samp = 6.0 hours @ 2 pers/crew = 12.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
PCB Analysis (SW 8081/8082)	12	samp	\$83.33	\$1,000	6 units @ 2 samp/unit = 12.0 samples	analytical price: average of three quotes
Subt - PCB Wipe				\$1,456		
15.01.6 Perimeter Ditch Spreading					Included in 15.01.7	
Subt - Spreading Ditch Fill				\$0.00		
15.01.7 Perimeter Road/Ditch Compaction					Includes ditch excavation & road placement compaction	
Subt - Compact Fin'l Cover/Ditch	2290	LF	\$12.00	\$27,480	Liner feet	2010 Average of two bids
15.01.8 Final Cover/Ditch Inspection					Included in CQA 15.01.28	
Subt - Inspecting Final Cover/Ditch				\$0		
(Subt: Assemblies 15.01.2 thru 15.01.8)				\$65,726	<i>grading, compacting, & inspecting final waste pile layer; decon & testing of equipment</i>	<i>waste cover area</i>
15.01.9 Grading Layer					Based on 2009 Design & 6.9 acres to be closed	Grading layer 0.5 feet thick
General Fill	6958	CY	\$11.00	\$76,538	5,566 BCY plus 25% comp fact = 6,958 LCY x 100% offsite mat'l : 6,968 LCY	
General Fill Place/Compact	6958	CY	\$10.00	\$69,580	5,566 BCY plus 25% comp fact = 5,839 LCY x 100% offsite mat'l : 6,968 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Grading Layer Surface Prep	6.9	acre	\$10,000.00	\$69,000	6.9 acres	Site Experience
Subt - Grading Layer				\$215,118		
15.01.10 Cover Geosynthetic Clay Liner					Based on 2009 Design & 6.9 acres to be closed	
GCL Material	375705	SF	\$0.46	\$172,824	300,564 SF plus 25% lap factor = 375,705 SF	2011 Actual Cost per SQFT including shipping & tax
GCL Installation	375705	SF	\$0.35	\$131,497	300,564 SF plus 25% lap factor = 375,705 SF	2010 Quoted price from CETCO
Subt - GCL				\$304,321		
(Subt: Assemblies 15.01.9 thru 15.01.10)				\$519,439	<i>spread and compact grading layer (0.5' offsite material) and install of impervious GCL</i>	<i>cap cover area</i>
15.01.11 40-Mil Liner					production rate = 250 SF/Hr,	
40-Mil Polymeric Liner	375705	SF	\$0.21	\$78,898	300,564 SF plus 25% lap factor = 375,705 SF	2010 Actual Cost per SQFT including tax & shipping
40-Mil Polymeric Liner Installation	375705	SF	\$0.46	\$172,824	300,564 SF plus 25% lap factor = 375,705 SF	2010 Quoted price from CETCO
Subt - 40-Mil Liner				\$251,722		
15.01.12 Liner Anchor Trench						
Anchor Trench	6.9	acres	\$1,000.00	\$6,900	6.9 acres remaining	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Anchor Trench				\$6,900	<i>includes labor & equipment for trenching, backfilling, and compacting (3' x 1.5')</i>	
15.01.13 Geocomposite Drainage Layer					production rate = 5,000 SF/Hr, RSM/UP p. 9-83 (33-08-0513)	
Geocomposite Drainage Layer	375705	SF	\$0.38	\$142,768	300,564 SF plus 25% lap factor = 375,705 SF	2011 Actual Blended cost (TN240 & TN350) including shipping & handling
Geocomposite Drainage Layer Install	375705	SF	\$0.32	\$120,226	300,564 SF plus 25% lap factor = 375,705 SF	2010 Quoted price from CETCO
Subt - Geocomposite Layer				\$262,994		

NOTE: Sheet to be added.

15.01 RMU-2 Landfill Closure (1-Cell)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.01.14 Geosynthetic Liner Testing					QC testing included in Assem 15.01.11; see assembly 15.01.28 for QA Monitoring	
Subt - Liner Testing			\$0	\$0	field testing crew required to work concurrently with liner placement crew in Assem 15.01.11	
(Subt: Assem 15.01.11 thru 15.01.14)				\$521,616	installing geosynthetics above impervious gcl layer	liner area: cap cover plus 25% lap factor
15.01.15 Unclassified Fill					depth = 1.5 feet (in one 18" lift) for final cover	
General Fill - offsite source	20872	LCY	\$11	\$229,592	16,698 BCY plus 25% comp fact = 20,872 LCY x 100% offsite mat'l : 20,872 LCY	Actual Quoted Cost 2011 (Tri-C, Inc.)
Subt - Spreading Unclassified Fill				\$229,592	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
15.01.16 Compacting Unclassified Fill					Compaction of one 1.5 feet lift	
Place/Spread/Compact Unclass. Fill	20872	LCY	\$10	\$208,720	16,698 BCY plus 25% comp fact = 20,872 LCY x 100% offsite mat'l : 20,872 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Compacting Unclass. Fill				\$208,720		
15.01.17 Unclassified Fill Testing						
Subt - Unclassified Fill Testing				\$0	Included in Assem 15.01.28 QA/QC Monitoring	
15.01.18 Unclassified Fill Test Fill					Assume two sources of unclassified fill	
Test Fill Construction	1	each	\$12,000	\$12,000	1 test fill/source @ 1 source/6.9 acres = 1 test fills	Actual Cost 2011 (Tri-C, Inc.)
Test Fill QA Testing/Reporting	1	each	\$8,000	\$8,000		Actual Cost 2011 (Ensol, Inc.)
Subt - Unclassified Fill Test Fill				\$20,000		
(Subt: Assem 15.01.15 thru 15.01.18)				\$458,312	spreading and compacting unclassified fill layer; 1.5-feet in depth using 100% offsite material	cap cover area
15.01.19 Spreading Topsoil					depth = 0.5 feet	
Topsoil	6958	LCY	\$15.00	\$104,370	5,566 BCY plus 25% comp fact = 6,958 LCY x 100% offsite mat'l : 6,958 LCY x	Actual Cost 2011 (Tri-C, Inc.)
Spreading Topsoil	6958	LCY	\$11.00	\$76,538	5,566 BCY plus 25% comp fact = 6,958 LCY x 100% offsite mat'l : 6,958 LCY x	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Spreading Topsoil				\$180,908	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	Includes hydroseeding/mulch/fertilizer
15.01.20 Cap Vegetation						
Hydro Seeding w/Mulch & Fertilizer	0	MSF	0	\$0	Included in Assem 15.01.19	
Erosion Control Matting	1956	SY	\$12.50	\$24,450	1,760 LF x 10 ft wide rolls = 17,600 SF / 9 SF/SY = 1,956 SY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt -Cap Vegetation				\$24,450		Drainage Tile System
(Subt: Assem 15.01.19 thru 15.01.20)				\$205,358	placing topsoil and hydro seeding with mulch and fertilizer	cap cover area
15.01.21 Downflume Installation						
Rip Rap Downflume (grouted)	1	each	\$23,625.00	\$23,625	6.9 acres @ 1 downflume = 1 downflume	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Install Downflume				\$23,625		
15.01.22 Cap Drainage Syst Install'n						
Install Cap Drainage System	2939	LF	\$15.06	\$44,261	6.9 acres 2,939 LF	Actual Cost 2011 (Tri-C, Inc.)
Subt - Install Cap Drainage System				\$44,261		Average of two bids (3rd bid disqualified due to non-conformity)
(Subt: Assem 15.01.21 thru 15.01.22)				\$67,886	downflume and drainage system installation	cap cover area

NOTE: Sheet to be added.

15.01 RMU-2 Landfill Closure (1-Cell)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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15.01.23 Groundwater Monitoring					production rate = 0.5 hours per sample for two techs; 9 wells; 1 events/6 months	
Monit'g Events & Samples/Event					0.0 quart'ly + 8 semi-ann + 1.0 b-ann'l x 1.05 each = 8.9 samp	includes 5% QA sampling
Technician	8.9	hours	\$38.00	\$338	8.9 samp @ 0.5 hrs/samp = 4.45 hours @ 2 units/crew = 8.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	8.9	samp	\$25.00	\$223	8.9 samples	bottles, shipping supplies
VOC Analysis (EPA 624)	8.9	samp	\$105.00	\$935		Average of three quotes
Subt - GW Mon During Closure				\$1,495	<i>groundwater monitoring for six (6) months</i>	
(Subt: Assembly 15.01.23)				\$1,495		

15.01.24 Leachate Management					leachate collected from surface and sub-surface projected to be mildly contaminated	
Onsite Aqueous Treatment	2962122	gals	\$0.0178	\$52,726	6.9 acres x 429,293 gal/acre = 2962122	17,000,000 gal = maximum volume of leachate for RMU-1 (39.6 acres) in past 10 years over 12 months closure. 17,000,000/39.6 = 429,293 gal/acre
Electricity for 40-gpm Pumps	0	kwh	\$0.10	\$0	2 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 0.0 pumps = 0.0 kwhs	40 gpm pump = 2 hp; 1.0 hph = .75 kwh
Electricity for 100-gpm Pumps	4380	kwh	\$0.10	\$438	5 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 1.0 pumps = 4,380 kwhs	100 gpm pump = 5 hp; 1.0 hph = .75 kwh
Electricity for 600-gpm Pump	26280	kwh	\$0.10	\$2,628	30 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 1.0 pump = 26,280 kwhs	600 gpm pump = 30 hp; 1.0 hph = .75 kwh
200 GPM Transfer Pump	1	each	\$6,194.00	\$6,194	1.0 pump =	2004 DEC Rate * Implicit Deflator
Fuel for 200-gpm Transfer Pump	1800	gals	\$4.50	\$8,100	2 gal/hr x 900 hrs/year x 1.0 pump = 1800 gals	fuel for transfer pump
Pump/Motor Replace/Maint/Repair	0.75	each	\$2,294.00	\$1,721	3 pumps x 25% factor = 0.75 events	2004 DEC Rate * Implicit Deflator
Subt - Leachate Management				\$71,806	<i>leachate collection and management for twelve months</i>	

15.01.25 Leachate Monitoring					12 months of leachate monitoring	Sampling Frequency from Schedule I, Exhibit F, Condition G
Technician	12	hours	\$38.00	\$456	12 samp @ 0.5 hrs/samp = 6 hours @ 2 units/crew = 12 hours	
Sampling Supplies	12	samp	\$5.00	\$60	12 samples Included in unit rate	bottles, shipping supplies
Primary Leachate: PP VOCs (epa 624)	4.2	samp	\$105.00	\$441	4 samp/yr x 1 cell x 1.0 years 1.05 QA req't = 4.2 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PCBs (sw 8081)	2.1	samp	\$131.67	\$277	2 samp/yr x 1 cell x 1.0 years 1.05 QA req't = 2.1 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PP Metals (sw 6010)	2.1	samp	\$155.00	\$326	2 samp/yr x 1 cell x 1.0 years 1.05 QA req't = 2.1 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: VOCs (epa 624)	4.2	samp	\$105.00	\$441	4 samp/yr x 1 cell x 1.0 years 1.05 QA req't = 4.2 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Organics	1.1	samp	\$633.33	\$697	1 samp/yr x 1 cell x 1.0 years 1.05 QA req't = 1.1 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Metals (sw 6010)	1.1	samp	\$155.00	\$171	1 samp/yr x 1 cell x 1.0 years 1.05 QA req't = 1.1 samples	analytical price: average of three quotes - permit specifications
pH & conductivity	12.6	samp	\$15.00	\$189	12 samp/yr x 1 cell x 1.0 years 1.05 QA req't = 12.6 samples	analytical price: average of three quotes - permit specifications
Shipping	4.2	each	\$5.00	\$21		
Subt - Leachate Monitoring				\$3,077	<i>leachate collection and management for twelve months</i>	CWM estimate for leachate monitoring for 6 months
(Subt: Assemb 15.01.24 thru 15.01.25)				\$74,883		

NOTE: Sheet to be added.

15.01 RMU-2 Landfill Closure (1-Cell)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References	
15.01.26 PPE Usage & H&S Planning					Level C during waste grading, grading layer installation, and decon only.		
PPE Usage - Level D	345	days	\$0.00	\$0	50 man days/ acre x 6.9 acres =	345 days	50 man days/acre to complete closure
PPE Usage - Mod Level C	0	days	\$9.00	\$0	0 days for Modified Level C		
PPE Usage - Level C	69	days	\$25.00	\$1,725	5.0 days/acre x 6.9 acres x 2 crew =	69 days	5 days for waste grading per acre, grading layer installation and equip decon
Health & Safety Officer	82.8	hours	\$75.00	\$6,210	3312 hours @ 2.5% hr/hr =	82.8 hours	60 man days/acre * 8 hrs * 6.9 acres = 3036 hrs
Subt - PPE Usage/H&S Planning				\$7,935			
15.01.27 Supervision							
Foreman	0	hours	\$65.00	\$0	Foreman included in per acre unit costs		
Site Project Manager	0	hours	\$75.00	\$0	Included in Construction Management costs		
Construction Management	6.9	acre	\$4,500.00	\$31,050	\$4,500 per acre @ 6.9 acres		
Subtotal - Supervision				\$31,050			
15.01.28 QA/QC Monitoring/Certification					300,564 SF plus 25% lap factor =	375,705 SF	
<i>Final Cover</i>							
GCL Conformance Testing	4.0	test	\$235.00	\$940	300,564 SF plus 25% lap factor = 375,705 SF @ 1 test/100000 SF =	4.0 tests	Actual Costs 2011 (TRI Environmental)
40-Mil Liner Conformance Testing	4.0	test	\$98.00	\$392	300,564 SF plus 25% lap factor = 375,705 SF @ 1 test/100000 SF =	4.0 tests	Actual Costs 2011 (TRI Environmental)
Geocomposite Liner Conformance Testing	4.0	test	\$300.00	\$1,200	300,564 SF plus 25% lap factor = 375,705 SF @ 1 test/100000 SF =	4.0 tests	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source		Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/40-Mil)	1	test	\$5,055.00	\$5,055	1 test per material type/source		Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover 40-Mil/Geocomp)	1	test	\$5,055.00	\$5,055	1 test per material type/source		Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover Geocomp/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source		Actual Costs 2011 (TRI Environmental)
QA/QC Monitoring/Certification	6.9	acre	\$25,700.00	\$177,330	6.9 acres		Actual cost 2010/2011 (Ensol, Inc.)
Subtotal - Certification				\$200,082			
(Subt: Assemb 15.01.26 thru 15.01.28)				\$239,067	<i>supervision, health & safety, and certification</i>		
15.01 RMU-2 Landfill Closure				\$3,498,232	<i>CWM estimate based on 6.9 acres</i>		

The Total Labor and Maintenance Costs per year to run the AWT Facility was calculated under the Site Wide Post Closure Plan (Assembly 13.0) and will remain constant regardless of whether or not RMU-2 is generating leachate; the labor, maintenance and number of days per year to run the facility will be the same. Therefore, no costs are associated with labor and maintenance.

NOTE: Sheet to be added.

15.01 RMU-2 Landfill Closure (1-Cell)			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Closure		\$3,498,232	
Site Activity Management Costs	7.00%	\$244,876	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$139,929	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$209,894	note: DEC uses 6%
Engineering During Construction	2.00%	\$69,965	note: DEC uses 2%
General Contractor Profit	6.00%	\$209,894	Note DEC adds 6%
Indirect Costs/Basic Closure	25.00%	\$874,558	
Subtotal - RMU-2 Landfill Closure		\$4,372,790	
Plus Contingency	10.00%	\$437,279	CWM and DEC 10%
Total - RMU-2 Landfill Closure		\$4,810,069	

Cost Per Acre \$697,111 CWM estimate based on 6.9 acres

Cost References:

- "RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
- "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
- "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

Waste Area of RMU-2 (6 cells) : 38.5

Cell #	Acres	Cumulative Acres
20	6.9	6.9
18	6.2	13.1
19	6.4	19.5
17	5.9	25.4
16	6.5	31.9
15	6.6	38.5
Total Area	38.5	acres

Assumptions:

- 0.5 Grading Layer (Unclassified/General Fill)
- Geosynthetic Clay Liner
- 40 mil roughened HDPE geomembrane
- Geocomposite drainage layer
- Eighteen inches (1.5 feet) of unclassified/general fill
- Six inches (0.5 feet) topsoil and vegetative cover

Includes slope correction

Closure Scenarios - Assume Construction Sequence
Cell 20, 18, 19, 17, 16, 15

Closure Sequence	Convert Separation Berm to Perimeter Berm
Cell 20	1.1 Install Cut-off-Wall at outside toe-of-slope of the separator berm
Cell 20/18	1.2 Install perimeter berm
Cell 20/18/19	1.3 Install 3-foot compacted clay liner
Cell 20/18/19/17	1.4 Remove separator berm geosynthetics and clay
Cell 20/18/19/17/16	1.5 Install perimeter berm geosynthetics
Cell 20/18/19/17/16/15	

NOTE: Sheet to be added.

15.02 RMU-2 Landfill Closure (2-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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Waste Cover Area Parameters				38.5 acres = 1,677,060 SF = 186,340 SY	= 62,113 BCY @ 1' deep	Includes slope correction
1-Cell Scenario (Cell 20)	6.9	6.9 acres		= 300,564 SF = 33,396 SY	= 11,132 BCY @ 1' deep	= 5,566 BCY @ 0.5' deep = 16,698 BCY @ 1.5' deep
2-Cell Scenario (Cells 18,20)	13.1	13.1 acres		= 570,636 SF = 63,404 SY	= 21,135 BCY @ 1' deep	= 10,567 BCY @ 0.5' deep = 31,702 BCY @ 1.5' deep
3-Cell Scenario (Cells 18,20,19)	19.5	19.5 acres		= 849,420 SF = 94,380 SY	= 31,460 BCY @ 1' deep	= 15,730 BCY @ 0.5' deep = 47,190 BCY @ 1.5' deep
4-Cell Scenario (Cells 18,20,19,17)	25.4	25.4 acres		= 1,106,424 SF = 122,936 SY	= 40,979 BCY @ 1' deep	= 20,489 BCY @ 0.5' deep = 61,468 BCY @ 1.5' deep
5-Cell Scenario (Cells 18,20,19,17,16)	31.9	31.9 acres		= 1,389,564 SF = 154,396 SY	= 51,465 BCY @ 1' deep	= 25,733 BCY @ 0.5' deep = 77,198 BCY @ 1.5' deep
6-Cell Scenario (Cells 18,20,19,17,16,15)	38.5	38.5 acres		= 1,677,060 SF = 186,340 SY	= 62,113 BCY @ 1' deep	= 62,113 BCY @ 1' deep = 93,170 CY @ 1.5' deep

Liner Feet of Separator Berm Converted to Perimeter Berm					Cut-Off-Wall Length	
1-Cell Scenario (Cell 20)	575				1-Cell Scenario (Cell 20)	445
2-Cell Scenario (Cells 18,20)	1490				2-Cell Scenario (Cells 18,20)	1300
3-Cell Scenario (Cells 18,20,19)	1030				3-Cell Scenario (Cells 18,20,19)	960
4-Cell Scenario (Cells 18,20,19,17)	575				4-Cell Scenario (Cells 18,20,19,17)	515
5-Cell Scenario (Cells 18,20,19,17,16)	600				5-Cell Scenario (Cells 18,20,19,17,16)	500
6-Cell Scenario (Cells 18,20,19,17,16,15)	N/A				6-Cell Scenario (Cells 18,20,19,17,16,15)	N/A

BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material

Separator Berm, Perimeter Berm, and Cut-Off-Wall Lengths from RMU-2 Permit Drawing No. 5
 Perimeter Ditch 3,700 linear feet 1270+585+560+300+710+275=3,700
 Drainage Tile System 5,580 linear feet 13.1 acres * 426 LF/acre = 5,580 LF
 Material Pre-Qualification and Construction Testing Frequencies from RMU-2 Quality Assurance Manual and Technical Specifications (2013)

15.02.1 Convert Separator Berm to Perimeter Berm						
Perimeter Berm	1490	lf	\$ 2,338.17	\$3,483,877	Includes 1300 feet of Cut-Off-Wall and 1490 feet of perimeter berm construction	Value taken from 15.01 Closure Cost, 15.A Berm tab.
Subt - Convert Separator Berm to Perimeter Berm			\$ 2,338.17	\$3,483,877		
(Subt: Assemblies 15.02.1)				\$3,483,877		

15.02.2 Final Waste Cover Grading					production rate = 250 cy/hr - based upon max of 12 inch depth	
Volume of Material to be Graded					21,135 BCY plus 25% comp fact = 26,419 LCY x 0% offsite mat'l = 0 LCY	no add'l mat'l; levelling/grading of existing waste pile only
Waste Grading	13.1	acre	\$5,000.00	\$65,500	13.1 acres	Contractor Rates/Site experience
Subt - Grading Final Waste Cover				\$65,500	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	

15.02.3 Equipment Decontamination					production rate = 4 hours per unit with 2 man crew: 6 pieces of equipment	
Laborer	48	hours	\$39.00	\$1,872	6 units @ 4 hrs/unit = 24 hours @ 2 pers/crew = 48 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Cleaning Solvent	6	gal	\$4.00	\$24	6 units @ 1 gal/unit = 6 gallons	site experience
Pressure Washer	24	hours	\$4.04	\$97	6 units @ 4 hrs/unit = 24 hours @ 1 units/crew = 24 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
PCB Solids/Debris Transport	4.8	mile	\$3.50	\$17	1 drum Solids/debris @ 80 drums/load = 0.0125 loads @ 385 miles/load = 4.8 miles	Rate: transporters quote/site experience
PCB Solids/Debris Disposal	1	drum	\$100.00	\$100	1 drum Solids/debris	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing
Subt - Equipment Decontamination				\$2,110		

15.02.4 Decon Water Samp/Dispose					production rate = 0.5 hours/sample for two techs	
Technician	1	hours	\$38.00	\$38	1.0 samp @ 0.5 hr/samp = 0.5 hours @ 2 pers/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
VOC Analysis (EPA 624)	1	samp	\$105.00	\$105	1.0 areas @ 1.0 samp/area = 1.0 samples	analytical price: average of three quotes
On-site Water Disposal	1200	gal	\$0.0313	\$38	6 units @ 200 gal/unit/wa = 1200 gallons	200 gallons per unit/site experience
Subt - Decon Water Samp/Disposal				\$181		

NOTE: Sheet to be added.

15.02 RMU-2 Landfill Closure (2-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.02.5 PCB Equipment Wipe					production rate = 0.5 hours/sample for two techs; 2 wipe samples per unit/site experience	
Technician	12	hours	\$38.00	\$456	12.0 samp @ 0.5 hr/samp = 6.0 hours @ 2 pers/crew = 12.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
PCB Analysis (SW 8081/8082)	12	samp	\$83.33	\$1,000	6 units @ 2 samp/unit = 12.0 samples	analytical price: average of three quotes
Subt - PCB Wipe				\$1,456		
15.02.6 Perimeter Ditch Spreading					Included in 15.02.7	
Subt - Spreading Ditch Fill				\$0.00		
15.02.7 Perimeter Road/Ditch Compaction					Includes ditch excavation & road placement compaction	2010 Average of two bids
Subt - Compact Fin'l Cover/Ditch	3700	LF	\$12.00	\$44,400	Liner feet	
15.02.8 Final Cover/Ditch Inspection					Included in CQA 15.02.28	
Subt - Inspecting Final Cover/Ditch				\$0		
(Subt: Assemblies 15.02.2 thru 15.02.8)				\$113,646	<i>grading, compacting, & inspecting final waste pile layer; decon & testing of equipment</i>	<i>waste cover area</i>
15.02.9 Grading Layer					Based on 2009 Design & 13.1 acres to be closed: depth 0.5 ft	Grading layer 0.5 feet thick
General Fill	13209	CY	\$11.00	\$145,299	10,567 BCY plus 25% comp fact = 13,209 LCY x 100% offsite mat'l : 13,209 LCY	
General Fill Place/Compact	13209	CY	\$10.00	\$132,090	10,567 BCY plus 25% comp fact = 13,209 LCY x 100% offsite mat'l : 13,209 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Grading Layer Surface Prep	13.1	acre	\$10,000.00	\$131,000	13.1 acres	Site Experience
Subt - Grading Layer				\$408,389		
15.02.10 Cover Geosynthetic Clay Liner					Based on 2009 Design & 13.1 acres to be closed	
GCL Material	713295	SF	\$0.46	\$328,116	570,636 SF plus 25% lap factor = 713,395 SF	2011 Actual Cost per SQFT including shipping & tax
GCL Installation	713985	SF	\$0.35	\$249,895	570,636 SF plus 25% lap factor = 713,395 SF	2010 Quoted price from CETCO
Subt - GCL				\$578,010		
(Subt: Assemblies 15.02.9 thru 15.02.10)				\$986,399	<i>spread and compact grading layer (0.5' offsite material) and install of impervious GCL</i>	<i>cap cover area</i>
15.02.11 40-Mil Liner					production rate = 250 SF/Hr,	
40-Mil Polymeric Liner	713295	SF	\$0.21	\$149,792	570,636 SF plus 25% lap factor = 713,395 SF	2010 Actual Cost per SQFT including tax & shipping
40-Mil Polymeric Liner Installation	713295	SF	\$0.46	\$328,116	570,636 SF plus 25% lap factor = 713,395 SF	2010 Quoted price from CETCO
Subt - 40-Mil Liner				\$477,908		
15.02.12 Liner Anchor Trench						
Anchor Trench	13.1	acres	\$1,000.00	\$13,100	13.1 acres remaining	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Anchor Trench				\$13,100	<i>includes labor & equipment for trenching, backfilling, and compacting (3' x 1.5')</i>	
15.02.13 Geocomposite Drainage Layer					production rate = 5,000 SF/Hr, RSM/UP p. 9-83 (33-08-0513)	
Geocomposite Drainage Layer	713295	SF	\$0.38	\$271,052	570,636 SF plus 25% lap factor = 713,395 SF	2011 Actual Blended cost (TN240 & TN350) including shipping & handling
Geocomposite Drainage Layer Install	713295	SF	\$0.32	\$228,254		2010 Quoted price from CETCO
Subt - Geocomposite Layer				\$499,307		

NOTE: Sheet to be added.

15.02 RMU-2 Landfill Closure (2-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.02.14 Geosynthetic Liner Testing					QC testing included in Assem 15.02.11; see assembly 15.02.28 for QA Monitoring	
Subt - Liner Testing			\$0	\$0	field testing crew required to work concurrently with liner placement crew in Assem 15.02.11	
(Subt: Assem 15.02.11 thru 15.02.14)				\$990,314	installing geosynthetics above impervious gcl layer	liner area: cap cover plus 25% lap factor
15.02.15 Unclassified Fill					depth = 1.5 feet (in one 18" lift) for final cover	
General Fill - offsite source	39628	LCY	\$11	\$435,908	31,702 BCY plus 25% comp fact = 39,628 LCY x 100% offsite mat'l : 39,628 LCY	Actual Quoted Cost 2011 (Tri-C, Inc.)
Subt - Spreading Unclassified Fill				\$435,908	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
15.02.16 Compacting Unclassified Fill					Compaction of one 1.5 feet lift	
Place/Spread/Compact Unclass. Fill	39628	LCY	\$10	\$396,280	31,702 BCY plus 25% comp fact = 39,628 LCY x 100% offsite mat'l : 39,628 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Compacting Unclass. Fill				\$396,280		
15.02.17 Unclassified Fill Testing						
Subt - Unclassified Fill Testing				\$0	Included in Assem 15.02.28 QA/QC Monitoring	
15.02.18 Unclassified Fill Test Fill					Assume two sources of unclassified fill	
Test Fill Construction	1	each	\$12,000	\$12,000	1 test fill/source @ 1 source/13.1 acres = 1 test fills	Actual Cost 2011 (Tri-C, Inc.)
Test Fill QA Testing/Reporting	1	each	\$8,000	\$8,000		Actual Cost 2011 (Ensol, Inc.)
Subt - Unclassified Fill Test Fill				\$20,000		
(Subt: Assem 15.02.15 thru 15.02.18)				\$852,188	spreading and compacting unclassified fill layer; 1.5-feet in depth using 100% offsite material	cap cover area
15.02.19 Spreading Topsoil					depth = 0.5 feet	
Topsoil	13209	LCY	\$15.00	\$198,135	10,567 BCY plus 25% comp fact = 13,209 LCY x 100% offsite mat'l : 13,209 LCY	Actual Cost 2011 (Tri-C, Inc.)
Spreading Topsoil	13209	LCY	\$11.00	\$145,299	10,567 BCY plus 25% comp fact = 13,209 LCY x 100% offsite mat'l : 13,209 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Spreading Topsoil				\$343,434	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	Includes hydroseeding/mulch/fertilizer
15.02.20 Cap Vegetation						
Hydro Seeding w/Mulch & Fertilizer	0	MSF	0	\$0	Included in Assem 15.02.19	
Erosion Control Matting	3712	SY	\$12.50	\$46,400	3,340 LF x 10 FT wide rolls = 33,400 SF / 9 SF/SY = 3,712 SY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt -Cap Vegetation				\$46,400		Drainage Tile System
(Subt: Assem 15.02.19 thru 15.02.20)				\$389,834	placing topsoil and hydro seeding with mulch and fertilizer	cap cover area
15.02.21 Downflume Installation						
Rip Rap Downflume (grouted)	2	each	\$23,625.00	\$47,250	13.1 acres @ 2 downflume = 2 downflume	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Install Downflume				\$47,250		
15.02.22 Cap Drainage Syst Install'n					production rate = 47.5 LF/hr, RSM/SWL p. 77 (02510-850-0200)	
Install Cap Drainage System	5580	LF	\$15.06	\$84,035	11.21 acres 5,580 LF	Actual Cost 2011 (Tri-C, Inc.)
Subt - Install Cap Drainage System				\$84,035		Average of two bids (3rd bid disqualified due to non-conformity)
(Subt: Assem 15.02.21 thru 15.02.22)				\$131,285	downflume and drainage system installation	cap cover area

NOTE: Sheet to be added.

15.02 RMU-2 Landfill Closure (2-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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15.02.23 Groundwater Monitoring					production rate = 0.5 hours per sample for two techs; 21 wells; 1 events/6 months	
Monit'g Events & Samples/Event					0.0 quart'ly + 20 semi-ann + 1.0 b-ann'l x 1.05 each = 21.5 samp	includes 5% QA sampling
Technician	21.5	hours	\$38.00	\$817	21.5 samp @ 0.5 hrs/samp = 10.7 hours @ 2 units/crew = 21.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	21.5	samp	\$25.00	\$538	21.5 samples	bottles, shipping supplies
VOC Analysis (EPA 624)	21.5	samp	\$105.00	\$2,258		Average of three quotes
Subt - GW Mon During Closure				\$3,612	<i>groundwater monitoring for six (6) months</i>	
(Subt: Assembly 15.02.23)				\$3,612		

15.02.24 Leachate Management					leachate collected from surface and sub-surface projected to be mildly contaminated	Sampling Frequency from Schedule I, Exhibit F, Condition G
Onsite Aqueous Treatment	5623738	gals	\$0.0178	\$100,103	13.1 acres x 429,293 gal/acre = 5,623,738	17,000,000 gal = maximum volume of leachate for RMU-1 (39.6 acres) in past 10 years over 12 months closure. 17,000,000/39.6 = 429,293 gal/acre
Electricity for 40-gpm Pumps	0	kwh	\$0.10	\$0	2 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 0.0 pumps = 0.0 kwhs	40 gpm pump = 2 hp; 1.0 hph = .75 kwh
Electricity for 100-gpm Pumps	8760	kwh	\$0.10	\$876	5 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 2.0 pumps = 8,760 kwhs	100 gpm pump = 5 hp; 1.0 hph = .75 kwh
Electricity for 600-gpm Pump	26280	kwh	\$0.10	\$2,628	30 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 1.0 pump = 26,280 kwhs	600 gpm pump = 30 hp; 1.0 hph = .75 kwh
200 GPM Transfer Pump	1	each	\$6,194.00	\$6,194	1.0 pump =	2004 DEC Rate * Implicit Deflator
Fuel for 200-gpm Transfer Pump	1800	gals	\$4.50	\$8,100	2 gal/hr x 900 hrs/year x 1.0 pump = 1800 gals	fuel for transfer pump
Pump/Motor Replace/Maint/Repair	1	each	\$2,294.00	\$2,294	4 pumps x 25% factor = 1.0 events	2004 DEC Rate * Implicit Deflator
Subt - Leachate Management				\$120,195	<i>leachate collection and management for twelve months</i>	

15.02.25 Leachate Monitoring					12 months of leachate monitoring	
Technician	24	hours	\$38.00	\$912	24 samp @ 0.5 hrs/samp = 12 hours @ 2 units/crew = 24 hours	
Sampling Supplies	24	samp	\$5.00	\$120	24 samples Included in unit rate	bottles, shipping supplies
Primary Leachate: PP VOCs (epa 624)	8.4	samp	\$105.00	\$882	4 samp/yr x 2 cells x 1.0 years 1.05 QA req't = 8.4 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PCBs (sw 8081)	4.2	samp	\$131.67	\$553	2 samp/yr x 2 cells x 1.0 years 1.05 QA req't = 4.2 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PP Metals (sw 6010)	4.2	samp	\$155.00	\$651	2 samp/yr x 2 cells x 1.0 years 1.05 QA req't = 4.2 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: VOCs (epa 624)	8.4	samp	\$105.00	\$882	4 samp/yr x 2 cells x 1.0 years 1.05 QA req't = 8.4 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Organics	2.1	samp	\$633.33	\$1,330	1 samp/yr x 2 cells x 1.0 years 1.05 QA req't = 2.1 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Metals (sw 6010)	2.1	samp	\$155.00	\$326	1 samp/yr x 2 cells x 1.0 years 1.05 QA req't = 2.1 samples	analytical price: average of three quotes - permit specifications
pH & conductivity	25.2	samp	\$15.00	\$378	12 samp/yr x 2 cells x 1.0 years 1.05 QA req't = 25.2 samples	analytical price: average of three quotes - permit specifications
Shipping	8.4	each	\$5.00	\$42		
Subt - Leachate Monitoring				\$6,076	<i>leachate collection and management for twelve months</i>	CWM estimate for leachate monitoring for 6 months
(Subt: Assemb 15.02.24 thru 15.02.25)				\$126,270		

15.02.26 PPE Usage & H&S Planning					Level C during waste grading, grading layer installation, and decon only.	
PPE Usage - Level D	655	days	\$0.00	\$0	50 man days/ acre x 13.1 acres = 655 days	50 man days/acre to complete closure
PPE Usage - Mod Level C	0	days	\$9.00	\$0	0 days for Modified Level C	
PPE Usage - Level C	131	days	\$25.00	\$3,275	5 days/acre x 13.1 acres = 2 crew = 131 days	5 days for waste grading per acre, grading layer installation and equip decon
Health & Safety Officer	157.2	hours	\$75.00	\$11,790	6,288 hours @ 2.5% hr/hr = 157.2 hours	60 man days/acre * 8 hrs * 13.1 acres = 6288 hrs
Subt - PPE Usage/H&S Planning				\$15,065		

NOTE: Sheet to be added.

15.02 RMU-2 Landfill Closure (2-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.02.27 Supervision						
Foreman	0	hours	\$65.00	\$0	Foreman included in per acre unit costs	
Site Project Manager	0	hours	\$75.00	\$0	Included in Construction Management costs	
Construction Management	13.1	acre	\$4,500.00	\$58,950	\$4,500 per acre @ 13.1 acres	
Subtotal - Supervision				\$58,950		
15.02.28 QA/QC Monitoring/Certification						
<i>Final Cover</i>					570,636 SF plus 25% lap factor = 713,395 SF	
GCL Conformance Testing	8.0	test	\$235.00	\$1,880	570,636 SF plus 25% lap factor = 713,395 SF @ 1 test/100000 SF = 8.0 tests	Actual Costs 2011 (TRI Environmental)
40-Mil Liner Conformance Testing	8.0	test	\$98.00	\$784	570,636 SF plus 25% lap factor = 713,395 SF @ 1 test/100000 SF = 8.0 tests	Actual Costs 2011 (TRI Environmental)
Geocomposite Liner Conformance Testing	8.0	test	\$300.00	\$2,400	570,636 SF plus 25% lap factor = 713,395 SF @ 1 test/100000 SF = 8.0 tests	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/40-Mil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover 40-Mil/Geocomp)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover Geocomp/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
QA/QC Monitoring/Certification	13.1	acre	\$25,700.00	\$336,670	13.1 acres	Actual cost 2010/2011 (Ensol, Inc.)
Subtotal - Certification				\$361,954		
(Subt: Assemb 15.02.26 thru 15.02.28)				\$435,969	<i>supervision, health & safety, and certification</i>	
15.02 RMU-2 Landfill Closure				\$7,513,394	<i>CWM estimate based on 13.1 acres</i>	

The Total Labor and Maintenance Costs per year to run the AWT Facility was calculated under the Site Wide Post Closure Plan and will remain constant regardless of whether or not RMU-2 is generating leachate; the labor, maintenance and number of days per year to run the facility will be the same. Therefore, no costs are associated with labor and maintenance.

NOTE: Sheet to be added.

15.02 RMU-2 Landfill Closure (2-Cells)			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Closure		\$7,513,394	
Site Activity Management Costs	7.00%	\$525,938	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$300,536	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$450,804	note: DEC uses 6%
Engineering During Construction	2.00%	\$150,268	note: DEC uses 2%
General Contractor Profit	6.00%	\$450,804	Note DEC adds 6%
Indirect Costs/Basic Closure	25.00%	\$1,878,349	
Subtotal - RMU-2 Landfill Closure		\$9,391,743	
Plus Contingency	10.00%	\$939,174	CWM and DEC 10%
Total - RMU-2 Landfill Closure		\$10,330,917	

Cost Per Acre \$788,619.63 CWM estimate based on 13.1 acres

Cost References:

- "RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
- "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
- "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

Waste Area of RMU-2 (6 cells) :	38.5	
Cell #	Acres	Cummulative Acres
20	6.9	6.9
18	6.2	13.1
19	6.4	19.5
17	5.9	25.4
16	6.5	31.9
15	6.6	38.5
Total Area	38.5	acres

Assumptions:

- 0.5 Grading Layer (Unclassified/General Fill)
- Geosynthetic Clay Liner
- 40 mil roughened HDPE geomembrane
- Geocomposite drainage layer
- Eighteen inches (1.5 feet) of unclassified/general fill
- Six inches (0.5 feet) topsoil and vegetative cover

Includes slope correction

Closure Scenarios - Assume Construction Sequence
Cell 20, 18, 19, 17, 16, 15

Closure Sequence

- Cell 20
- Cell 20/18
- Cell 20/18/19
- Cell 20/18/19/17
- Cell 20/18/19/17/16
- Cell 20/18/19/17/16/15

Convert Separation Berm to Perimeter Berm

- 1.1 Install Cut-off-Wall at outside toe-of-slope of the separator berm
- 1.2 Install perimeter berm
- 1.3 Install 3-foot compacted clay liner
- 1.4 Remove separator berm geosynthetics and clay
- 1.5 Install perimeter berm geosynthetics

NOTE: Sheet to be added.

15.03 RMU-2 Landfill Closure (3-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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Waste Cover Area Parameters						
			38.5 acres = 1,677,060 SF = 186,340 SY	= 62,113 BCY @ 1' deep	Includes slope correction	
1-Cell Scenario (Cell 20)	6.9	6.9 acres = 300,564 SF = 33,396 SY		= 11,132 BCY @ 1' deep	= 5,566 BCY @ 0.5' deep	= 16,698 BCY @ 1.5' deep
2-Cell Scenario (Cells 18,20)	13.1	13.1 acres = 570,636 SF = 63,404 SY		= 21,135 BCY @ 1' deep	= 10,567 BCY @ 0.5' deep	= 31,702 BCY @ 1.5' deep
3-Cell Scenario (Cells 18,20,19)	19.5	19.5 acres = 849,420 SF = 94,380 SY		= 31,460 BCY @ 1' deep	= 15,730 BCY @ 0.5' deep	= 47,190 BCY @ 1.5' deep
4-Cell Scenario (Cells 18,20,19,17)	25.4	25.4 acres = 1,106,424 SF = 122,936 SY		= 40,979 BCY @ 1' deep	= 20,489 BCY @ 0.5' deep	= 61,468 BCY @ 1.5' deep
5-Cell Scenario (Cells 18,20,19,17,16)	31.9	31.9 acres = 1,389,564 SF = 154,396 SY		= 51,465 BCY @ 1' deep	= 25,733 BCY @ 0.5' deep	= 77,198 BCY @ 1.5' deep
6-Cell Scenario (Cells 18,20,19,17,16,15)	38.5	38.5 acres = 1,677,060 SF = 186,340 SY		= 62,113 BCY @ 1' deep	= 31,056 BCY @ 0.5' deep	= 93,170 CY @ 1.5' deep

Liner Feet of Separator Berm Converted to Perimeter Berm				Cut-Off-Wall Length		
1-Cell Scenario (Cell 20)	575			1-Cell Scenario (Cell 20)	445	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material
2-Cell Scenario (Cells 18,20)	1490			2-Cell Scenario (Cells 18,20)	1300	
3-Cell Scenario (Cells 18,20,19)	1030			3-Cell Scenario (Cells 18,20,19)	960	
4-Cell Scenario (Cells 18,20,19,17)	575			4-Cell Scenario (Cells 18,20,19,17)	515	
5-Cell Scenario (Cells 18,20,19,17,16)	600			5-Cell Scenario (Cells 18,20,19,17,16)	500	
6-Cell Scenario (Cells 18,20,19,17,16,15)	N/A			6-Cell Scenario (Cells 18,20,19,17,16,15)	N/A	

Separator Berm, Perimeter Berm, and Cut-Off-Wall Lengths from RMU-2 Permit Drawing No. 5
 Perimeter Ditch 4,700 linear feet 560+585+670+500+600+775+710+300 = 4,700
 Drainage Tile System 8,307 linear feet 19.5 acres * 426 LF/acre = 8,307 LF

Material Pre-Qualification and Construction Testing Frequencies from RMU-2 Quality Assurance Manual and Technical Specifications (2013)

15.03.1 Convert Separator Berm to Perimeter Berm						
Perimeter Berm	1030	lf	\$2,338.17	\$2,408,317	Includes 960 feet of Cut-Off-Wall and 1030 feet of perimeter berm construction	Value taken from 15.01 Closure Cost, 15.A Berm tab.
Subt - Convert Separator Berm to Perimeter Berm			\$2,338.17	\$2,408,317		
(Subt: Assemblies 15.02.1)				\$2,408,317		

15.03.2 Final Waste Cover Grading					production rate = 250 cy/hr - based upon max of 12 inch depth	
Volume of Material to be Graded					31,460 BCY plus 25% comp fact = 39,325 LCY x 0% offsite mat'l = 0 LCY	no add'l mat'l; levelling/grading of existing waste pile only
Waste Grading	19.5	acre	\$5,000.00	\$97,500	19.5 acres	Contractor Rates/Site experience
Subt - Grading Final Waste Cover				\$97,500	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	

15.03.3 Equipment Decontamination					production rate = 4 hours per unit with 2 man crew: 6 pieces of equipment	
Laborer	48	hours	\$39.00	\$1,872	6 units @ 4 hrs/unit = 24 hours @ 2 pers/crew = 48 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Cleaning Solvent	6	gal	\$4.00	\$24	6 units @ 1 gal/unit = 6 gallons	site experience
Pressure Washer	24	hours	\$4.04	\$97	6 units @ 4 hrs/unit = 24 hours @ 1 units/crew = 24 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
PCB Solids/Debris Transport	4.8	mile	\$3.50	\$17	1 drum Solids/debris @ 80 drums/load = 0.0125 loads @ 385 miles/load = 4.8 miles	Rate: transporters quote/site experience
PCB Solids/Debris Disposal	1	drum	\$100.00	\$100	1 drum Solids/debris	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing
Subt - Equipment Decontamination				\$2,110		

15.03.4 Decon Water Samp/Dispose					production rate = 0.5 hours/sample for two techs	
Technician	1	hours	\$38.00	\$38	1.0 samp @ 0.5 hr/samp = 0.5 hours @ 2 pers/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
VOC Analysis (EPA 624)	1	samp	\$105.00	\$105	1.0 areas @ 1.0 samp/area = 1.0 samples	analytical price: average of three quotes
On-site Water Disposal	1200	gal	\$0.0313	\$38	6 units @ 200 gal/unit/wa = 1200 gallons	200 gallons per unit/site experience
Subt - Decon Water Samp/Disposal				\$181		

NOTE: Sheet to be added.

15.03 RMU-2 Landfill Closure (3-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.03.5 PCB Equipment Wipe					production rate = 0.5 hours/sample for two techs; 2 wipe samples per unit/site experience	
Technician	12	hours	\$38.00	\$456	12.0 samp @ 0.5 hr/samp = 6.0 hours @ 2 pers/crew = 12.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
PCB Analysis (SW 8081/8082)	12	samp	\$83.33	\$1,000	6 units @ 2 samp/unit = 12.0 samples	analytical price: average of three quotes
Subt - PCB Wipe				\$1,456		
15.03.6 Perimeter Ditch Spreading					Included in 15.03.7	
Subt - Spreading Ditch Fill				\$0.00		
15.03.7 Perimeter Road/Ditch Compaction					Includes ditch excavation & road placement compaction	2010 Average of two bids
Subt - Compact Fin'l Cover/Ditch	4700	LF	\$12.00	\$56,400	Liner feet	
15.03.8 Final Cover/Ditch Inspection					Included in CQA 15.03.28	
Subt - Inspecting Final Cover/Ditch				\$0		
(Subt: Assemblies 15.03.2 thru 15.03.8)				\$157,646	<i>grading, compacting, & inspecting final waste pile layer; decon & testing of equipment</i>	<i>waste cover area</i>
15.03.9 Grading Layer					Based on 2009 Design & 19.5 acres to be closed	Grading layer 0.5 feet thick
General Fill	19662	CY	\$11.00	\$216,282	15,730 BCY plus 25% comp fact = 19,662 LCY x 100% offsite mat'l : 19,662 LCY	
General Fill Place/Compact	19662	CY	\$10.00	\$196,620	15,730 BCY plus 25% comp fact = 19,662 LCY x 100% offsite mat'l : 19,662 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Grading Layer Surface Prep	19.5	acre	\$10,000.00	\$195,000	19.5 acres	Site Experience
Subt - Grading Layer				\$607,902		
15.03.10 Cover Geosynthetic Clay Liner					Based on 2009 Design & 19.5 acres to be closed	
GCL Material	1062775	SF	\$0.46	\$488,877	849,420 SF plus 25% lap factor = 1,062,775 SF	2011 Actual Cost per SQFT including shipping & tax
GCL Installation	1062775	SF	\$0.35	\$371,971	849,420 SF plus 25% lap factor = 1,062,775 SF	2010 Quoted price from CETCO
Subt - GCL				\$860,848		
(Subt: Assemblies 15.03.9 thru 15.03.10)				\$1,468,750	<i>spread and compact grading layer (0.5' offsite material) and install of impervious GCL</i>	<i>cap cover area</i>
15.03.11 40-Mil Liner					production rate = 250 SF/Hr,	
40-Mil Polymeric Liner	1062775	SF	\$0.21	\$223,183	849,420 SF plus 25% lap factor = 1,062,775 SF	2010 Actual Cost per SQFT including tax & shipping
40-Mil Polymeric Liner Installation	1062775	SF	\$0.46	\$488,877	849,420 SF plus 25% lap factor = 1,062,775 SF	2010 Quoted price from CETCO
Subt - 40-Mil Liner				\$712,059		
15.03.12 Liner Anchor Trench						
Anchor Trench	19.5	acres	\$1,000.00	\$19,500	19.5 acres remaining	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Anchor Trench				\$19,500	<i>includes labor & equipment for trenching, backfilling, and compacting (3' x 1.5')</i>	
15.03.13 Geocomposite Drainage Layer					production rate = 5,000 SF/Hr, RSM/UP p. 9-83 (33-08-0513)	
Geocomposite Drainage Layer	1062775	SF	\$0.38	\$403,855	849,420 SF plus 25% lap factor = 1,062,775 SF	2011 Actual Blended cost (TN240 & TN350) including shipping & handling
Geocomposite Drainage Layer Install	1062775	SF	\$0.32	\$340,088	849,420 SF plus 25% lap factor = 1,062,775 SF	2010 Quoted price from CETCO
Subt - Geocomposite Layer				\$743,943		

NOTE: Sheet to be added.

15.03 RMU-2 Landfill Closure (3-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.03.14 Geosynthetic Liner Testing					QC testing included in Assem 15.03.11; see assembly 15.03.28 for QA Monitoring	
Subt - Liner Testing			\$0	\$0	field testing crew required to work concurrently with liner placement crew in Assem 15.03.11	
(Subt: Assem 15.03.11 thru 15.03.14)				\$1,475,502	<i>installing geosynthetics above impervious gcl layer</i>	<i>liner area: cap cover plus 25% lap factor</i>
15.03.15 Unclassified Fill					depth = 1.5 feet (in one 18" lift) for final cover	
General Fill - offsite source	58988	LCY	\$11	\$648,868	47,190 BCY plus 25% comp fact = 58,988 LCY x 100% offsite mat'l : 58,988 LCY	Actual Quoted Cost 2011 (Tri-C, Inc.)
Subt - Spreading Unclassified Fill				\$648,868	<i>BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material</i>	
15.03.16 Compacting Unclassified Fill					Compaction of one 1.5 feet lift	
Place/Spread/Compact Unclass. Fill	58988	LCY	\$10	\$589,880	47,190 BCY plus 25% comp fact = 58,988 LCY x 100% offsite mat'l : 58,988 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Compacting Unclass. Fill				\$589,880		
15.03.17 Unclassified Fill Testing						
Subt - Unclassified Fill Testing				\$0	Included in Assem 15.03.28 QA/QC Monitoring	
15.03.18 Unclassified Fill Test Fill					Assume two sources of unclassified fill	
Test Fill Construction	2	each	\$12,000	\$24,000	1 test fill/source @ 2 source/16.56 acres = 2 test fills	Actual Cost 2011 (Tri-C, Inc.)
Test Fill QA Testing/Reporting	2	each	\$8,000	\$16,000		Actual Cost 2011 (Ensol, Inc.)
Subt - Unclassified Fill Test Fill				\$40,000		
(Subt: Assem 15.03.15 thru 15.03.18)				\$1,278,748	<i>spreading and compacting unclassified fill layer; 1.5-feet in depth using 100% offsite material</i>	<i>cap cover area</i>
15.03.19 Spreading Topsoil					depth = 0.5 feet	
Topsoil	19662	LCY	\$15.00	\$294,930	15,730 BCY plus 25% comp fact = 19,662 LCY x 100% offsite mat'l : 19,662 LCY	Actual Cost 2011 (Tri-C, Inc.)
Spreading Topsoil	19662	LCY	\$11.00	\$216,282	15,730 BCY plus 25% comp fact = 19,662 LCY x 100% offsite mat'l : 19,662 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Spreading Topsoil				\$511,212	<i>BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material</i>	Includes hydroseeding/mulch/fertilizer
15.03.20 Cap Vegetation						
Hydro Seeding w/Mulch & Fertilizer	0	MSF	0	\$0	Included in Assem 15.03.19	
Erosion Control Matting	5,525	SY	\$12.50	\$69,063	4,972 LF x 10 ft wide rolls = 49,720 SF / 9 SF/SY = 5,525 SY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt -Cap Vegetation				\$69,063		
(Subt: Assem 15.03.19 thru 15.03.20)				\$580,275	<i>placing topsoil and hydro seeding with mulch and fertilizer</i>	<i>cap cover area</i>
15.03.21 Downflume Installation						
Rip Rap Downflume (grouted)	2	each	\$23,625.00	\$47,250	19.5 acres @ 2 downflume = 2 downflume	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Install Downflume				\$47,250		
15.03.22 Cap Drainage Syst Install'n					production rate = 47.5 LF/hr, RSM/SWL p. 77 (02510-850-0200)	
Install Cap Drainage System	8307	LF	\$15.06	\$125,103	19.5 acres 8,307 LF	Actual Cost 2011 (Tri-C, Inc.)
Subt - Install Cap Drainage System				\$125,103		Average of two bids (3rd bid disqualified due to non-conformity)
(Subt: Assem 15.03.21 thru 15.03.22)				\$172,353	<i>downflume and drainage system installation</i>	<i>cap cover area</i>

NOTE: Sheet to be added.

15.03 RMU-2 Landfill Closure (3-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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15.03.23 Groundwater Monitoring					production rate = 0.5 hours per sample for two techs; 21 wells; 2 events/12 months	
Monit'g Events & Samples/Event					0.0 quart'ly + 40 semi-ann + 1.0 b-ann'l x 1.05 each = 42.5 samp	includes 5% QA sampling
Technician	42.5	hours	\$38.00	\$1,615	42.5 samp @ 0.5 hrs/samp = 11.1 hours @ 2 units/crew = 42.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	42.5	samp	\$25.00	\$1,063	42.5 samples	bottles, shipping supplies
VOC Analysis (EPA 624)	42.5	samp	\$105.00	\$4,463		Average of three quotes
Subt - GW Mon During Closure				\$7,140	<i>groundwater monitoring for twelve (12) months</i>	
(Subt: Assembly 15.03.23)				\$7,140		

15.03.24 Leachate Management					leachate collected from surface and sub-surface projected to be mildly contaminated	
Onsite Aqueous Treatment	8371314	gals	\$0.0178	\$149,009	19.5 acres x 429,293 gal/acre = 8,371,314	17,000,000 gal = maximum volume of leachate for RMU-1 (39.6 acres) in past 10 years over 12 months closure. 17,000,000/39.6 = 429,293 gal/acre
Electricity for 40-gpm Pumps	12264	kwh	\$0.10	\$1,226	2 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 0.0 pumps = 0.0 kwhs	40 gpm pump = 2 hp; 1.0 hph = .75 kwh
Electricity for 100-gpm Pumps	13140	kwh	\$0.10	\$1,314	5 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 3.0 pumps = 13,140 kwhs	100 gpm pump = 5 hp; 1.0 hph = .75 kwh
Electricity for 600-gpm Pump	26280	kwh	\$0.10	\$2,628	30 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 1.0 pump = 26,280 kwhs	600 gpm pump = 30 hp; 1.0 hph = .75 kwh
200 GPM Transfer Pump	1	each	\$6,194.00	\$6,194	1.0 pump =	2004 DEC Rate * Implicit Deflator
Fuel for 200-gpm Transfer Pump	1800	gals	\$4.50	\$8,100	2 gal/hr x 900 hrs/year x 1.0 pump = 1800 gals	fuel for transfer pump
Pump/Motor Replace/Maint/Repair	1.25	each	\$2,294.00	\$2,868	5 pumps x 25% factor = 1.25 events	2004 DEC Rate * Implicit Deflator
Subt - Leachate Management				\$171,339	<i>leachate collection and management for twelve months</i>	

15.03.25 Leachate Monitoring					12 months of leachate monitoring	Sampling Frequency from Schedule I, Exhibit F, Condition G
Technician	36	hours	\$38.00	\$1,368	36 samp @ 0.5 hrs/samp = 18 hours @ 2 units/crew = 36 hours	
Sampling Supplies	36	samp	\$5.00	\$180	36 samples Included in unit rate	bottles, shipping supplies
Primary Leachate: PP VOCs (epa 624)	12.6	samp	\$105.00	\$1,323	4 samp/yr x 3 cells x 1.0 years 1.05 QA req't = 12.6 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PCBs (sw 8081)	6.3	samp	\$131.67	\$830	2 samp/yr x 3 cells x 1.0 years 1.05 QA req't = 6.3 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PP Metals (sw 6010)	6.3	samp	\$155.00	\$977	2 samp/yr x 3 cells x 1.0 years 1.05 QA req't = 6.3 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: VOCs (epa 624)	12.6	samp	\$105.00	\$1,323	4 samp/yr x 3 cells x 1.0 years 1.05 QA req't = 12.6 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Organics	3.2	samp	\$633.33	\$2,027	1 samp/yr x 3 cells x 1.0 years 1.05 QA req't = 3.2 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Metals (sw 6010)	3.2	samp	\$155.00	\$496	1 samp/yr x 3 cells x 1.0 years 1.05 QA req't = 3.2 samples	analytical price: average of three quotes - permit specifications
pH & conductivity	37.8	samp	\$15.00	\$567	12 samp/yr x 3 cells x 1.0 years 1.05 QA req't = 37.8 samples	analytical price: average of three quotes - permit specifications
Shipping	12.6	each	\$5.00	\$63		
Subt - Leachate Monitoring				\$9,153	<i>leachate collection and management for twelve months</i>	CWM estimate for leachate monitoring for 6 months
(Subt: Assemb 15.03.24 thru 15.03.25)				\$180,492		

15.03.26 PPE Usage & H&S Planning					Level C during waste grading, grading layer installation, and decon only.	
PPE Usage - Level D	975	days	\$0.00	\$0	50 man days/ acre x 19.5 acres = 975 days	50 man days/acre to complete closure
PPE Usage - Mod Level C	0	days	\$9.00	\$0	0 days for Modified Level C	
PPE Usage - Level C	195	days	\$25.00	\$4,875	5 days/acre x 19.5 acres x 2 crew = 195 days	5 days for waste grading per acre, grading layer installation and equip decon
Health & Safety Officer	234	hours	\$75.00	\$17,550	9,360 hours @ 2.5% hr/hr = 234 hours	60 man days/acre * 8 hrs * 19.5 acres = 9360 hrs
Subt - PPE Usage/H&S Planning				\$22,425		

NOTE: Sheet to be added.

15.03 RMU-2 Landfill Closure (3-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.03.27 Supervision						
Foreman	0	hours	\$65.00	\$0	Foreman included in per acre unit costs	
Site Project Manager	0	hours	\$75.00	\$0	Included in Construction Management costs	
Construction Management	19.5	acre	\$4,500.00	\$87,750	\$4,500 per acre @ 19.5 acres	
Subtotal - Supervision				\$87,750		
15.03.28 QA/QC Monitoring/Certification						
<i>Final Cover</i>					849,420 SF plus 25% lap factor = 1,062,775 SF	
GCL Conformance Testing	11.0	test	\$235.00	\$2,585	849,420 SF plus 25% lap factor = 1,062,775 SF @ 1 test/100000 SF = 11 tests	Actual Costs 2011 (TRI Environmental)
40-Mil Liner Conformance Testing	11.0	test	\$98.00	\$1,078	849,420 SF plus 25% lap factor = 1,062,775 SF @ 1 test/100000 SF = 11 tests	Actual Costs 2011 (TRI Environmental)
Geocomposite Liner Conformance Testing	11.0	test	\$300.00	\$3,300	849,420 SF plus 25% lap factor = 1,062,775 SF @ 1 test/100000 SF = 11 tests	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/40-Mil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover 40-Mil/Geocomp)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover Geocomp/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
QA/QC Monitoring/Certification	19.5	acre	\$25,700.00	\$501,150	19.5 acres	Actual cost 2010/2011 (Ensol, Inc.)
Subtotal - Certification				\$528,333		
(Subt: Assemb 15.03.26 thru 15.03.28)				\$638,508	<i>supervision, health & safety, and certification</i>	
15.03 RMU-2 Landfill Closure						
				\$8,367,731	<i>CWM estimate based on 19.5 acres</i>	

The Total Labor and Maintenance Costs per year to run the AWT Facility was calculated under the Site Wide Post Closure Plan and will remain constant regardless of whether or not RMU-2 is generating leachate; the labor, maintenance and number of days per year to run the facility will be the same. Therefore, no costs are associated with labor and maintenance.

NOTE: Sheet to be added.

15.04 RMU-2 Landfill Closure (4-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
Waste Cover Area Parameters						
1-Cell Scenario (Cell 20)	6.9	6.9 acres	= 300,564 SF = 33,396 SY	= 62,113 BCY @ 1' deep	= 11,132 BCY @ 1' deep	= 5,566 BCY @ 0.5' deep = 16,698 BCY @ 1.5' deep
2-Cell Scenario (Cells 18,20)	13.1	13.1 acres	= 570,636 SF = 63,404 SY	= 21,135 BCY @ 1' deep	= 10,567 BCY @ 0.5' deep	= 31,702 BCY @ 1.5' deep
3-Cell Scenario (Cells 18,20,19)	19.5	19.5 acres	= 849,420 SF = 94,380 SY	= 31,460 BCY @ 1' deep	= 15,730 BCY @ 0.5' deep	= 47,190 BCY @ 1.5' deep
4-Cell Scenario (Cells 18,20,19,17)	25.4	25.4 acres	= 1,106,424 SF = 122,936 SY	= 40,979 BCY @ 1' deep	= 20,489 BCY @ 0.5' deep	= 61,468 BCY @ 1.5' deep
5-Cell Scenario (Cells 18,20,19,17,16)	31.9	31.9 acres	= 1,389,564 SF = 154,396 SY	= 51,465 BCY @ 1' deep	= 25,733 BCY @ 0.5' deep	= 77,198 BCY @ 1.5' deep
6-Cell Scenario (Cells 18,20,19,17,16,15)	38.5	38.5 acres	= 1,677,060 SF = 186,340 SY	= 62,113 BCY @ 1' deep	= 31,056 BCY @ 0.5' deep	= 93,170 CY @ 1.5' deep
Liner Feet of Separator Berm Converted to Perimeter Berm					Cut-Off-Wall Length	
1-Cell Scenario (Cell 20)	575				1-Cell Scenario (Cell 20)	445
2-Cell Scenario (Cells 18,20)	1490				2-Cell Scenario (Cells 18,20)	1300
3-Cell Scenario (Cells 18,20,19)	1030				3-Cell Scenario (Cells 18,20,19)	960
4-Cell Scenario (Cells 18,20,19,17)	575				4-Cell Scenario (Cells 18,20,19,17)	515
5-Cell Scenario (Cells 18,20,19,17,16)	600				5-Cell Scenario (Cells 18,20,19,17,16)	500
6-Cell Scenario (Cells 18,20,19,17,16,15)	N/A				6-Cell Scenario (Cells 18,20,19,17,16,15)	N/A
Separator Berm, Perimeter Berm, and Cut-Off-Wall Lengths from RMU-2 Permit Drawing No. 5						
Perimeter Ditch			4,825 linear feet	1270+1200+600+500+670+585 = 4,825		
Drainage Tile System			10,820 linear feet	25.4 acres * 426 LF/acre = 10,820 LF		

BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material

Material Pre-Qualification and Construction Testing Frequencies from RMU-2 Quality Assurance Manual and Technical Specifications (2013)						
15.04.1 Convert Separator Berm to Perimeter Berm						
Perimeter Berm	575	lf	\$2,338.17	\$1,344,449	Includes 515 feet of Cut-Off-Wall and 575 feet of perimeter berm construction	Value taken from 15.01 Closure Cost, 15.A Berm tab.
Subt - Convert Separator Berm to Perimeter Berm			\$2,338.17	\$1,344,449		
(Subt: Assemblies 15.02.1)				\$1,344,449		

15.04.2 Final Waste Cover Grading						
Volume of Material to be Graded					production rate = 250 cy/hr - based upon max of 12 inch depth	
Waste Grading	25.4	acre	\$5,000.00	\$127,000	40,979 BCY plus 25% comp fact = 51,224 LCY x 0% offsite mat'l = 0 LCY	no add'l mat'l; levelling/grading of existing waste pile only
Subt - Grading Final Waste Cover				\$127,000	25.4 acres	Contractor Rates/Site experience
					BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	

15.04.3 Equipment Decontamination						
Laborer	48	hours	\$39.00	\$1,872	6 units @ 4 hrs/unit = 24 hours @ 2 pers/crew = 48 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Cleaning Solvent	6	gal	\$4.00	\$24	6 units @ 1 gal/unit = 6 gallons	site experience
Pressure Washer	24	hours	\$4.04	\$97	6 units @ 4 hrs/unit = 24 hours @ 1 units/crew = 24 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
PCB Solids/Debris Transport	4.8	mile	\$3.50	\$17	1 drum Solids/debris @ 80 drums/load = 0.0125 loads @ 385 miles/load = 4.8 miles	Rate: transporters quote/site experience
PCB Solids/Debris Disposal	1	drum	\$100.00	\$100	1 drum Solids/debris	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing
Subt - Equipment Decontamination				\$2,110		

15.04.4 Decon Water Samp/Dispose						
Technician	1	hours	\$38.00	\$38	production rate = 0.5 hours/sample for two techs	
VOC Analysis (EPA 624)	1	samp	\$105.00	\$105	1.0 samp @ 0.5 hr/samp = 0.5 hours @ 2 pers/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
On-site Water Disposal	1200	gal	\$0.0313	\$38	1.0 areas @ 1.0 samp/area = 1.0 samples	analytical price: average of three quotes
Subt - Decon Water Samp/Disposal				\$181	6 units @ 200 gal/unit/wa = 1200 gallons	200 gallons per unit/site experience

NOTE: Sheet to be added.

15.04 RMU-2 Landfill Closure (4-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.04.5 PCB Equipment Wipe					production rate = 0.5 hours/sample for two techs; 2 wipe samples per unit/site experience	
Technician	12	hours	\$38.00	\$456	12.0 samp @ 0.5 hr/samp = 6.0 hours @ 2 pers/crew = 12.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
PCB Analysis (SW 8081/8082)	12	samp	\$83.33	\$1,000	6 units @ 2 samp/unit = 12.0 samples	analytical price: average of three quotes
Subt - PCB Wipe				\$1,456		
15.04.6 Perimeter Ditch Spreading					Included in 15.04.7	
Subt - Spreading Ditch Fill				\$0.00		
15.04.7 Perimeter Road/Ditch Compaction					Includes ditch excavation & road placement compaction	2010 Average of two bids
Subt - Compact Fin'l Cover/Ditch	4825	LF	\$12.00	\$57,900	Liner feet	
15.04.8 Final Cover/Ditch Inspection					Included in CQA 15.04.28	
Subt - Inspecting Final Cover/Ditch				\$0		
(Subt: Assemblies 15.04.2 thru 15.04.8)				\$188,646	<i>grading, compacting, & inspecting final waste pile layer; decon & testing of equipment</i>	<i>waste cover area</i>
15.04.9 Grading Layer					Based on 2009 Design & 25.4 acres to be closed	Grading layer 0.5 feet thick
General Fill	25611	CY	\$11.00	\$281,721	20,489 BCY plus 25% comp fact = 25,611 LCY x 100% offsite mat'l : 25,611 LCY	
General Fill Place/Compact	25611	CY	\$10.00	\$256,110	20,489 BCY plus 25% comp fact = 25,611 LCY x 100% offsite mat'l : 25,611 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Grading Layer Surface Prep	25.4	acre	\$10,000.00	\$254,000	25.4 acres	Site Experience
Subt - Grading Layer				\$791,831		
15.04.10 Cover Geosynthetic Clay Liner					Based on 2009 Design & 25.4 acres to be closed	
GCL Material	1383030	SF	\$0.46	\$636,194	1,106,424 SF plus 25% lap factor = 1,383,030 SF	2011 Actual Cost per SQFT including shipping & tax
GCL Installation	1383030	SF	\$0.35	\$484,061	1,106,424 SF plus 25% lap factor = 1,383,030 SF	2010 Quoted price from CETCO
Subt - GCL				\$1,120,254		
(Subt: Assemblies 15.04.9 thru 15.04.10)				\$1,912,085	<i>spread and compact grading layer (0.5' offsite material) and install of impervious GCL</i>	<i>cap cover area</i>
15.04.11 40-Mil Liner					production rate = 250 SF/Hr,	
40-Mil Polymeric Liner	1383030	SF	\$0.21	\$290,436	1,106,424 SF plus 25% lap factor = 1,383,030 SF	2010 Actual Cost per SQFT including tax & shipping
40-Mil Polymeric Liner Installation	1383030	SF	\$0.46	\$636,194	1,106,424 SF plus 25% lap factor = 1,383,030 SF	2010 Quoted price from CETCO
Subt - 40-Mil Liner				\$926,630		
15.04.12 Liner Anchor Trench						
Anchor Trench	25.4	acres	\$1,000.00	\$25,400	25.4 acres remaining	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Anchor Trench				\$25,400	<i>includes labor & equipment for trenching, backfilling, and compacting (3' x 1.5')</i>	
15.04.13 Geocomposite Drainage Layer					production rate = 5,000 SF/Hr, RSM/UP p. 9-83 (33-08-0513)	
Geocomposite Drainage Layer	1383030	SF	\$0.38	\$525,551	1,106,424 SF plus 25% lap factor = 1,383,030 SF	2011 Actual Blended cost (TN240 & TN350) including shipping & handling
Geocomposite Drainage Layer Install	1383030	SF	\$0.32	\$442,570	1,106,424 SF plus 25% lap factor = 1,383,030 SF	2010 Quoted price from CETCO
Subt - Geocomposite Layer				\$968,121		
15.04.14 Geosynthetic Liner Testing					QC testing included in Assem 15.04.11; see assembly 15.04.28 for QA Monitoring	
Subt - Liner Testing				\$0	field testing crew required to work concurrently with liner placement crew in Assem 15.04.11	
(Subt: Assemb 15.04.11 thru 15.04.14)				\$1,920,151	<i>installing geosynthetics above impervious gcl layer</i>	<i>liner area: cap cover plus 25% lap factor</i>

NOTE: Sheet to be added.

15.04 RMU-2 Landfill Closure (4-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.04.15 Unclassified Fill						
General Fill - offsite source	76835	LCY	\$11	\$845,185	depth = 1.5 feet (in one 18" lift) for final cover 61,468 BCY plus 25% comp fact = 76,835 LCY x 100% offsite mat'l : 76,835 LCY	Actual Quoted Cost 2011 (Tri-C, Inc.)
Subt - Spreading Unclassified Fill				\$845,185	<i>BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material</i>	
15.04.16 Compacting Unclassified Fill						
Place/Spread/Compact Unclass. Fill	76835	LCY	\$10	\$768,350	Compaction of one 1.5 feet lift 61,468 BCY plus 25% comp fact = 76,835 LCY x 100% offsite mat'l : 76,835 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Compacting Unclass. Fill				\$768,350		
15.04.17 Unclassified Fill Testing						
Subt - Unclassified Fill Testing				\$0	Included in Assemb 15.04.28 QA/QC Monitoring	
15.04.18 Unclassified Fill Test Fill						
Test Fill Construction	2	each	\$12,000	\$24,000	Assume two sources of unclassified fill 1 test fill/source @ 2 source/21.98 acres = 2 test fills	Actual Cost 2011 (Tri-C, Inc.)
Test Fill QA Testing/Reporting	2	each	\$8,000	\$16,000		Actual Cost 2011 (Ensol, Inc.)
Subt - Unclassified Fill Test Fill				\$40,000		
(Subt: Assemb 15.04.15 thru 15.04.18)				\$1,653,535	<i>spreading and compacting unclassified fill layer; 1.5-feet in depth using 100% offsite material</i>	<i>cap cover area</i>
15.04.19 Spreading Topsoil						
Topsoil	25611	LCY	\$15.00	\$384,165	depth = 0.5 feet 20,489 BCY plus 25% comp fact = 25,611 LCY x 100% offsite mat'l : 25,611 LCY	Actual Cost 2011 (Tri-C, Inc.)
Spreading Topsoil	25611	LCY	\$11.00	\$281,721	20,489 BCY plus 25% comp fact = 25,611 LCY x 100% offsite mat'l : 25,611 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Spreading Topsoil				\$665,886	<i>BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material</i>	Includes hydroseeding/mulch/fertilizer
15.04.20 Cap Vegetation						
Hydro Seeding w/Mulch & Fertilizer	0	MSF	0	\$0	Included in Assemb 15.04.19	
Erosion Control Matting	7197	SY	\$12.50	\$89,963	6477 LF x 10 ft wide rolls = 64,770 SF / 9 SF/SY = 7,197 SY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt -Cap Vegetation				\$89,963		
(Subt: Assemb 15.04.19 thru 15.04.20)				\$755,849	<i>placing topsoil and hydro seeding with mulch and fertilizer</i>	<i>cap cover area</i>
15.04.21 Downflume Installation						
Rip Rap Downflume (grouted)	2	each	\$23,625.00	\$47,250	25.4 acres @ 2 downflume = 2 downflume	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Install Downflume				\$47,250		
15.04.22 Cap Drainage Syst Install'n						
Install Cap Drainage System	10820	LF	\$15.06	\$162,949	production rate = 47.5 LF/hr, RSM/SWL p. 77 (02510-850-0200) 25.4 acres 10,820 LF	Actual Cost 2011 (Tri-C, Inc.)
Subt - Install Cap Drainage System				\$162,949		Average of two bids (3rd bid disqualified due to non-conformity)
(Subt: Assemb 15.04.21 thru 15.04.22)				\$210,199	<i>downflume and drainage system installation</i>	<i>cap cover area</i>

NOTE: Sheet to be added.

15.04 RMU-2 Landfill Closure (4-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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15.04.23 Groundwater Monitoring					production rate = 0.5 hours per sample for two techs; 21 wells; 2 events/12 months	
Monit'g Events & Samples/Event					0.0 quart'ly + 40 semi-ann + 1.0 b-ann'l x 1.05 each = 42.5 samp	includes 5% QA sampling
Technician	42.5	hours	\$38.00	\$1,615	42.5 samp @ 0.5 hrs/samp = 11.1 hours @ 2 units/crew = 42.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	42.5	samp	\$25.00	\$1,063	42.5 samples	bottles, shipping supplies
VOC Analysis (EPA 624)	42.5	samp	\$105.00	\$4,463		Average of three quotes
Subt - GW Mon During Closure				\$7,140	<i>groundwater monitoring for twelve (12) months</i>	
(Subt: Assembly 15.04.23)				\$7,140		

15.04.24 Leachate Management					leachate collected from surface and sub-surface projected to be mildly contaminated	
Onsite Aqueous Treatment	10904042	gals	\$0.0178	\$194,092	25.4 acres x 429,293 gal/acre = 10,904,042	17,000,000 gal = maximum volume of leachate for RMU-1 (39.6 acres) in past 10 years over 12 months closure. 17,000,000/39.6 = 429,293 gal/acre
Electricity for 40-gpm Pumps	12264	kwh	\$0.10	\$1,226	2 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 0.0 pumps = 0.0 kwhs	40 gpm pump = 2 hp; 1.0 hph = .75 kwh
Electricity for 100-gpm Pumps	13140	kwh	\$0.10	\$1,314	5 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 4.0 pumps = 17,520 kwhs	100 gpm pump = 5 hp; 1.0 hph = .75 kwh
Electricity for 600-gpm Pump	26280	kwh	\$0.10	\$2,628	30 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 1.0 pump = 26,280 kwhs	600 gpm pump = 30 hp; 1.0 hph = .75 kwh
200 GPM Transfer Pump	1	each	\$6,194.00	\$6,194	1.0 pump =	2004 DEC Rate * Implicit Deflator
Fuel for 200-gpm Transfer Pump	1800	gals	\$4.50	\$8,100	2 gal/hr x 900 hrs/year x 1.0 pump = 1800 gals	fuel for transfer pump
Pump/Motor Replace/Maint/Repair	1.5	each	\$2,294.00	\$3,441	6 pumps x 25% factor = 1.5 events	2004 DEC Rate * Implicit Deflator
Subt - Leachate Management				\$216,995	<i>leachate collection and management for twelve months</i>	

15.04.25 Leachate Monitoring					12 months of leachate monitoring	Sampling Frequency from Schedule I, Exhibit F, Condition G
Technician	48	hours	\$38.00	\$1,824	48 samp @ 0.5 hrs/samp = 24 hours @ 2 units/crew = 48 hours	
Sampling Supplies	48	samp	\$5.00	\$240	48 samples Included in unit rate	bottles, shipping supplies
Primary Leachate: PP VOCs (epa 624)	16.8	samp	\$105.00	\$1,764	4 samp/yr x 4 cells x 1.0 years 1.05 QA req't = 16.8 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PCBs (sw 8081)	8.4	samp	\$131.67	\$1,106	2 samp/yr x 4 cells x 1.0 years 1.05 QA req't = 8.4 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PP Metals (sw 6010)	8.4	samp	\$155.00	\$1,302	2 samp/yr x 4 cells x 1.0 years 1.05 QA req't = 8.4 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: VOCs (epa 624)	16.8	samp	\$105.00	\$1,764	4 samp/yr x 4 cells x 1.0 years 1.05 QA req't = 16.8 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Organics	4.2	samp	\$633.33	\$2,660	1 samp/yr x 4 cells x 1.0 years 1.05 QA req't = 4.2 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Metals (sw 6010)	4.2	samp	\$155.00	\$651	1 samp/yr x 4 cells x 1.0 years 1.05 QA req't = 4.2 samples	analytical price: average of three quotes - permit specifications
pH & conductivity	50.4	samp	\$15.00	\$756	12 samp/yr x 4 cells x 1.0 years 1.05 QA req't = 50.4 samples	analytical price: average of three quotes - permit specifications
Shipping	16.8	each	\$5.00	\$84		
Subt - Leachate Monitoring				\$12,151	<i>leachate collection and management for twelve months</i>	CWM estimate for leachate monitoring for 6 months
(Subt: Assemb 15.04.24 thru 15.04.25)				\$229,146		

15.04.26 PPE Usage & H&S Planning					Level C during waste grading, grading layer installation, and decon only.	
PPE Usage - Level D	1270	days	\$0.00	\$0	50 man days/ acre x 25.4 acres = 1270 days	50 man days/acre to complete closure
PPE Usage - Mod Level C	0	days	\$9.00	\$0	0 days for Modified Level C	
PPE Usage - Level C	254	days	\$25.00	\$6,350	5.0 days/acre x 25.4 acres x 2 crew = 254 days	5 days for waste grading per acre, grading layer installation and equip decon
Health & Safety Officer	304.8	hours	\$75.00	\$22,860	12,192 hours @ 2.5% hr/hr = 304.8 hours	60 man days/acre * 8 hrs * 25.4 acres = 12192 hrs
Subt - PPE Usage/H&S Planning				\$29,210		

NOTE: Sheet to be added.

15.04 RMU-2 Landfill Closure (4-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.04.27 Supervision						
Foreman	0	hours	\$65.00	\$0	Foreman included in per acre unit costs	
Site Project Manager	0	hours	\$75.00	\$0	Included in Construction Management costs	
Construction Management	25.4	acre	\$4,500.00	\$114,300	\$4,500 per acre @ 25.4 acres	
Subtotal - Supervision				\$114,300		
15.04.28 QA/QC Monitoring/Certification						
Final Cover					1,106,424 SF plus 25% lap factor = 1,383,030 SF	
GCL Conformance Testing	14.0	test	\$235.00	\$3,290	1,106,424 SF plus 25% lap factor = 1,383,030 SF @ 1 test/100000 SF = 14 tests	Actual Costs 2011 (TRI Environmental)
40-Mil Liner Conformance Testing	14.0	test	\$98.00	\$1,372	1,106,424 SF plus 25% lap factor = 1,383,030 SF @ 1 test/100000 SF = 14 tests	Actual Costs 2011 (TRI Environmental)
Geocomposite Liner Conformance Testing	14.0	test	\$300.00	\$4,200	1,106,424 SF plus 25% lap factor = 1,383,030 SF @ 1 test/100000 SF = 14 tests	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/40-Mil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover 40-Mil/Geocomp)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover Geocomp/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
QA/QC Monitoring/Certification	25.4	acre	\$25,700.00	\$652,780	25.4 acres	Actual cost 2010/2011 (Ensol, Inc.)
Subtotal - Certification				\$681,862		
(Subt: Assemb 15.04.26 thru 15.04.28)				\$825,372	supervision, health & safety, and certification	
15.04 RMU-2 Landfill Closure				\$9,046,573	CWM estimate based on 25.4 acres	

The Total Labor and Maintenance Costs per year to run the AWT Facility was calculated under the Site Wide Post Closure Plan and will remain constant regardless of whether or not RMU-2 is generating leachate; the labor, maintenance and number of days per year to run the facility will be the same. Therefore, no costs are associated with labor and maintenance.

NOTE: Sheet to be added.

15.04 RMU-2 Landfill Closure (4-Cells)			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Closure		\$9,046,573	
Site Activity Management Costs	7.00%	\$633,260	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$361,863	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$542,794	note: DEC uses 6%
Engineering During Construction	2.00%	\$180,931	note: DEC uses 2%
General Contractor Profit	6.00%	\$542,794	Note DEC adds 6%
Indirect Costs/Basic Closure	25.00%	\$2,261,643	
Subtotal - RMU-2 Landfill Closure		\$11,308,216	
Plus Contingency	10.00%	\$1,130,822	CWM and DEC 10%
Total - RMU-2 Landfill Closure		\$12,439,038	

Cost Per Acre \$489,725.89 CWM estimate based on 25.4 acres

Cost References:

- "RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
- "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
- "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

Waste Area of RMU-2 (6 cells) :	38.5	
Cell #	Acres	Cummulative Acres
20	6.9	6.9
18	6.2	13.1
19	6.4	19.5
17	5.9	25.4
16	6.5	31.9
15	6.6	38.5
Total Area	38.5	acres

Assumptions:

- 0.5 Grading Layer (Unclassified/General Fill)
- Geosynthetic Clay Liner
- 40 mil roughened HDPE geomembrane
- Geocomposite drainage layer
- Eighteen inches (1.5 feet) of unclassified/general fill
- Six inches (0.5 feet) topsoil and vegetative cover

Includes slope correction

Closure Scenarios - Assume Construction Sequence
Cell 20, 18, 19, 17, 16, 15

Closure Sequence

- Cell 20
- Cell 20/18
- Cell 20/18/19
- Cell 20/18/19/17
- Cell 20/18/19/17/16
- Cell 20/18/19/17/16/15

Convert Separation Berm to Perimeter Berm

- 1.1 Install Cut-off-Wall at outside toe-of-slope of the separator berm
- 1.2 Install perimeter berm
- 1.3 Install 3-foot compacted clay liner
- 1.4 Remove separator berm geosynthetics and clay
- 1.5 Install perimeter berm geosynthetics

NOTE: Sheet to be added.

15.05 RMU-2 Landfill Closure (5-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
Waste Cover Area Parameters						
	38.5	acres	= 1,677,060 SF = 186,340 SY	= 62,113 BCY @ 1' deep	Includes slope correction	
1-Cell Scenario (Cell 20)	6.9	6.9 acres	= 300,564 SF = 33,396 SY	= 11,132 BCY @ 1' deep	= 5,566 BCY @ 0.5' deep	= 16,698 BCY @ 1.5' deep
2-Cell Scenario (Cells 18,20)	13.1	13.1 acres	= 570,636 SF = 63,404 SY	= 21,135 BCY @ 1' deep	= 10,567 BCY @ 0.5' deep	= 31,702 BCY @ 1.5' deep
3-Cell Scenario (Cells 18,20,19)	19.5	19.5 acres	= 849,420 SF = 94,380 SY	= 31,460 BCY @ 1' deep	= 15,730 BCY @ 0.5' deep	= 47,190 BCY @ 1.5' deep
4-Cell Scenario (Cells 18,20,19,17)	25.4	25.4 acres	= 1,106,424 SF = 122,936 SY	= 40,979 BCY @ 1' deep	= 20,489 BCY @ 0.5' deep	= 61,468 BCY @ 1.5' deep
5-Cell Scenario (Cells 18,20,19,17,16)	31.9	31.9 acres	= 1,389,564 SF = 154,396 SY	= 51,465 BCY @ 1' deep	= 25,733 BCY @ 0.5' deep	= 77,198 BCY @ 1.5' deep
6-Cell Scenario (Cells 18,20,19,17,16,15)	38.5	38.5 acres	= 1,677,060 SF = 186,340 SY	= 62,113 BCY @ 1' deep	= 31,056 BCY @ 0.5' deep	= 93,170 CY @ 1.5' deep
Liner Feet of Separator Berm Converted to Perimeter Berm				Cut-Off-Wall Length		
1-Cell Scenario (Cell 20)	575			1-Cell Scenario (Cell 20)	445	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material
2-Cell Scenario (Cells 18,20)	1490			2-Cell Scenario (Cells 18,20)	1300	
3-Cell Scenario (Cells 18,20,19)	1030			3-Cell Scenario (Cells 18,20,19)	960	
4-Cell Scenario (Cells 18,20,19,17)	575			4-Cell Scenario (Cells 18,20,19,17)	515	
5-Cell Scenario (Cells 18,20,19,17,16)	600			5-Cell Scenario (Cells 18,20,19,17,16)	500	
6-Cell Scenario (Cells 18,20,19,17,16,15)	N/A			6-Cell Scenario (Cells 18,20,19,17,16,15)	N/A	

Separator Berm, Perimeter Berm, and Cut-Off-Wall Lengths from RMU-2 Permit Drawing No. 5

Perimeter Ditch	6,035 linear feet	1200+600+500+670+585+560+560+500+600+260 = 6,035
Drainage Tile System	13,590 linear feet	31.9 acres * 426 LF/acre = 13,590 LF

Material Pre-Qualification and Construction Testing Frequencies from RMU-2 Quality Assurance Manual and Technical Specifications (2013)

15.05.1 Convert Separator Berm to Perimeter Berm						
Perimeter Berm	600	lf	\$ 2,338.17	\$1,402,903	Includes 500 feet of Cut-Off-Wall and 600 feet of perimeter berm construction	Value taken from 15.01 Closure Cost, 15.A Berm tab.
Subt - Convert Separator Berm to Perimeter Berm			\$ 2,338.17	\$1,402,903		
(Subt: Assemblies 15.02.1)				\$1,402,903		

15.05.2 Final Waste Cover Grading					production rate = 250 cy/hr - based upon max of 12 inch depth	
Volume of Material to be Graded					51,465 BCY plus 25% comp fact = 64,433 LCY x 0% offsite mat'l = 0 LCY	no add'l mat'l; levelling/grading of existing waste pile only
Waste Grading	31.7	acre	\$5,000.00	\$158,500	31.9 acres	Contractor Rates/Site experience
Subt - Grading Final Waste Cover				\$158,500	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	

15.05.3 Equipment Decontamination					production rate = 4 hours per unit with 2 man crew: 6 pieces of equipment	
Laborer	48	hours	\$39.00	\$1,872	6 units @ 4 hrs/unit = 24 hours @ 2 pers/crew = 48 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Cleaning Solvent	6	gal	\$4.00	\$24	6 units @ 1 gal/unit = 6 gallons	site experience
Pressure Washer	24	hours	\$4.04	\$97	6 units @ 4 hrs/unit = 24 hours @ 1 units/crew = 24 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
PCB Solids/Debris Transport	4.8	mile	\$3.50	\$17	1 drum Solids/debris @ 80 drums/load = 0.0125 loads @ 385 miles/load = 4.8 miles	Rate: transporters quote/site experience
PCB Solids/Debris Disposal	1	drum	\$100.00	\$100	1 drum Solids/debris	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing
Subt - Equipment Decontamination				\$2,110		

15.05.4 Decon Water Samp/Dispose					production rate = 0.5 hours/sample for two techs	
Technician	1	hours	\$38.00	\$38	1.0 samp @ 0.5 hr/samp = 0.5 hours @ 2 pers/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
VOC Analysis (EPA 624)	1	samp	\$105.00	\$105	1.0 areas @ 1.0 samp/area = 1.0 samples	analytical price: average of three quotes
On-site Water Disposal	1200	gal	\$0.0313	\$38	6 units @ 200 gal/unit/wa = 1200 gallons	200 gallons per unit/site experience
Subt - Decon Water Samp/Dispose				\$181		

NOTE: Sheet to be added.

15.05 RMU-2 Landfill Closure (5-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.05.5 PCB Equipment Wipe					production rate = 0.5 hours/sample for two techs;2 wipe samples per unit/site experience	
Technician	12	hours	\$38.00	\$456	12.0 samp @ 0.5 hr/samp = 6.0 hours @ 2 pers/crew = 12.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
PCB Analysis (SW 8081/8082)	12	samp	\$83.33	\$1,000	6 units @ 2 samp/unit = 12.0 samples	analytical price: average of three quotes
Subt - PCB Wipe				\$1,456		
15.05.6 Perimeter Ditch Spreading					Included in 15.05.7	
Subt - Spreading Ditch Fill				\$0.00		
15.05.7 Perimeter Road/Ditch Compaction					Includes ditch excavation & road placement compaction	2010 Average of two bids
Subt - Compact Fin'l Cover/Ditch	6035	LF	\$12.00	\$72,420	Liner feet	
15.05.8 Final Cover/Ditch Inspection					Included in CQA 15.05.28	
Subt - Inspecting Final Cover/Ditch				\$0		
(Subt: Assemblies 15.05.2 thru 15.05.8)				\$234,666	grading, compacting, & inspecting final waste pile layer; decon & testing of equipment	waste cover area
15.05.9 Grading Layer					Based on 2009 Design & 31.9 acres to be closed	Grading layer 0.5 feet thick
General Fill	32166	CY	\$11.00	\$353,826	25,733 BCY plus 25% comp fact = 32,166 LCY x 100% offsite mat'l 32,166 LCY	
General Fill Place/Compact	32166	CY	\$10.00	\$321,660	25,733 BCY plus 25% comp fact = 32,166 LCY x 100% offsite mat'l 32,166 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Grading Layer Surface Prep	31.9	acre	\$10,000.00	\$319,000	31.9 acres	Site Experience
Subt - Grading Layer				\$994,486		
15.05.10 Cover Geosynthetic Clay Liner					Based on 2009 Design & 31.9 acres to be closed	
GCL Material	1736955	SF	\$0.46	\$798,999	1,389,564 SF plus 25% lap factor = 1,736,955 SF	2011 Actual Cost per SQFT including shipping & tax
GCL Installation	1736955	SF	\$0.35	\$607,934	1,389,564 SF plus 25% lap factor = 1,736,955 SF	2010 Quoted price from CETCO
Subt - GCL				\$1,406,934		
(Subt: Assemblies 15.05.9 thru 15.05.10)				\$2,401,420	spread and compact grading layer (0.5' offsite material) and install of impervious GCL	cap cover area
15.05.11 40-Mil Liner					production rate = 250 SF/Hr,	
40-Mil Polymeric Liner	1736955	SF	\$0.21	\$364,761	1,389,564 SF plus 25% lap factor = 1,736,955 SF	2010 Actual Cost per SQFT including tax & shipping
40-Mil Polymeric Liner Installation	1736955	SF	\$0.46	\$798,999	1,389,564 SF plus 25% lap factor = 1,736,955 SF	2010 Quoted price from CETCO
Subt - 40-Mil Liner				\$1,163,760		
15.05.12 Liner Anchor Trench						
Anchor Trench	31.9	acres	\$1,000.00	\$31,900	31.9 acres remaining	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Anchor Trench				\$31,900	includes labor & equipment for trenching, backfilling, and compacting (3' x 1.5')	
15.05.13 Geocomposite Drainage Layer					production rate = 5,000 SF/Hr, RSM/UP p. 9-83 (33-08-0513)	
Geocomposite Drainage Layer	1736955	SF	\$0.38	\$660,043	1,389,564 SF plus 25% lap factor = 1,736,955 SF	2011 Actual Blended cost (TN240 & TN350) including shipping & handling
Geocomposite Drainage Layer Install	1736955	SF	\$0.32	\$555,826	1,389,564 SF plus 25% lap factor = 1,736,955 SF	2010 Quoted price from CETCO
Subt - Geocomposite Layer				\$1,215,869		
15.05.14 Geosynthetic Liner Testing					QC testing included in Assem 15.05.11; see assembly 15.05.28 for QA Monitoring	
Subt - Liner Testing			\$0	\$0	field testing crew required to work concurrently with liner placement crew in Assem 15.05.11	
(Subt: Assemb 15.05.11 thru 15.05.14)				\$2,411,528	installing geosynthetics above impervious gcl layer	liner area: cap cover plus 25% lap factor

NOTE: Sheet to be added.

15.05 RMU-2 Landfill Closure (5-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.05.15 Unclassified Fill					depth = 1.5 feet (in one 18" lift) for final cover	
General Fill - offsite source	96498	LCY	\$11	\$1,061,478	77,198 BCY plus 25% comp fact = 87,877 LCY x 100% offsite mat'l 96,498LCY	Actual Quoted Cost 2011 (Tri-C, Inc.)
Subt - Spreading Unclassified Fill				\$1,061,478	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
15.05.16 Compacting Unclassified Fill					Compaction of one 1.5 feet lift	
Place/Spread/Compact Unclass. Fill	96498	LCY	\$10	\$964,980	77,198 BCY plus 25% comp fact = 87,877 LCY x 100% offsite mat'l 96,498LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Compacting Unclass. Fill				\$964,980		
15.05.17 Unclassified Fill Testing						
Subt - Unclassified Fill Testing				\$0	Included in Assemb 15.05.28 QA/QC Monitoring	
15.05.18 Unclassified Fill Test Fill					Assume two sources of unclassified fill	
Test Fill Construction	2	each	\$12,000	\$24,000	1 test fill/source @ 2 source/31.9 acres = 2 test fills	Actual Cost 2011 (Tri-C, Inc.)
Test Fill QA Testing/Reporting	2	each	\$8,000	\$16,000		Actual Cost 2011 (Ensol, Inc.)
Subt - Unclassified Fill Test Fill				\$40,000		
(Subt: Assemb 15.05.15 thru 15.05.18)				\$2,066,458	spreading and compacting unclassified fill layer; 1.5-feet in depth using 100% offsite material	cap cover area
15.05.19 Spreading Topsoil					depth = 0.5 feet	
Topsoil	32166	LCY	\$15.00	\$482,490	25,733 BCY plus 25% comp fact = 32,166 LCY x 100% offsite mat'l 32,166 LCY	Actual Cost 2011 (Tri-C, Inc.)
Spreading Topsoil	32166	LCY	\$11.00	\$353,826	25,733 BCY plus 25% comp fact = 32,166 LCY x 100% offsite mat'l 32,166 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Spreading Topsoil				\$836,316	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	Includes hydroseeding/mulch/fertilizer
15.05.20 Cap Vegetation						
Hydro Seeding w/Mulch & Fertilizer	0	MSF	0	\$0	Included in Assemb 15.05.19	
Erosion Control Matting	8587	SY	\$12.50	\$107,338	7,728 LF x 10 ft wide rolls = 77,280 SF / 9 SF/SY = 8,587 SY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt -Cap Vegetation				\$107,338		
(Subt: Assemb 15.05.19 thru 15.05.20)				\$943,654	placing topsoil and hydro seeding with mulch and fertilizer	cap cover area
15.05.21 Downflume Installation						
Rip Rap Downflume (grouted)	3	each	\$23,625.00	\$70,875	31.9 acres @ 3 downflume = 3 downflume	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Install Downflume				\$70,875		
15.05.22 Cap Drainage Syst Install'n					production rate = 47.5 LF/hr, RSM/SWL p. 77 (02510-850-0200)	
Install Cap Drainage System	13590	LF	\$15.05	\$204,530	31.9 acres	Actual Cost 2011 (Tri-C, Inc.)
Subt - Install Cap Drainage System				\$204,530		Average of two bids (3rd bid disqualified due to non-conformity)
(Subt: Assemb 15.05.21 thru 15.05.22)				\$275,405	downflume and drainage system installation	cap cover area

NOTE: Sheet to be added.

15.05 RMU-2 Landfill Closure (5-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.05.23 Groundwater Monitoring					production rate = 0.5 hours per sample for two techs; 21 wells; 2 events/12 months	
Monit'g Events & Samples/Event					0.0 quart'ly + 40 semi-ann + 1.0 b-ann'l x 1.05 each = 42.5 samp	includes 5% QA sampling
Technician	42.5	hours	\$38.00	\$1,615	42.5 samp @ 0.5 hrs/samp = 11.1 hours @ 2 units/crew = 42.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	42.5	samp	\$25.00	\$1,063	42.5 samples	bottles, shipping supplies
VOC Analysis (EPA 624)	42.5	samp	\$105.00	\$4,463		Average of three quotes
Subt - GW Mon During Closure				\$7,140	<i>groundwater monitoring for twelve (12) months</i>	
(Subt: Assembly 15.05.23)				\$7,140		
15.05.24 Leachate Management					leachate collected from surface and sub-surface projected to be mildly contaminated	
Onsite Aqueous Treatment	13694446	gals	\$0.0178	\$243,761	31.9 acres x 429,293 gal/acre = 13,694,446 gallons	17,000,000 gal = maximum volume of leachate for RMU-1 (39.6 acres) in past 10 years over 12 months closure. 17,000,000/39.6 = 429,293 gal/acre
Electricity for 40-gpm Pumps	0	kwh	\$0.10	\$0	2 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 0.0 pumps = 0.0 kwhs	40 gpm pump = 2 hp; 1.0 hph = .75 kwh
Electricity for 100-gpm Pumps	26280	kwh	\$0.10	\$2,628	5 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 6.0 pumps = 26,280 kwhs	100 gpm pump = 5 hp; 1.0 hph = .75 kwh
Electricity for 600-gpm Pump	26280	kwh	\$0.10	\$2,628	30 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 1.0 pump = 26,280 kwhs	600 gpm pump = 30 hp; 1.0 hph = .75 kwh
200 GPM Transfer Pump	1	each	\$6,194.00	\$6,194	1.0 pump =	2004 DEC Rate * Implicit Deflator
Fuel for 200-gpm Transfer Pump	1800	gals	\$4.50	\$8,100	2 gal/hr x 900 hrs/year x 1.0 pump = 1800 gals	fuel for transfer pump
Pump/Motor Replace/Maint/Repair	1.75	each	\$2,294.00	\$4,015	7 pumps x 25% factor = 1.75 events	2004 DEC Rate * Implicit Deflator
Subt - Leachate Management				\$267,326	<i>leachate collection and management for twelve months</i>	
15.05.25 Leachate Monitoring					12 months of leachate monitoring	
Technician	60	hours	\$38.00	\$2,280	60 samp @ 0.5 hrs/samp = 30 hours @ 2 units/crew = 60 hours	Sampling Frequency from Schedule I, Exhibit F, Condition G
Sampling Supplies	60	samp	\$5.00	\$300	60 samples Included in unit rate	bottles, shipping supplies
Primary Leachate: PP VOCs (epa 624)	21	samp	\$105.00	\$2,205	4 samp/yr x 5 cells x 1.0 years 1.05 QA req't = 21 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PCBs (sw 8081)	10.5	samp	\$131.67	\$1,383	2 samp/yr x 5 cells x 1.0 years 1.05 QA req't = 10.5 samples	analytical price: average of three quotes - permit specifications
Primary Leachate: PP Metals (sw 6010)	10.5	samp	\$155.00	\$1,628	2 samp/yr x 5 cells x 1.0 years 1.05 QA req't = 10.5 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: VOCs (epa 624)	21	samp	\$105.00	\$2,205	4 samp/yr x 5 cells x 1.0 years 1.05 QA req't = 21 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Organics	5.3	samp	\$633.33	\$3,357	1 samp/yr x 5 cells x 1.0 years 1.05 QA req't = 5.3 samples	analytical price: average of three quotes - permit specifications
Secondary Leach: PP Metals (sw 6010)	5.3	samp	\$155.00	\$822	1 samp/yr x 5 cells x 1.0 years 1.05 QA req't = 5.3 samples	analytical price: average of three quotes - permit specifications
pH & conductivity	63	samp	\$15.00	\$945	12 samp/yr x 5 cells x 1.0 years 1.05 QA req't = 63 samples	analytical price: average of three quotes - permit specifications
Shipping	21	each	\$5.00	\$105		
Subt - Leachate Monitoring				\$15,228	<i>leachate collection and management for twelve months</i>	CWM estimate for leachate monitoring for 6 months
(Subt: Assemb 15.05.24 thru 15.05.25)				\$282,554		
15.05.26 PPE Usage & H&S Planning					Level C during waste grading, grading layer installation, and decon only.	
PPE Usage - Level D	1595	days	\$0.00	\$0	50 man days/ acre x 31.9 acres = 1,595 days	50 man days/acre to complete closure
PPE Usage - Mod Level C	0	days	\$9.00	\$0	0 days for Modified Level C	
PPE Usage - Level C	319	days	\$25.00	\$7,975	5 days/acre x 31.9 acres x 2 crew = 319 days	5 days for waste grading per acre, grading layer installation and equip decon
Health & Safety Officer	382.8	hours	\$75.00	\$28,710	15,312 hours @ 2.5% hr/hr = 382.8 hours	60 man days/acre * 8 hrs * 31.9 acres = 15312 hrs
Subt - PPE Usage/H&S Planning				\$36,685		

NOTE: Sheet to be added.

15.05 RMU-2 Landfill Closure (5-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.05.27 Supervision						
Foreman	0	hours	\$65.00	\$0	Foreman included in per acre unit costs	
Site Project Manager	0	hours	\$75.00	\$0	Included in Construction Management costs	
Construction Management	31.9	acre	\$4,500.00	\$143,550	\$4,500 per acre @ 31.9 acres	
Subtotal - Supervision				\$143,550		
15.05.28 QA/QC Monitoring/Certification						
<i>Final Cover</i>						
GCL Conformance Testing	18.0	test	\$235.00	\$4,230	1,389,564 SF plus 25% lap factor = 1,736,955 SF @ 1 test/100000 SF = 18 tests	Actual Costs 2011 (TRI Environmental)
40-Mil Liner Conformance Testing	18.0	test	\$98.00	\$1,764	1,389,564 SF plus 25% lap factor = 1,736,955 SF @ 1 test/100000 SF = 18 tests	Actual Costs 2011 (TRI Environmental)
Geocomposite Liner Conformance Testing	18.0	test	\$300.00	\$5,400	1,389,564 SF plus 25% lap factor = 1,736,955 SF @ 1 test/100000 SF = 18 tests	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/40-Mil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover 40-Mil/Geocomp)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover Geocomp/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
QA/QC Monitoring/Certification	31.9	acre	\$25,700.00	\$819,830	31.9 acres	Actual cost 2010/2011 (Ensol, Inc.)
Subtotal - Certification				\$851,444		
(Subt: Assemb 15.05.26 thru 15.05.28)				\$1,031,679	<i>supervision, health & safety, and certification</i>	
15.05 RMU-2 Landfill Closure				\$11,057,406	<i>CWM estimate based on 31.9 acres</i>	

The Total Labor and Maintenance Costs per year to run the AWT Facility was calculated under the Site Wide Post Closure Plan and will remain constant regardless of whether or not RMU-2 is generating leachate; the labor, maintenance and number of days per year to run the facility will be the same. Therefore, no costs are associated with labor and maintenance.

NOTE: Sheet to be added.

15.05 RMU-2 Landfill Closure (5-Cells)			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Closure		\$11,057,406	
Site Activity Management Costs	7.00%	\$774,018	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$442,296	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$663,444	note: DEC uses 6%
Engineering During Construction	2.00%	\$221,148	note: DEC uses 2%
General Contractor Profit	6.00%	\$663,444	Note DEC adds 6%
Indirect Costs/Basic Closure	25.00%	\$2,764,352	
Subtotal - RMU-2 Landfill Closure		\$13,821,758	
Plus Contingency	10.00%	\$1,382,176	CWM and DEC 10%
Total - RMU-2 Landfill Closure		\$15,203,934	

Cost Per Acre \$476,612.34 CWM estimate based on 31.9 acres

Cost References:

- "RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
- "RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
- "RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

Waste Area of RMU-2 (6 cells) :	38.5	
Cell #	Acres	Cummulative Acres
20	6.9	6.9
18	6.2	13.1
19	6.4	19.5
17	5.9	25.4
16	6.5	31.9
15	6.6	38.5
Total Area	38.5	acres

Assumptions:

- 0.5 Grading Layer (Unclassified/General Fill)
- Geosynthetic Clay Liner
- 40 mil roughened HDPE geomembrane
- Geocomposite drainage layer
- Eighteen inches (1.5 feet) of unclassified/general fill
- Six inches (0.5 feet) topsoil and vegetative cover

Includes slope correction

Closure Scenarios - Assume Construction Sequence
Cell 20, 18, 19, 17, 16, 15

Closure Sequence

- Cell 20
- Cell 20/18
- Cell 20/18/19
- Cell 20/18/19/17
- Cell 20/18/19/17/16
- Cell 20/18/19/17/16/15

Convert Separation Berm to Perimeter Berm

- 1.1 Install Cut-off-Wall at outside toe-of-slope of the separator berm
- 1.2 Install perimeter berm
- 1.3 Install 3-foot compacted clay liner
- 1.4 Remove separator berm geosynthetics and clay
- 1.5 Install perimeter berm geosynthetics

NOTE: Sheet to be added.

15.06 RMU-2 Landfill Closure (6-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
Waste Cover Area Parameters	38.5 acres = 1,677,060 SF = 186,340 SY				= 62,113 BCY @ 1' deep	
1-Cell Scenario (Cell 20)	6.9 6.9 acres = 300,564 SF = 33,396 SY				= 11,132 BCY @ 1' deep	Includes slope correction = 5,566 BCY @ 0.5' deep = 16,698 BCY @ 1.5' deep
2-Cell Scenario (Cells 18,20)	13.1 13.1 acres = 570,636 SF = 63,404 SY				= 21,135 BCY @ 1' deep	= 10,567 BCY @ 0.5' deep = 31,702 BCY @ 1.5' deep
3-Cell Scenario (Cells 18,20,19)	19.5 19.5 acres = 849,420 SF = 94,380 SY				= 31,460 BCY @ 1' deep	= 15,730 BCY @ 0.5' deep = 47,190 BCY @ 1.5' deep
4-Cell Scenario (Cells 18,20,19,17)	25.4 25.4 acres = 1,106,424 SF = 122,936 SY				= 40,979 BCY @ 1' deep	= 20,489 BCY @ 0.5' deep = 61,468 BCY @ 1.5' deep
5-Cell Scenario (Cells 18,20,19,17,16)	31.9 31.9 acres = 1,389,564 SF = 154,396 SY				= 51,465 BCY @ 1' deep	= 25,733 BCY @ 0.5' deep = 77,198 BCY @ 1.5' deep
6-Cell Scenario (Cells 18,20,19,17,16,15)	38.5 38.5 acres = 1,677,060 SF = 186,340 SY				= 62,113 BCY @ 1' deep	= 31,056 BCY @ 0.5' deep = 93,170 CY @ 1.5' deep
Perimeter Ditch	6,500 linear feet					BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material
Drainage Tile System	16,400 linear feet			16,400/38.5 = 426 LF/acre		
Material Pre-Qualification and Construction Testing Frequencies from RMU-2 Quality Assurance Manual and Technical Specifications (2013)						
15.06.1 Final Waste Cover Grading					production rate = 250 cy/hr - based upon max of 12 inch depth	
Volume of Material to be Graded					62,113 BCY plus 25% comp fact = 77,641 LCY x 0% offsite mat'l = 0 LCY	no add'l mat'l; levelling/grading of existing waste pile only
Waste Grading	38.5	acre	\$5,000.00	\$192,500	38.5 acres	Contractor Rates/Site experience
Subt - Grading Final Waste Cover				\$192,500	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
15.06.2 Equipment Decontamination					production rate = 4 hours per unit with 2 man crew: 6 pieces of equipment	
Laborer	48	hours	\$39.00	\$1,872	6 units @ 4 hrs/unit = 24 hours @ 2 pers/crew = 48 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Cleaning Solvent	6	gal	\$4.00	\$24	6 units @ 1 gal/unit = 6 gallons	site experience
Pressure Washer	24	hours	\$4.04	\$97	6 units @ 4 hrs/unit = 24 hours @ 1 units/crew = 24 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
PCB Solids/Debris Transport	4.8	mile	\$3.50	\$17	1 drum Solids/debris @ 80 drums/load = 0.0125 loads @ 385 miles/load = 4.8 miles	Rate: transporters quote/site experience
PCB Solids/Debris Disposal	1	drum	\$100.00	\$100	1 drum Solids/debris	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing
Subt - Equipment Decontamination				\$2,110		
15.06.3 Decon Water Samp/Dispose					production rate = 0.5 hours/sample for two techs	
Technician	1	hours	\$38.00	\$38	1.0 samp @ 0.5 hr/samp = 0.5 hours @ 2 pers/crew = 1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
VOC Analysis (EPA 624)	1	samp	\$105.00	\$105	1.0 areas @ 1.0 samp/area = 1.0 samples	analytical price: average of three quotes
On-site Water Disposal	1200	gal	\$0.0313	\$38	6 units @ 200 gal/unit/wa = 1200 gallons	200 gallons per unit/site experience
Subt - Decon Water Samp/Disposal				\$181		
15.06.4 PCB Equipment Wipe					production rate = 0.5 hours/sample for two techs; 2 wipe samples per unit/site experience	
Technician	12	hours	\$38.00	\$456	12.0 samp @ 0.5 hr/samp = 6.0 hours @ 2 pers/crew = 12.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
PCB Analysis (SW 8081/8082)	12	samp	\$83.33	\$1,000	6 units @ 2 samp/unit = 12.0 samples	analytical price: average of three quotes
Subt - PCB Wipe				\$1,456		
15.06.5 Perimeter Ditch Spreading					Included in 15.06.6	
Subt - Spreading Ditch Fill				\$0.00		
15.06.6 Perimeter Road/Ditch Compaction					Includes ditch excavation & road placement compaction	2010 Average of two bids
Subt - Compact Fin'l Cover/Ditch	6500	LF	\$12.00	\$78,000	Liner feet	
15.06.7 Final Cover/Ditch Inspection					Included in CQA 15.06.27	
Subt - Inspecting Final Cover/Ditch				\$0		
(Subt: Assemblies 15.06.1 thru 15.06.7)				\$274,246	grading, compacting, & inspecting final waste pile layer; decon & testing of equipment	waste cover area

NOTE: Sheet to be added.

15.06 RMU-2 Landfill Closure (6-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.06.8 Grading Layer					Based on 2009 Design & 38.5 acres to be closed	Grading layer 0.5 feet thick
General Fill	38821	CY	\$11.00	\$427,031	31,057 BCY plus 25% comp fact = 38,821 LCY x 100% offsite mat'l = 38,821 LCY	
General Fill Place/Compact	38821	CY	\$10.00	\$388,210	31,057 BCY plus 25% comp fact = 38,821 LCY x 100% offsite mat'l = 38,821 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Grading Layer Surface Prep	38.5	acre	\$10,000.00	\$385,000	38.5 acres	Site Experience
Subt - Grading Layer				\$1,200,241		
15.06.9 Cover Geosynthetic Clay Liner					Based on 2009 Design & 38.5 acres to be closed	
GCL Material	2084612	SF	\$0.46	\$958,922	1,677,690 SF plus 25% lap factor = 2,084,612 SF	2011 Actual Cost per SQFT including shipping & tax
GCL Installation	2084612	SF	\$0.35	\$729,614	1,677,690 SF plus 25% lap factor = 2,084,612 SF	2010 Quoted price from CETCO
Subt - GCL				\$1,688,536		
(Subt: Assemblies 15.06.8 thru 15.06.9)				\$2,888,777	spread and compact grading layer (0.5' offsite material) and install of impervious GCL	cap cover area
15.06.10 40-Mil Liner					production rate = 250 SF/Hr,	
40-Mil Polymeric Liner	2084612	SF	\$0.21	\$437,769	1,677,690 SF plus 25% lap factor = 2,084,612 SF	2010 Actual Cost per SQFT including tax & shipping
40-Mil Polymeric Liner Installation	2084612	SF	\$0.46	\$958,922	1,677,690 SF plus 25% lap factor = 2,084,612 SF	2010 Quoted price from CETCO
Subt - 40-Mil Liner				\$1,396,690		
15.06.11 Liner Anchor Trench						
Anchor Trench	38.5	acres	\$1,000.00	\$38,500	38.5 acres remaining	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Anchor Trench				\$38,500	includes labor & equipment for trenching, backfilling, and compacting (3' x 1.5')	
15.06.12 Geocomposite Drainage Layer					production rate = 5,000 SF/Hr, RSM/UP p. 9-83 (33-08-0513)	
Geocomposite Drainage Layer	2084612	SF	\$0.38	\$792,153	1,677,690 SF plus 25% lap factor = 2,084,612 SF	2011 Actual Blended cost (TN240 & TN350) including shipping & handling
Geocomposite Drainage Layer Install	2084612	SF	\$0.32	\$667,076		2010 Quoted price from CETCO
Subt - Geocomposite Layer				\$1,459,228		
15.06.13 Geosynthetic Liner Testing					QC testing included in Assem 15.06.10; see assembly 15.06.27 for QA Monitoring	
Subt - Liner Testing			\$0	\$0	field testing crew required to work concurrently with liner placement crew in Assem 15.06.10	
(Subt: Assemb 15.06.10 thru 15.06.13)				\$2,894,418	installing geosynthetics above impervious gcl layer	liner area: cap cover plus 25% lap factor
15.06.14 Unclassified Fill					depth = 1.5 feet (in one 18" lift) for final cover	
General Fill - offsite source	116462	LCY	\$11	\$1,281,082	93,170 BCY plus 25% comp fact = 116,462 LCY x 100% offsite mat'l = 116,462 LCY	Actual Quoted Cost 2011 (Tri-C, Inc.)
Subt - Spreading Unclassified Fill				\$1,281,082	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
15.06.15 Compacting Unclassified Fill					Compaction of one 1.5 feet lift	
Place/Spread/Compact Unclass. Fill	116462	LCY	\$10	\$1,164,620	93,170 BCY plus 25% comp fact = 116,462 LCY x 100% offsite mat'l = 116,462 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Compacting Unclass. Fill				\$1,164,620		
15.06.16 Unclassified Fill Testing						
Subt - Unclassified Fill Testing				\$0	Included in Assemb 15.06.27 QA/QC Monitoring	

NOTE: Sheet to be added.

15.06 RMU-2 Landfill Closure (6-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.06.17 Unclassified Fill Test Fill						
					Assume two sources of unclassified fill	
Test Fill Construction	2	each	\$12,000	\$24,000	1 test fill/source @ 2 source/38.5 acres = 2 test fills	Actual Cost 2011 (Tri-C, Inc.)
Test Fill QA Testing/Reporting	2	each	\$8,000	\$16,000		Actual Cost 2011 (Ensol, Inc.)
Subt - Unclassified Fill Test Fill				\$40,000		
(Subt: Assemb 15.06.14 thru 15.06.17)				\$2,485,702	spreading and compacting unclassified fill layer; 1.5-feet in depth using 100% offsite material	cap cover area
15.06.18 Spreading Topsoil						
					depth = 0.5 feet	
Topsoil	38821	LCY	\$15.00	\$582,315	31,057 BCY plus 25% comp fact = 38,821 LCY x 100% offsite mat'l = 38,821 LCY	Actual Cost 2011 (Tri-C, Inc.)
Spreading Topsoil	38821	LCY	\$11.00	\$427,031	31,057 BCY plus 25% comp fact = 38,821 LCY x 100% offsite mat'l = 38,821 LCY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Spreading Topsoil				\$1,009,346	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	Includes hydroseeding/mulch/fertilizer
15.06.19 Cap Vegetation						
Hydro Seeding w/Mulch & Fertilizer	0	MSF	0	\$0	Included in Assemb 15.06.18	
Erosion Control Matting	10000	SY	\$12.50	\$125,000	9000 LF x 10 ft wide rolls = 90,000 SF / 9 SF/SY = 10,000 SY	Average of two bids (3rd bid disqualified due to non-conformity)
Subt -Cap Vegetation				\$125,000		Drainage Tile System
(Subt: Assemb 15.06.18 thru 15.06.19)				\$1,134,346	placing topsoil and hydro seeding with mulch and fertilizer	cap cover area
15.06.20 Downflume Installation						
Rip Rap Downflume (grouted)	3	each	\$23,625.00	\$70,875	38.5 acres @ 3 downflume = 3 downflume	Average of two bids (3rd bid disqualified due to non-conformity)
Subt - Install Downflume				\$70,875		
15.06.21 Cap Drainage Syst Install'n						
					production rate = 47.5 LF/hr, RSM/SWL p. 77 (02510-850-0200)	
Install Cap Drainage System	16400	LF	\$15.06	\$246,984	38.5 acres	Actual Cost 2011 (Tri-C, Inc.)
Subt - Install Cap Drainage System				\$246,984		Average of two bids (3rd bid disqualified due to non-conformity)
(Subt: Assemb 15.06.20 thru 15.06.21)				\$317,859	downflume and drainage system installation	cap cover area
15.06.22 Groundwater Monitoring						
Monit'g Events & Samples/Event					production rate = 0.5 hours per sample for two techs; 29 wells; 2 events/12 months	
Technician	59.4	hours	\$38.00	\$2,257	0.0 quart'ly + 56.0 semi-ann + 1.0 b-ann'l x 1.05 each = 59.4 samp	includes 5% QA sampling
Sampling Supplies	59.4	samp	\$25.00	\$1,485	59.4 samp @ 0.5 hrs/samp = 29.7 hours @ 2 units/crew = 59.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
VOC Analysis (EPA 624)	59.4	samp	\$105.00	\$6,237	59.4 samples	bottles, shipping supplies
Subt - GW Mon During Closure				\$9,979	groundwater monitoring for twelve (12) months	Average of three quotes
(Subt: Assembly 15.06.22)				\$9,979		
15.06.23 Leachate Management						
					leachate collected from surface and sub-surface projected to be mildly contaminated	
Onsite Aqueous Treatment	16528780	gals	\$0.0178	\$294,212	38.5 acres x 429,293 gal/acre = 16527780 gals	17,000,000 gal = maximum volume of leachate for RMU-1 (39.6 acres) in past 10 years over 12 months closure. 17,000,000/39.6 = 429,293 gal/acre
Electricity for 40-gpm Pumps	0	kwh	\$0.10	\$0	2 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 0.0 pumps = 0.0 kwhs	40 gpm pump = 2 hp; 1.0 hph = .75 kwh
Electricity for 100-gpm Pumps	26280	kwh	\$0.10	\$2,628	5 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 6.0 pumps = 26,280 kwhs	100 gpm pump = 5 hp; 1.0 hph = .75 kwh
Electricity for 600-gpm Pump	26280	kwh	\$0.10	\$2,628	30 kw/pump x 8760 hrs/1.0 yr x 10% time on @ 1.0 pump = 157,680 kwhs	600 gpm pump = 30 hp; 1.0 hph = .75 kwh
200 GPM Transfer Pump	1	each	\$6,194.00	\$6,194	1.0 pump =	2004 DEC Rate * Implicit Deflator
Fuel for 200-gpm Transfer Pump	1800	gals	\$4.50	\$8,100	2 gal/hr x 900 hrs/year x 1.0 pump = 1800 gals	fuel for transfer pump
Pump/Motor Replace/Maint/Repair	2	each	\$2,294.00	\$4,588	8 pumps x 25% factor = 2.0 events	2004 DEC Rate * Implicit Deflator
Subt - Leachate Management				\$318,350	leachate collection and management for twelve months	

NOTE: Sheet to be added.

15.06 RMU-2 Landfill Closure (6-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.06.24 Leachate Monitoring						
					12 months of leachate monitoring	Sampling Frequency from Schedule I, Exhibit F, Condition G
Technician	72	hours	\$38.00	\$2,736	72.0 samp @ 0.5 hrs/samp = 36.0 hours @ 2 units/crew = 72.0 hours	
Sampling Supplies	72	samp	\$5.00	\$360	72.0 samples	bottles, shipping supplies
Primary Leachate: PP VOCs (epa 624)	25.2	samp	\$105.00	\$2,646	4 samp/yr x 6 cells x 1.0 years	1.05 QA req't = 25.2 samples analytical price: average of three quotes - permit specifications
Primary Leachate: PCBs (sw 8081)	25.2	samp	\$131.67	\$3,318	4 samp/yr x 6 cells x 1.0 years	1.05 QA req't = 25.2 samples analytical price: average of three quotes - permit specifications
Primary Leachate: PP Metals (sw 6010)	12.6	samp	\$155.00	\$1,953	2 samp/yr x 6 cells x 1.0 years	1.05 QA req't = 12.6 samples analytical price: average of three quotes - permit specifications
Secondary Leach: VOCs (epa 624)	25.2	samp	\$105.00	\$2,646	4 samp/yr x 6 cells x 1.0 years	1.05 QA req't = 25.2 samples analytical price: average of three quotes - permit specifications
Secondary Leach: PP Organics	6.3	samp	\$633.33	\$3,990	1 samp/yr x 6 cells x 1.0 years	1.05 QA req't = 6.3 samples analytical price: average of three quotes - permit specifications
Secondary Leach: PP Metals (sw 6010)	6.3	samp	\$155.00	\$977	1 samp/yr x 6 cells x 1.0 years	1.05 QA req't = 6.3 samples analytical price: average of three quotes - permit specifications
pH & conductivity	75.6	samp	\$15.00	\$1,134	12 samp/yr x 6 cells x 1.0 years	1.05 QA req't = 75.6 samples analytical price: average of three quotes - permit specifications
Shipping	75.6	each	\$5.00	\$378		
Subt - Leachate Monitoring				\$20,138	leachate collection and management for twelve months	CWM estimate for leachate monitoring for 6 months
(Subt: Assemb 15.06.23 thru 15.06.24)				\$338,488		
15.06.25 PPE Usage & H&S Planning						
					Level C during waste grading, grading layer installation, and decon only.	
PPE Usage - Level D	1925	days	\$0.00	\$0	50 man days/ acre x 38.5 acres = 1925 days	50 man days/acre to complete closure
PPE Usage - Mod Level C	0	days	\$9.00	\$0	0 days for Modified Level C	
PPE Usage - Level C	385	days	\$25.00	\$9,625	5.0 days/acre x 38.5 acres x 2 crew = 385 days	5 days for waste grading per acre, grading layer installation and equip decon
Health & Safety Officer	462	hours	\$75.00	\$34,650	18,480 hours @ 2.5% hr/hr = 462 hours	60 man days/acre * 8 hrs * 38.5 acres = 18480 hrs
Subt - PPE Usage/H&S Planning				\$44,275		
15.06.26 Supervision						
Foreman	0	hours	\$65.00	\$0	Foreman included in per acre unit costs	
Site Project Manager	0	hours	\$75.00	\$0	Included in Construction Management costs	
Construction Management	38.5	acre	\$4,500.00	\$173,250	\$4,500 per acre @ 38.5 acres	
Subtotal - Supervision				\$173,250		
15.06.27 QA/QC Monitoring/Certification						
<i>Final Cover</i>						
GCL Conformance Testing	21.0	test	\$235.00	\$4,935	1677060 SF plus 25% lap factor = 2,084,612 SF @ 1 test/100000 SF = 21.0 tests	Actual Costs 2011 (TRI Environmental)
40-Mil Liner Conformance Testing	21.0	test	\$98.00	\$2,058	1677060 SF plus 25% lap factor = 2,084,612 SF @ 1 test/100000 SF = 21.0 tests	Actual Costs 2011 (TRI Environmental)
Geocomposite Liner Conformance Testing	21.0	test	\$300.00	\$6,300	1677060 SF plus 25% lap factor = 2,084,612 SF @ 1 test/100000 SF = 21.0 tests	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover GCL/40-Mil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover 40-Mil/Geocomp)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Cover Geocomp/Soil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
QA/QC Monitoring/Certification	38.5	acre	\$25,700.00	\$989,450	38.5 acres	Actual cost 2010/2011 (Ensol, Inc.)
Subtotal - Certification				\$1,022,963		
(Subt: Assemb 15.06.25 thru 15.06.27)				\$1,240,488	supervision, health & safety, and certification	
15.06 RMU-2 Landfill Closure				\$11,584,303	CWM estimate based on 38.5 acres	

The Total Labor and Maintenance Costs per year to run the AWT Facility was calculated under the Site Wide Post Closure Plan (Assembly 13.0) and will remain constant regardless of whether or not RMU-2 is generating leachate; the labor, maintenance and number of days per year to run the facility will be the same. Therefore, no costs are associated with labor and maintenance.

NOTE: Sheet to be added.

15.06 RMU-2 Landfill Closure (6 Cells)			
Cost Category	Proposed Percent of Direct Cost	Proposed 2011 Cost	Cost Range
Direct Costs/Basic Closure		\$11,584,303	
Site Activity Management Costs	7.00%	\$810,901	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	\$463,372	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	\$695,058	note: DEC uses 6%
Engineering During Construction	2.00%	\$231,686	note: DEC uses 2%
General Contractor Profit	6.00%	\$695,058	Note DEC adds 6%
Indirect Costs/Basic Closure	25.00%	\$2,896,076	
Subtotal - RMU-2 Landfill Closure		\$14,480,379	
Plus Contingency	10.00%	\$1,448,038	CWM and DEC 10%
Total - RMU-2 Landfill Closure		\$15,928,417	

Cost Per Acre \$413,725.12 CWM estimate based on 38.5 acres

Cost References:

- "RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
- "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
- "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

Assumptions:

- 0.5 Grading Layer (Unclassified/General Fill)
- Geosynthetic Clay Liner
- 40 mil roughened HDPE geomembrane
- Geocomposite drainage layer
- Eighteen inches (1.5 feet) of unclassified/general fill
- Six inches (0.5 feet) topsoil and vegetative cover

Closure Scenarios - Assume Construction Sequence
Cell 20, 18, 19, 17, 16, 15

Closure Sequence

- Cell 20
- Cell 20/18
- Cell 20/18/19
- Cell 20/18/19/17
- Cell 20/18/19/17/16
- Cell 20/18/19/17/16/15

Waste Area of RMU-2 (6 cells) : 38.5

Cell #	Acres	Cummulative Acres
20	6.9	6.9
18	6.2	13.1
19	6.4	19.5
17	5.9	25.4
16	6.5	31.9
15	6.6	38.5
Total Area	38.5	acres

Includes slope correction

NOTE: Sheet to be added.

15.A RMU-2 Landfill Closure 1-Cell (Berm)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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Waste Cover Area Parameters	38.5 acres = 1,677,060 SF = 186,340 SY	= 62,113 BCY @ 1' deep	Includes slope correction			
1-Cell Scenario (Cell 20)	6.9 6.9 acres = 300,564 SF = 33,396 SY	= 11,132 BCY @ 1' deep	= 5,566 BCY @ 0.5' deep	= 16,698 BCY @ 1.5' deep		BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material
2-Cell Scenario (Cells 18,20)	13.1 13.1 acres = 570,636 SF = 63,404 SY	= 21,135 BCY @ 1' deep	= 10,567 BCY @ 0.5' deep	= 31,702 BCY @ 1.5' deep		
3-Cell Scenario (Cells 18,20,19)	19.5 19.5 acres = 849,420 SF = 94,380 SY	= 31,460 BCY @ 1' deep	= 15,730 BCY @ 0.5' deep	= 47,190 BCY @ 1.5' deep		
4-Cell Scenario (Cells 18,20,19,17)	25.4 25.4 acres = 1,106,424 SF = 122,936 SY	= 40,979 BCY @ 1' deep	= 20,489 BCY @ 0.5' deep	= 61,468 BCY @ 1.5' deep		
5-Cell Scenario (Cells 18,20,19,17,16)	31.9 31.9 acres = 1,389,564 SF = 154,396 SY	= 51,465 BCY @ 1' deep	= 25,733 BCY @ 0.5' deep	= 77,198 BCY @ 1.5' deep		
6-Cell Scenario (Cells 18,20,19,17,16,15)	38.5 38.5 acres = 1,677,060 SF = 186,340 SY	= 62,113 BCY @ 1' deep	= 62,113 BCY @ 1' deep	= 93,170 CY @ 1.5' deep		

Liner Feet of Separator Berm Converted to Perimeter Berm		Cut-Off-Wall Length	
1-Cell Scenario (Cell 20)	575	1-Cell Scenario (Cell 20)	445
2-Cell Scenario (Cells 18,20)	1490	2-Cell Scenario (Cells 18,20)	1300
3-Cell Scenario (Cells 18,20,19)	1030	3-Cell Scenario (Cells 18,20,19)	960
4-Cell Scenario (Cells 18,20,19,17)	575	4-Cell Scenario (Cells 18,20,19,17)	515
5-Cell Scenario (Cells 18,20,19,17,16)	600	5-Cell Scenario (Cells 18,20,19,17,16)	500
6-Cell Scenario (Cells 18,20,19,17,16,15)	N/A	6-Cell Scenario (Cells 18,20,19,17,16,15)	N/A

Separator Berm, Perimeter Berm, and Cut-Off-Wall Lengths from RMU-2 Permit Drawing No. 5
 Perimeter Ditch 2,290 linear feet 585+585+560+560 = 2,290
 Drainage Tile System 2,939 linear feet 6.9 acres * 426 LF/acre = 2,939 LF
 Material Pre-Qualification and Construction Testing Frequencies from RMU-2 Quality Assurance Manual and Technical Specifications (2013)

15.A.1 Cut-off-Wall Excavation				Excavation assume 80 CY yards per hour	
Cut-off-Wall Length	445	feet		Assume Cut-Off-Wall 3 ft wide by 10 ft deep	
Cut-off-Wall Volume	494.4	CY		Cell 20 = 445 ft x 3 ft x 10 ft = 13,350 CF = 494.4 CY	
Laborer	6.2	hours	\$39.00	\$242 494.4 CY @ 80 CY/hr = 6.2 hours @ 1 units/crew = 6.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	6.2	hours	\$45.00	\$279 494.4 CY @ 80 CY/hr = 6.2 hours @ 1 units/crew = 6.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	6.2	hours	\$84.09	\$521 494.4 CY @ 80 CY/hr = 6.2 hours @ 1 units/crew = 6.2 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Driver	6.2	hours	\$45.00	\$279 494.4 CY @ 80 CY/hr = 6.2 hours @ 1 units/crew = 6.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dump Truck (20-cy load)	6.2	hours	\$24.78	\$154 494.4 CY @ 80 CY/hr = 6.2 hours @ 1 units/crew = 6.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Cut Off Wall Excavation				\$1,475	
15.A.2 Slurry Wall Installation				Assume 10 ft deep and 3 ft wide	
Slurry Wall Length	445	LF		445 LF * 10 ft * 3ft = 13,350 CF	Backfilled with 3000psi concrete, no reinforcing steel. Includes O&P.
Slurry Wall Installation	13350	CF	\$23.50	\$313,725	Taken from 2009 Means Section 31 56 23.2
Subt - Slurry Wall Installation				\$313,725	
(Subt: Assemb 15.A.1 thru 15.A.2)				\$315,200	

PERIMETER BERM:

15.A.3 Pre-Qual Gnl Fill Mat'l Testing				1 per source 10 ft tall	
Perimeter Berm Length	575	FT		Cell 20 Perimeter Berm 575 feet in length at 25' wide at top and 2:1 outside slope and 3:1 inside slope	20.7 CY/ft
Calculation of LCYs in Berm Area	14878	LCY		11,902 BCY x 1.25 swell factor = 14,878 LCY	
Technician	1	hour	\$38.00	\$38 1 samp @ 0.5 hrs/samp = 0.5 hours @ 2.0 units/crew = 1 hours	technician rate: rate 2011 3rd party quote
Moisture Content	1	test	\$12.00	\$12 14,878 LCY @ 1 test per source = 1.0 test	Actual Costs 2011 (TRI Environmental)
Sieve Analysis w/o hydrometer	1	test	\$70.00	\$70 14,878 LCY @ 1 test per source = 1.0 test	Actual Costs 2011 (TRI Environmental)
Atteberg Limits	1	test	\$65.00	\$65 14,878 LCY @ 1 test per source = 1.0 test	Actual Costs 2011 (TRI Environmental)
Proctor Compaction	1	test	\$120.00	\$120 14,878 LCY @ 1 test per source = 1.0 test	Actual Costs 2011 (TRI Environmental)
Direct Shear	1	test	\$500.00	\$500 14,878 LCY @ 1 test per source = 1.0 test	Actual Costs 2011 (TRI Environmental)
Subt - Pre-Qual Berm Mat'l Testing				\$805	

NOTE: Sheet to be added.

15.A RMU-2 Landfill Closure 1-Cell (Berm)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.A.4 Berm General Fill Spreading						
					production rate = 125 cy/hr, RSM/SWL p. 57 (02315-505-0010); depth = 10 feet (in 12-inch lifts)	
Laborer	59.5	hour	\$39.00	\$2,321	14,878 LCY @ 125 LCY/hr = 119.0 hours @ 0.5 units/crew = 59.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	238	hour	\$45.00	\$10,710	14,878 LCY @ 125 LCY/hr = 119.0 hours @ 2 units/crew = 238 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader, Track	119	hour	\$30.03	\$3,574	14,878 LCY @ 125 LCY/hr = 119.0 hours @ 1 units/crew = 119.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dozer (200 hp)	119	hour	\$56.38	\$6,709	14,878 LCY @ 125 LCY/hr = 119.0 hours @ 1 units/crew = 119.0 hours	RSM/HC p. 468 (line item 01 54 33 20 4260)
Dump Truck (20-ton load)	238	hour	\$24.78	\$5,898	14,878 LCY @ 125 LCY/hr = 119.0 hours @ 2 units/crew = 238 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Driver	238	hour	\$45.00	\$10,710	14,878 LCY @ 125 LCY/hr = 119.0 hours @ 2 units/crew = 238 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
General Fill	14878	LCY	\$11.00	\$163,658	11,902 BCY plus 25% comp fact = 14,878 LCY x 100% offsite mat'l = 14,878 LCY	3rd party quote for RMU-1 final cover construction Assb. 14.0
Subt - Spreading Berm Gnl Fill				\$203,579	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
15.A.5 Berm Gnl Fill Compaction						
					production rate = 165 cy/hr, RSM/SWL p. 52 (02315-300-5640); depth = 30 feet (in 12-inch lifts)	
Laborer	45.1	hour	\$39.00	\$1,759	14,878 LCY @ 165 LCY/hr = 90.2 hours @ 0.5 units/crew = 45.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	112.8	hour	\$45.00	\$5,076	14,878 LCY @ 165 LCY/hr = 90.2 hours @ 1.25 units/crew = 112.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Landfill Compactor (220 hp)	902	hour	\$75.60	\$68,191	14,878 LCY @ 165 LCY/hr = 90.2 hours @ 1 units/crew = 90.2 hours	RSM/HC p. 468 (line item 01 54 33 20 3300)
Vibratory Steel Drum, Diesel	9.02	hour	\$25.70	\$232	14,878 LCY @ 165 LCY/hr = 90.2 hours @ 10.0% top lift only = 9.02 hours	RSM/HC p. 468 (line item 01 54 33 20 3320)
Subt - Compacting Berm Gnl Fill				\$75,258	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
15.A.6 General Fill Testing						
					one samples per 600 CY; 10 twelve-inch lifts; 10 feet of depth; 0.25 hrs/samp for 1 techs	
Technician	6.2	hour	\$38.00	\$236	24.8 samp @ 0.25 hrs/samp = 6.2 hours @ units/crew = 6.2 hours	technician rate: rate 2011 3rd party quote
Insitu Nuclear Density Test	24.8	test	\$39.00	\$967	14,878 BCY @ 1 sample per 600 CY = 24.8 tests	
Subt - General Fill Testing				\$1,203		
(Subt: Assemb 15.A.3 thru 15.A.6)				\$280,845		

15.A.7 Pre-Qual Clay Mat'l Testing						
					one sample per 1,000 LCY of base liner area	
Calculation of LCYs in Cap Area					5,578 BCY @ 3' depth x 1.35 swell factor = 7,530.3 LCY	9.7 CY/LF @ 575 LF
Technician	8.0	hour	\$38.00	\$304	8.0 samp @ 0.5 hrs/samp = 4.0 hours @ 2.0 units/crew = 8 hours	technician rate: rate 2011 3rd party quote
Moisture Content	8.0	test	\$12.00	\$96	7,530 LCY @ 1 test per 1000 LCY = 8.0 tests	Actual Costs 2011 (TRI Environmental)
Sieve Analysis w/o hydrometer	8.0	test	\$70.00	\$560	7,530 LCY @ 1 test per 1000 LCY = 8.0 tests	Actual Costs 2011 (TRI Environmental)
Sieve Analysis w/ hydrometer	2.0	test	\$100.00	\$200	7,530 LCY @ 1 test per 5000 LCY = 2.0 tests	Actual Costs 2011 (TRI Environmental)
Atteberg Limits	8.0	test	\$65.00	\$520	7,530 LCY @ 1 test per 1000 LCY = 8.0 tests	Actual Costs 2011 (TRI Environmental)
Proctor Compaction	2.0	test	\$120.00	\$240	7,530 LCY @ 1 test per 5000 LCY = 2.0 tests	Actual Costs 2011 (TRI Environmental)
Laboratory Hydraulic Conductivity	1.0	test	\$198.00	\$198	7,530 LCY @ 1 test per Source = 1.0 tests	Actual Costs 2011 (TRI Environmental)
Direct Shear	2.0	test	\$500.00	\$1,000	7,530 LCY @ 1 test per 5000 LCY = 2.0 tests	Actual Costs 2011 (TRI Environmental)
Subt - Pre-Qual Clay Mat'l Testing				\$3,118		

NOTE: Sheet to be added.

15.A RMU-2 Landfill Closure 1-Cell (Berm)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.A.8 Clay Test Pad Testing					production rate = 125 cy/hr, RSM/SWL p. 57 (02315-505-0010); depth = 2 feet (in 6-inch lifts)	
<i>Calculation of Test Pad Area</i>					60 ft. long x 20 ft. wide x 2 ft. deep = 2400 BCF = 89 BCY	
Laborer	1.0	hours	\$39.00	\$39	120.0 LCY @ 125 LCY/hr = 1.0 hours @ 1 units/crew = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	2.9	hours	\$45.00	\$131	120.0 LCY @ 125 LCY/hr = 1.0 hours @ 3 units/crew = 2.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader, Track	1.0	hours	\$30.03	\$30	120.0 LCY @ 125 LCY/hr = 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dozer (200 hp)	1.0	hours	\$56.38	\$56	120.0 LCY @ 125 LCY/hr = 1.0 hours @ 1 units/crew = 1.0 hours	RSM/HC p. 468 (line item 01 54 33 20 4260)
Landfill Compactor (220 hp)	1.0	hours	\$75.60	\$76	120.0 LCY @ 125 LCY/hr = 0.0 hours @ 1 units/crew = 0.0 hours	RSM/HC p. 468 (line item 01 54 33 20 3300)
Clay Fill	120.0	LCY	\$18.00	\$2,160	88.9 BCY plus 35% comp fact = 120.0 LCY x 100% offsite mat'l = 120.0 LCY	2009 RSMMeans \$9.85 Borrow and load + \$8.15 haul.
Technician	76.0	hour	\$38.00	\$2,888	76.0 samp @ 0.5 hrs/samp = 38.0 hours @ 2 units/crew = 76.0 hours	technician rate: rate 2011 3rd party quote
Boutwell Insitu Permeability Test	2.0	test	\$550.00	\$1,100	2 req'd by permit	Equipment charges
Insitu Nuclear Density Test	32.0	test	\$39.00	\$1,248	32 req'd by permit	
Moisture Content	6.0	test	\$12.00	\$72	6 req'd by permit	Actual Costs 2011 (TRI Environmental)
Sieve Analysis w/o hydrometer	6.0	test	\$70.00	\$420	6 req'd by permit	Actual Costs 2011 (TRI Environmental)
Atteberg Limits	6.0	test	\$65.00	\$390	6 req'd by permit	Actual Costs 2011 (TRI Environmental)
Proctor Compaction	6.0	test	\$120.00	\$720	6 req'd by permit	Actual Costs 2011 (TRI Environmental)
Laboratory Hydraulic Conductivity	6.0	test	\$198.00	\$1,188	6 req'd by permit	Actual Costs 2011 (TRI Environmental)
Soil Classification	6.0	test	\$10.00	\$60	6 req'd by permit	Actual Costs 2011 (TRI Environmental)
Organic Content	6.0	test	\$55.00	\$330	6 req'd by permit	Actual Costs 2011 (TRI Environmental)
Subt - Clay Test Pad Testing				\$10,908		
15.A.9 Clay Layer Spreading					production rate = 125 cy/hr, RSM/SWL p. 57 (02315-505-0010); depth = 3 feet (in 6-inch lifts)	
Laborer	30.1	hours	\$39.00	\$1,174	7,530 LCY @ 125 LCY/hr = 60.2 hours @ 0.5 units/crew = 30.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	120.4	hours	\$45.00	\$5,418	7,530 LCY @ 125 LCY/hr = 60.2 hours @ 2 units/crew = 120.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader, Track	60.2	hours	\$30.03	\$1,808	7,530 LCY @ 125 LCY/hr = 60.2 hours @ 1 units/crew = 60.2 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dozer (200 hp)	60.2	hours	\$56.38	\$3,394	7,530 LCY @ 125 LCY/hr = 60.2 hours @ 1 units/crew = 60.2 hours	RSM/HC p. 468 (line item 01 54 33 20 4260)
Clay Fill	7530.0	LCY	\$18.00	\$135,540	5,578 BCY plus 35% comp fact = 7,530 LCY x 100% offsite mat'l = 7,530 LCY	
Subt - Spreading Clay Layer				\$147,334	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
15.A.10 Clay Layer Compaction					production rate = 165 cy/hr, RSM/SWL p. 52 (02315-300-5640); depth = 3 feet (in 6-inch lifts)	
Laborer	22.8	hours	\$39.00	\$889	7,530 LCY @ 165 LCY/hr = 45.6 hours @ 0.5 units/crew = 22.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	57.0	hours	\$45.00	\$2,565	7,530 LCY @ 165 LCY/hr = 45.6 hours @ 1.25 units/crew = 57 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Landfill Compactor (220 hp)	22.8	hours	\$75.60	\$1,724	7,530 LCY @ 165 LCY/hr = 45.6 hours @ 1 units/crew = 22.8 hours	RSM/HC p. 468 (line item 01 54 33 20 3300)
Vibratory Steel Drum, Diesel	7.6	hours	\$25.70	\$195	7,530 LCY @ 165 LCY/hr = 45.6 hours @ 16.7% top lift only = 7.6 hours	RSM/HC p. 468 (line item 01 54 33 20 3320)
Subt - Compacting Clay Layer				\$5,373	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
15.A.11 Clay Layer Testing					nine samples per 6-inch lift per acre; 6 six-inch lifts; three feet of depth; 0.25 hrs/samp for 2 techs	
Technician	32.4	hours	\$38.00	\$1,231	64.8 samp @ 0.25 hrs/samp = 16.2 hours @ 2 units/crew = 32.4 hours	technician rate: rate 2011 3rd party quote
Insitu Nuclear Density Test	64.8	test	\$39.00	\$2,527	1.2 acres x 6 6-in lifts @ 9 tests per acre per lift = 64.8 tests	
Laboratory Hydraulic Conductivity	7.2	test	\$198.00	\$1,426	1.2 acres x 6 6-in lifts @ 1 tests per acre per lift = 7.2 tests	Actual Costs 2011 (TRI Environmental)
Sieve Analysis w/o hydrometer	7.2	test	\$70.00	\$504		Actual Costs 2011 (TRI Environmental)
Atteberg Limits	7.2	test	\$65.00	\$468		Actual Costs 2011 (TRI Environmental)
Moisture Percent	7.2	test	\$12.00	\$86		Actual Costs 2011 (TRI Environmental)
Subt - Clay Layer Testing				\$6,242	spreading and compacting impervious clay layer; 3-feet in depth using 100% offsite material	
(Subt: Assemb 15.A.7 thru 15.A.11)				\$172,975		

NOTE: Sheet to be added.

15.A RMU-2 Landfill Closure 1-Cell (Berm)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.A.12 Remove Separator Berm						
Separator Berm Length	445	LF			Excavation assume 80 CY yards per hour	
Separator Berm Volume	4138	CY			Assume 10ft High x 5ft wide at top x 2H:1V side slopes = 250 CF/LF /27= 9.3 CY/LF	
Calculation of LCYs in Berm Area	5173	LCY			4,138 BCY x 1.25 swell factor = 5,173 LCY	
Laborer	64.6	hours	\$39.00	\$2,519	5,173 CY @ 80 CY/hr = 64.6 hours @ 1 units/crew = 64.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	64.6	hours	\$45.00	\$2,907	5,173 CY @ 80 CY/hr = 64.6 hours @ 1 units/crew = 64.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	64.6	hours	\$84.09	\$5,432	5,173 CY @ 80 CY/hr = 64.6 hours @ 1 units/crew = 64.6 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Driver	64.6	hours	\$45.00	\$2,907	5,173 CY @ 80 CY/hr = 64.6 hours @ 1 units/crew = 64.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dump Truck (20-cy load)	64.6	hours	\$24.78	\$1,601	5,173 CY @ 80 CY/hr = 64.6 hours @ 1 units/crew = 64.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Disposal of geo synthetics	0	Ton	\$0.00	\$0	Assumed disposed in active cell	
Disposal of Operation stone	0	CY	\$0.00	\$0	Assumed disposed in active cell	
Clay soils	0	CY	\$0.00	\$0	Will be re-used	
Subt - Berm Removal				\$15,366		
(Subt: Assemb 15.A.12)				\$15,366		
15.A.13 Install perimeter berm Liner System						
<i>Base Liner</i>						
Interface Friction Testing (Base GCL/NW-textile)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Base GCL/80-Mil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Base 80-Mil/Geocomp)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Base Clay/80-Mil)	1	test	\$5,055.00	\$5,055	1 test per material type/source	Actual Costs 2011 (TRI Environmental)
Subtotal - Certification				\$20,220		
15.A.14 Secondary 80-mil Geomembrane						
Conformance Testing	1	test	\$98.00	\$98	575 FT long berm by 92 feet from top of slope to tie-in to base liner = 52,900 SF 66,125 SF @ 1 test/100K = 1.0 tests	Actual Costs 2011 (TRI Environmental)
Material	66125	SF	\$0.48	\$31,740	52,900 SF plus 25% lap factor = 66,125 SF	2011 Price Quote
Installation	66125	SF	\$0.83	\$54,884	52,900 SF plus 25% lap factor = 66,125 SF	2011 Price Quote
Subt - Secondary 80-mil Geomembrane				\$86,722		
15.A.15 Geocomposite						
Conformance Testing	1	test	\$300.00	\$300	66,125 SF @ 1 test/100K = 1.0 tests	Actual Costs 2011 (TRI Environmental)
Material	66125	SF	\$0.38	\$25,128	52,900 SF plus 25% lap factor = 66,125 SF	2011 Actual Blended cost (TN240 & TN350) including shipping & handling
Installation	66125	SF	\$0.32	\$21,160	52,900 SF plus 25% lap factor = 66,125 SF	2010 Average of two bids
Subt - Geocomposite				\$46,588		
15.A.16 Secondary Granular layer						
Quantity					production rate = 125 cy/hr, RSM/SWL p. 57 (02315-505-0010); depth = 1 foot (in one 12-inch lift) 1-foot thick granular layer: 445 ft cell floor by 50 ft width = 22,250 CF/27 = 824 CY	
Pre-Qualification Testing				\$0		
Laborer	6.6	hour	\$39.00	\$257	824 CY @ 125 LCY/hr = 6.6 hours @ 1.0 units/crew = 6.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	6.6	hour	\$45.00	\$297	824 CY @ 125 LCY/hr = 6.6 hours @ 1.0 units/crew = 6.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dozer (200 hp)	6.6	hour	\$56.38	\$372	824 CY @ 125 LCY/hr = 6.6 hours @ 1.0 units/crew = 6.6 hours	RSM/HC p. 468 (line item 01 54 33 20 4260)
Granular Fill	824	CY	\$27.53	\$22,685	824 CY @ 100% offsite mat'l = 824 CY @	
Subt - Secondary Granular Layer				\$23,611		

NOTE: Sheet to be added.

15.A RMU-2 Landfill Closure 1-Cell (Berm)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.A.17 Non-Woven Geotextile						
Conformance Testing	1	test	\$247.00	\$247	66,125 SF @ 1 test/100K = 1.0 tests	Actual Costs 2011 (TRI Environmental)
Material	66125	SF	\$0.16	\$10,580	52,900 SF plus 25% lap factor = 66,125 SF	
Installation	66125	SF	\$0.12	\$7,935	52,900 SF plus 25% lap factor = 66,125 SF	
Subt - Non-Woven Geotextile				\$18,762		
15.A.18 GCL						
					445 ft cell floor by 50 ft floor width & 15 ft up slope = 28,925 SF	
Conformance Testing	1	test	\$235.00	\$235	36,156 SF @ 1 test/100K = 1.0 tests	Actual Costs 2011 (TRI Environmental)
Material	36156	SF	\$0.46	\$16,632	28,925 SF plus 25% lap factor = 36,156 SF	2011 Actual Cost per SQFT including shipping & tax
Installation	36156	SF	\$0.35	\$12,655	28,925 SF plus 25% lap factor = 36,156 SF	2010 Average of two bids
Subt - GCL				\$29,521		
15.A.19 Primary 80-mil Geomembrane						
Conformance Testing	1	test	\$98.00	\$98	66,125 SF @ 1 test/100K = 1.0 tests	Actual Costs 2011 (TRI Environmental)
Material	66125	SF	\$0.48	\$31,740	52,900 SF plus 25% lap factor = 66,125 SF	2011 Price Quote
Installation	66125	SF	\$0.83	\$54,884	52,900 SF plus 25% lap factor = 66,125 SF	2011 Price Quote
Destructive Testing				\$0		
Subt - Primary 80-mil Geomembrane				\$86,722		
15.A.20 Geocomposite						
Conformance Testing	1	test	\$300.00	\$300	66,125 SF @ 1 test/100K = 1.0 tests	Actual Costs 2011 (TRI Environmental)
Material	66125	SF	\$0.38	\$25,128	52,900 SF plus 25% lap factor = 66,125 SF	2011 Actual Blended cost (TN240 & TN350) including shipping & handling
Installation	66125	SF	\$0.32	\$21,160	52,900 SF plus 25% lap factor = 66,125 SF	2010 Average of two bids
Subt - Geocomposite				\$46,588		
15.A.21 Granular layer						
Quantity					production rate = 125 cy/hr, RSM/SWL p. 57 (02315-505-0010); depth = 1 foot (in one 12-inch lift) 1-foot thick granular layer: 445 ft cell floor by 50 ft width = 22,250 CF/27 = 824 CY	
Pre-Qualification Testing				\$0		
Laborer	6.6	hour	\$39.00	\$257	824 CY @ 125 LCY/hr = 6.6 hours @ 1.0 units/crew = 6.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	6.6	hour	\$45.00	\$297	824 CY @ 125 LCY/hr = 6.6 hours @ 1.0 units/crew = 6.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dozer (200 hp)	6.6	hour	\$56.38	\$372	824 CY @ 125 LCY/hr = 6.6 hours @ 1.0 units/crew = 6.6 hours	RSM/HC p. 468 (line item 01 54 33 20 4260)
Material	824	CY	\$27.53	\$22,685	824 CY @ 100% offsite mat'l = 824 CY	
Subt - Primary Granular Layer				\$23,611		
15.A.22 Non-Woven Geotextile						
Conformance Testing	1	test	\$247.00	\$247	66,125 SF @ 1 test/100K = 1.0 tests	Actual Costs 2011 (TRI Environmental)
Material	66125	SF	\$0.16	\$10,580	52,900 SF plus 25% lap factor = 66,125 SF	
Installation	66125	SF	\$0.12	\$7,935	52,900 SF plus 25% lap factor = 66,125 SF	
Subt - Non-Woven Geotextile				\$18,762		

NOTE: Sheet to be added.

15.A RMU-2 Landfill Closure 1-Cell (Berm)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.A.23 Select Fill (Ops Layer)						
Quantity - Cell Floor					1-foot thick select fill layer: 445 ft cell floor by 50 ft width = 22,250 CF/27 = 824 CY	
Quantity - Side Slope					2-foot thick select fill layer: 575 ft cell side slope by 42 ft width = 48,300 CF/27 = 1,789 CY	
Pre-Qualification Testing				\$0		
Laborer	20.9	hour	\$39.00	\$815	2613 CY @ 125 LCY/hr = 20.9 hours @ 1.0 units/crew = 20.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	20.9	hour	\$45.00	\$941	2613 CY @ 125 LCY/hr = 20.9 hours @ 1.0 units/crew = 20.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Dozer (200 hp)	20.9	hour	\$56.38	\$1,178	2613 CY @ 125 LCY/hr = 20.9 hours @ 1.0 units/crew = 20.9 hours	RSM/HC p. 468 (line item 01 54 33 20 4260)
Select Fill	2613	CY	\$24.83	\$64,881	2613 CY @ 100% offsite mat'l = 2613 CY	
Subt - Select Fill (Ops Layer)				\$67,815		
(Subt: Assemb 15.A.13 thru 15.A.23)				\$468,921		
15.A.24 Clay Liner Anchor Trench Perimeter Road						
Quantity					production rate = 125 cy/hr, RSM/SWL p. 57 (02315-505-0010); depth = 1 foot (in 6-inch lifts) 20 ft by 575 ft long perimeter berm and one ft (2 six-inch lifts) = 426 CY	Permit Drawings 5 and 15
Laborer	2.3	hour	\$39.00	\$90	575 LCY @ 125 LCY/hr = 4.6 hours @ 0.5 units/crew = 2.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	9.2	hour	\$45.00	\$414	575 LCY @ 125 LCY/hr = 4.6 hours @ 2 units/crew = 9.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader, Track	4.6	hour	\$30.03	\$138	575 LCY @ 125 LCY/hr = 4.6 hours @ 1 units/crew = 4.6 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dozer (200 hp)	4.6	hour	\$56.38	\$259	575 LCY @ 125 LCY/hr = 4.6 hours @ 1 units/crew = 4.6 hours	RSM/HC p. 468 (line item 01 54 33 20 4260)
Clay Fill	575	LCY	\$18.00	\$10,350	426 BCY plus 35% comp fact = 575 LCY x 100% offsite mat'l = 575 LCY	
Subt - Spreading Clay Layer				\$11,251	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
15.A.25 Clay Layer Compaction						
Laborer	1.8	hour	\$39.00	\$70	production rate = 165 cy/hr, RSM/SWL p. 52 (02315-300-5640); depth = 1 foot (in 6-inch lifts) 575 LCY @ 165 LCY/hr = 3.5 hours @ 0.5 units/crew = 1.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	4.4	hour	\$45.00	\$198	575 LCY @ 165 LCY/hr = 3.5 hours @ 1.25 units/crew = 4.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Landfill Compactor (220 hp)	3.5	hour	\$75.60	\$265	575 LCY @ 165 LCY/hr = 3.5 hours @ 1 units/crew = 3.5 hours	RSM/HC p. 468 (line item 01 54 33 20 3300)
Vibratory Steel Drum, Diesel	1.8	hour	\$25.70	\$46	575 LCY @ 165 LCY/hr = 3.5 hours @ 50% top lift only = 1.8 hours	RSM/HC p. 468 (line item 01 54 33 20 3320)
Subt - Compacting Clay Layer				\$579	BCY = bank (in situ) compacted material; LCY = loose (ex situ) uncompacted material	
15.A.26 Clay Layer Testing						
Technician	10	hour	\$38.00	\$380	nine samples per 6-inch lift per acre; two six-inch lifts; one foot of depth; 0.25 hrs/samp for 2 techs 20 samp @ 0.25 hrs/samp = 5.0 hours @ 2 units/crew = 10.0 hours	technician rate: rate 2011 3rd party quote
In situ Nuclear Density Test	18	test	\$39.00	\$702	0.25 acres x 2 6-in lifts @ 9 tests per lift = 18.0 tests	
Laboratory Hydraulic Conductivity	2	test	\$198.00	\$396	0.25 acres x 2 6-in lifts @ 1 tests per lift = 2.0 tests	Actual Costs 2011 (TRI Environmental)
Sieve Analysis w/o hydrometer	2	test	\$70.00	\$140	0.25 acres x 2 6-in lifts @ 1 tests per lift = 2.0 tests	Actual Costs 2011 (TRI Environmental)
Atteberg Limits	2	test	\$65.00	\$130	0.25 acres x 2 6-in lifts @ 1 tests per lift = 2.0 tests	Actual Costs 2011 (TRI Environmental)
Moisture Percent	2	test	\$12.00	\$24	0.25 acres x 2 6-in lifts @ 1 tests per lift = 2.0 tests	Actual Costs 2011 (TRI Environmental)
Wet Density	2	test	\$110.00	\$220	0.25 acres x 2 6-in lifts @ 1 tests per lift = 2.0 tests	Actual Costs 2011 (TRI Environmental)
Dry Density	2	test	\$110.00	\$220	0.25 acres x 2 6-in lifts @ 1 tests per lift = 2.0 tests	Actual Costs 2011 (TRI Environmental)
Subt - Clay Layer Testing				\$2,212		
(Subt: Assemb 15.A.24 thru 15.A.26)				\$14,042	spreading and compacting impervious clay layer; 1-foot in depth using 100% offsite material	

NOTE: Sheet to be added.

15.A RMU-2 Landfill Closure 1-Cell (Berm)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
15.A.27 QA/QC Monitoring/Certification						
<i>Base Liner</i>						
QA/QC Monitoring/Certification	3	acre	\$25,700.00	\$77,100	52,900 SF per layer x 2 layers = 105,800 SF = 2.5 acres. Say approximately 3 acres.	Actual cost 2010/2011 (Ensol, Inc.)
Subtotal - Certification				\$77,100		
<i>(Subt: Assemb 15.A.27)</i>				\$77,100		
15.A Perimeter Berm Construction						
				\$1,344,449		
<i>(estimated cost per linear foot)</i>	575.0	LF @	\$ 2,338.17	<i>n/a</i>	<i>converting cell separator berm to perimeter berm for closure prior to full buildout Cell 20</i>	

**Unit Rates RMU-2
Closure Cost Estimate
CWM Chemical Services, LLC, Model City, New York**

2011 Unit Rates are based on actual costs for contractor capping 10.0 acres of RMU-1 during Phase VII Final Cover construction.

NOTE: Sheet to be added.

Basis:

UNIT RATES (THIRD PARTY COSTS)

RMU-1 CLOSURE	2011		Basis of Production and Quantities for In-House Estimate
	UOM	Price	
WASTE GRADING			
Final waste grading & surface preparation:	acre	\$ 5,000	Actual 2010 costs/site experience using site personnel
GRADING LAYER			
Load, haul, place, grade, grading layer:	CY	\$ 10.00	Actual Quoted Cost 2011 (Tri-C, Inc.) for placement of grading layer (\$10/CY)
Purchase/delivery of general fill from off-site source =	CY	\$ 11.00	Actual Quoted Cost 2011 (Tri-C, Inc.) for providing of grading layer (\$11/CY)
Grading layer surface preparation:	acre	\$ 10,000.00	Actual cost incurred for 2010 activities
EARTHWORKS CONTRACTOR MOB/DEMOB	acre	\$ 37,750.00	Average of two bids (third bid disqualified due to non-conformity)
GEOSYNTHETICS			
Geosynthetic Clay Liner (GCL)			
Material Cost	SQFT	\$ 0.46	2011 Actual Cost per SQFT including shipping & tax
Installation Cost	SQFT	\$ 0.35	2010 Average of two bids
Subtotal	SQFT	\$ 0.81	
GEOSYNTHETICS CONTRACTOR MOB/DEMOB	acre	\$ 13,750.00	2010 Average of two bids
40 mil Roughened HDPE geomembrane (textured 2 sided)			
Material Cost	SQFT	\$ 0.21	2010 Actual Cost per SQFT including tax & shipping
Installation Cost	SQFT	\$ 0.46	2010 Average of two bids
Subtotal	SQFT	\$ 0.67	
80 mil Roughened HDPE geomembrane (textured 2 sided)			
Material Cost	SQFT	\$ 0.48	
Installation Cost	SQFT	\$ 0.83	
Subtotal	SQFT		
Geosynthetic Installation at Standpipe Riser	each	\$ 1,000.00	Average of two bids (third bid disqualified due to non-conformity)
Geosynthetic Installation at Riser Vault	each	\$ 1,000.00	Average of two bids (third bid disqualified due to non-conformity)
Geocomposite			
Material Cost	SQFT	\$ 0.38	2011 Actual Blended cost (TN240 & TN350) including shipping & handling
Installation Cost (w/Sewing)	SQFT	\$ 0.32	2010 Average of two bids
Subtotal	SQFT	\$ 0.70	

Unit Rates RMU-2
Closure Cost Estimate
CWM Chemical Services, LLC, Model City, New York

2011 Unit Rates are based on actual costs for contractor capping 10.0 acres of RMU-1 during Phase VII Final Cover construction.

NOTE: Sheet to be added.

Basis:

UNIT RATES (THIRD PARTY COSTS)

RMU-1 CLOSURE		2011		Basis of Production and Quantities for In-House Estimate
ANCHOR TRENCHES				
Permanent		acre	\$ 1,100	Quoted price from Tri-C
Temporary		acre	\$ 4,500	Quoted price from Tri-C
Subtotal		acre	\$ 5,600	
GEOTEXTILE MATERIAL - FINAL COVER				
		acre	\$ 1,220	Quoted price from Tri-C
GEOTEXTILE MATERIAL - BASELINER				
Material Cost		SQFT	\$ 0.16	
Installation Cost		SQFT	\$ 0.12	
Subtotal		SQFT	\$ 0.28	
PERIMETER DITCHES AND ROADWAYS				
Perimeter Ditches and Roadways		LF	\$ 12	2010 Average of two bids
UNCLASSIFIED FILL				
Load, haul, place, grade and compact general fill:		CY	\$ 10.00	Actual Quoted Cost 2011 (Tri-C, Inc.) for placement of general fill (\$10/CY)
Purchase/delivery of general fill from off-site source =		CY	\$ 11.00	Actual Quoted Cost 2011 (Tri-C, Inc.) for providing of general fill (\$11/CY)
Test Fill Pad Construction		each	\$ 12,000.00	Actual 2010 costs/site experience
Test Fill Pad QA/QC & Reporting		each	\$ 8,000.00	Actual 2010 costs/site experience
TOPSOIL/VEGETATION				
Load, place, grade, topsoil:seed, fertilize and mulch =		CY	\$ 11.00	2011 Quoted price from Tri-C
Purchase/delivery of topsoil from off-site source =		CY	\$ 15.00	Quoted price from Tri-C
Purchase and Installation of erosion control matting =		SY	\$ 12.50	Average of two bids (third bid disqualified due to non-conformity)
Subtotal Topsoil/Vegetation		CY	\$ 38.50	
DRAINAGE				
Provide, install final cover drainage tile system		LF	\$ 15.06	Average of two bids (third bid disqualified due to non-conformity)
Provide, install final cover surface water downflume		each	\$ 23,625	6,300 SQFT x \$3.75/SQFT = \$23,625
BASELINER CLAY				
		CY	\$ 18	
DRAINAGE STONE BASELINER - Material delivered				
		CY	\$ 27.53	
SELECT FILL (OPERATIONS STONE) - Material delivered				
		CY	\$ 24.83	

**Unit Rates RMU-2
Closure Cost Estimate
CWM Chemical Services, LLC, Model City, New York**

2011 Unit Rates are based on actual costs for contractor capping 10.0 acres of RMU-1 during Phase VII Final Cover construction.

NOTE: Sheet to be added.

Basis:

UNIT RATES (THIRD PARTY COSTS)

RMU-1 CLOSURE		2011	Basis of Production and Quantities for In-House Estimate
FINAL COVER CQA, SURVEYING AND CQA REPORT	acre	\$ 25,700	2010 Average of two bids
BASELINER CQA, SURVEYING AND CQA REPORT	acre	\$ 51,400	
CONSTRUCTION CONTRACTOR MOB/DEMOB/ADMIN/SURVEY =	%	5	
DESIGN SUPPORT			
Pre-Construction Design Costs		\$ 25,000	\$25,000 for 22.8 acres
Engineering During Construction		\$ 25,000	\$25,000 for 22.8 acres
CONSTRUCTION MANAGEMENT	acre	\$ 4,500	Quoted price Ensol, Inc
GEOSYNTHETICS CONFORMANCE TESTING			
40-Mil Geomembrane (1/100,000)	sample	\$ 98	Actual Costs 2011 (TRI Environmental)
80-Mil Geomembrane (1/100,000)	sample	\$ 98	Actual Costs 2011 (TRI Environmental)
Geocomposite (1/100,000)	sample	\$ 300	Actual Costs 2011 (TRI Environmental)
GCL (1/100,000)	sample	\$ 235	Actual Costs 2011 (TRI Environmental)
Geotextile (1/100,000)	sample	\$ 247	Actual Costs 2011 (TRI Environmental)
Final Cover			
Interface Friction Testing (GCL/Soil)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (GCL/40-Mil)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (40-Mil/Geocomposite)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Geocomposite/Soil)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)
Base Liner			
Interface Friction Testing (Base GCL/NW-textile)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Base GCL/80-Mil)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Base 80-Mil/Geocomp)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)
Interface Friction Testing (Base Clay/80-Mil)	sample	\$ 5,055	Actual Costs 2011 (TRI Environmental)
MISCELLANEOUS			
200 GPM Transfer Pump	each	\$6,194	2004 DEC Rate * Implicit Deflator
Pump/Motor Replace/Maint/Repair	each	\$2,294.00	2004 DEC Rate * Implicit Deflator

**Unit Rates RMU-2
Closure Cost Estimate
CWM Chemical Services, LLC, Model City, New York**

2011 Unit Rates are based on actual costs for contractor capping 10.0 acres of RMU-1 during Phase VII Final Cover construction.

NOTE: Sheet to be added.

Basis:

UNIT RATES (THIRD PARTY COSTS)

RMU-1 CLOSURE	2011		Basis of Production and Quantities for In-House Estimate
SOIL PREQUALIFICATION & CONSTRUCTION TESTING			
Particle Size Dist. w/o hydr.	sample	\$ 70	Actual Costs 2011 (TRI Environmental)
Particle Size Dist. w/o hydr.	sample	\$ 100	Actual Costs 2011 (TRI Environmental)
Modified Proctor	sample	\$ 120	Actual Costs 2011 (TRI Environmental)
Standard Proctor	sample	\$ 115	Actual Costs 2011 (TRI Environmental)
Dir. Shear (3 normal stresses/set)	sample	\$ 500	Actual Costs 2011 (TRI Environmental)
Atterberg Limits	sample	\$ 65	Actual Costs 2011 (TRI Environmental)
Remolded Permeability	sample	\$ 198	Actual Costs 2011 (TRI Environmental)
Moisture Content	sample	\$ 12	Actual Costs 2011 (TRI Environmental)
Organic Content	sample	\$ 55	Actual Costs 2011 (TRI Environmental)
Soil Classification	sample	\$ 10	Actual Costs 2011 (TRI Environmental)

Rate Adjustment for inflation:

2011 Rate = 110.654 (2010 GDP) ÷ 96.77 (2004 GDP) = 1.14347421721608

1.147

Adjust 2004 DEC rates to 2011 rates based on implicit deflator

POST-CLOSURE COST ESTIMATE

**Post-Closure Cost Estimate Summary
CWM Chemical Services, LLC
Model City Facility
Model City, New York**

No.	Facility Activity Area	Proposed Post-Closure One Year Cost: Base = 2010	Post Closure Period	Proposed 30-Year Post Closure Costs	Perpetual Care Annual Costs Base = 2010	Perpetual Care Discount Rate 2010	Perpetual Care Monitoring Costs Base = 2010
PCC-1	SLF 1 - 6 (Post Cl)	\$611,261	30	\$18,337,820	\$599,851	3.85%	\$15,580,558
PCC-2	SLF 7 (Post Cl)	\$243,792	30	\$7,313,752	\$237,668	3.85%	\$6,173,192
PCC-3	SLF 10 (Post Cl)	\$231,706	30	\$6,951,166	\$227,134	3.85%	\$5,899,596
PCC-4	SLF 11 (Post Cl)	\$323,147	30	\$9,694,415	\$310,844	3.85%	\$8,073,869
PCC-5	SLF 12 (Post Cl)	\$248,737	30	\$7,462,111	\$239,180	3.85%	\$6,212,477
PCC-6	Resid Mgmt Unit 1 (Post Cl)	\$300,564	30	\$9,016,922	\$271,026	3.85%	\$7,039,625
PCC-7	Lagoons/Salts Areas (Post Cl)	\$36,015	30	\$1,080,444	\$35,698	3.85%	\$927,226
PCC-8	Process Tank Area (Post Cl)	\$40,469	30	\$1,214,055	\$40,469	3.85%	\$1,051,130
CM-1	Corrective Measures (Post Cl)	\$426,828	30	\$12,804,855	\$426,828	3.85%	\$11,086,454
Totals		\$2,462,518	n/a	\$73,875,541	\$2,388,699	n/a	\$62,044,127

Notes: (1) DEC Approved Perpetual Care Discount Rate equals 3.85%. Discount Rate recalculated January 2010 at 4.05%. 3.85% used for calculation.

CM-1: Corrective Measures

Basic Closure Activities: Direct Costs	Basis of Production and Quantities for In-house Estimate	DEC Estimate Basis (shaded) In-house Pricing References (unshaded)
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Corrective Measures Parameters Table 1 of 4 Number of Monitoring Check Points	GW Wells	Aqueous Sumps	DNAPL Sumps	Extraction Wells	Piezo-meters	Total Ck Pts	
West Drum Area	5	7	19	0	18	49	
Lagoons/Process Area I&II	9	7	8	7	14	45	GWES O&M Manual & GWSAP
Process Area III	1	1	0	0	5	7	
Process Area IV	0	0	0	2	0	2	
Area South of SLF 3	1	0	0	2	4	7	
P1202S Area	3	0	0	1	4	8	
BW02S Area	2	0	0	1	4	7	
PCB Warehouse Area	0	0	0	2	3	5	
North Salts	5	0	0	0	0	5	
East/West Salts	6	0	0	0	0	6	
Investigation Wells	7	0	0	0	0	7	
Subt - Annual Monitoring Events	39	15	27	15	52	148	

Corrective Measures Parameters Table 2 of 4 Annual Groundwater/DNAPL Level Monitoring Events	GW Wells	Aqueous Sumps	DNAPL Sumps	Extraction Wells	Piezo-meters	Total Ck Pts	No./ Year	Frequency of Monitoring	Events/ Year	
West Drum Area	4	7	19	0	18	48	4	quarterly	192	GWES O&M Manual
Lagoons/Process Area I&II	5	7	8	7	16	43	4	quarterly	172	& GWSAP
Process Area III	1	1	0	0	5	7	4	quarterly	28	
Process Area IV	0	0	0	2	0	2	1	annually	2	
Area South of SLF 3	2	0	0	2	4	8	4	quarterly	32	
P1202S Area	0	0	0	2	4	6	2	semi-annually	12	
BW02S Area	0	0	0	2	4	6	2	semi-annually	12	
PCB Warehouse Area	0	0	0	2	3	5	2	semi-annually	10	
North Salts	0	0	0	0	0	0	0	n/a	0	
East/West Salts	0	0	0	0	0	0	0	n/a	0	
Investigation Wells	0	0	0	0	0	0	0	n/a	0	
Subtotal - Annual GW/DNAPL Monitoring Level Events	12	15	27	17	54	125	n/a	n/a	460	

CM-1: Corrective Measures

Basic Closure Activities: Direct Costs	Basis of Production and Quantities for In-house Estimate	DEC Estimate Basis (shaded) In-house Pricing References (unshaded)
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Corrective Measures Parameters Table 3 of 4												
Annual Groundwater Sampling Events - VOC Analysis	Storage Tank	GW Wells	Aqueous Sumps	DNAPL Sumps	Extraction Wells	Piezo-meters	Total Ck Pts	No./ Year	Frequency of Monitoring	Events/ Year		
West Drum Area	0	3	0	0	0	0	3	3	2	semi-annually	6	GWES O&M Manual
Lagoons/Process Area I&II	0	9	0	0	0	0	9	9	2	semi-annually	18	& GWSAP
Process Area III	1	1	0	0	0	0	2	2	2	semi-annually	4	
Process Area IV	1	0	0	0	0	0	1	1	1	annually	1	
Area South of SLF 3	0	0	0	0	0	0	0	0	2	semi-annually	0	
P1202S Area	1	1	0	0	0	0	2	2	2	semi-annually	4	
BW02S Area	1	0	0	0	0	0	1	1	2	semi-annually	2	
BW02S Area	0	1	0	0	0	0	1	1	1	annually	1	
PCB Warehouse Area	1	0	0	0	0	0	1	1	2	semi-annually	2	
North Salts	0	5	0	0	0	0	5	5	2	semi-annually	10	
East/West Salts	0	6	0	0	0	0	6	6	2	semi-annually	12	
Investigation Wells	0	3	0	0	0	0	3	3	1	annually	3	
Investigation Wells	0	4	0	0	0	0	4	4	2	semi-annually	8	
Subtotal - Annual GW Sampling Events - VOC Analysis	5	33	0	0	0	0	38	n/a	n/a	n/a	71	

Corrective Measures Parameters Table 4 of 4											
Annual Groundwater Sampling Events - VOCs/Semi-VOCs/PCBs/Metals Analysis (STCL)	GW Wells	Aqueous Sumps	DNAPL Sumps	Extraction Wells	Piezo-meters	Total Ck Pts	No./ Year	Frequency of Monitoring	Events/ Year		
West Drum Area	0	3	0	0	0	3	1	annually	3		GWES O&M Manual
Lagoons/Process Area I&II	0	2	0	0	0	2	1	annually	2		& GWSAP
Process Area III	0	0	0	0	0	0	0	n/a	0		
Process Area IV	0	0	0	0	0	0	0	n/a	0		
Area South of SLF 3	1	0	0	1	0	2	1	annually	2		
P1202S Area	0	0	0	0	0	0	1	annually	0		
BW02S Area	0	0	0	0	0	0	1	annually	0		
PCB Warehouse Area	0	0	0	0	0	0	1	annually	0		
North Salts	0	0	0	0	0	0	0	n/a	0		
East/West Salts	0	0	0	0	0	0	0	n/a	0		
Investigation Wells	0	0	0	0	0	0	0	n/a	0		
Subtotal - Annual GW Sampling Events (STCL Analysis)	1	5	0	1	0	7	n/a	n/a	7		

STCL = Superfund Target Compound List
 GWES O&M Manual = Groundwater Extraction System Operations & Maintenance Manual
 GWSAP = Site-Wide Groundwater Sampling & Analysis Plan

CM-1: Corrective Measures

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References (unshaded)
CM-1.1 Annual Groundwater Monit'g						GW Level Monitoring Crew = 1 Technician; GW Sampling Crew = 2 Technicians	
<i>GW/DNAPL Level Monit'g Events</i>						396.0 quart/ly + 34.0 semi-ann = 430.0 events	see Parameter Table 2
Technician - Level Monitoring	115	hours	\$38.00	\$4,370	\$4,370	460.0 events @ 0.25 hrs/event x 1 per crew = 115 hours	third party labor rates
<i>GW Sampling Events</i>						66.0 semi-ann + 12.0 annual = 78.0 events x 1.05 each = 81.9 samp	see Parameter Tables 3 & 4; add 5% QA to samples
Technician - GW Sampling	164	hours	\$38.00	\$6,232	\$6,232	82.0 samps @ 1.0 hrs/samp x 2 per crew = 164.0 hours	third party labor rates
Sampling Supplies	82	samp	\$25.00	\$2,050	\$2,050	82.0 samples	bottles, shipping supplies
VOCs	69.3	samp	\$105.00	\$7,277	\$7,277	69.3 samples	average of 3 third party quotes
VOCs/Semi-VOCs/PCBs/Metals	12.7	samp	\$773.33	\$9,821	\$9,821	12.7 samples	average of 3 third party quotes
Subt - Annual GW Monitoring				\$29,750	\$29,750	CM-1 groundwater monitoring	
CM-1.2 Extr GW Leachate Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment	751018	gal	\$0.1526	\$114,605	\$114,605	751,018 gals estimated annual leachate volume based upon avg. of rates 1997 to 2011	unit price derived from AWTS O&M model
Leachate Treatment (PA III)	140000	gal	\$0.1526	\$21,364	\$21,364	140,000 gals estimated annual volume based on average per linear foot from existing trench systems	
Leachate Treatment (PA IV)	14400	gal	\$0.1526	\$2,197	\$2,197	14,400 gals estimate annual volume based on average from PCB Warehouse	
Leach Treat Syst. Capital Repl Cost	1	LS	\$17,642.00	\$17,642	\$17,642	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each	DEC estimate of AWTS capital replacement costs @ 25 yrs
Laborer	48.0	hours	\$38.00	\$1,824	\$1,824	4 hrs/mon x 12 mon/year = 48 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	48.0	hours	\$38.00	\$1,824	\$1,824	4 hrs/mon x 12 mon/year = 48 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	6.3	samp	\$25.00	\$158	\$158	2.0 samp/yr x 3.0 tanks x 1.05 each = 6.3 samples/year	bottles, shipping supplies
VOCs	6.3	samp	\$105.00	\$662	\$662	6.3 samples	average of 3 third party quotes
Electrical Costs - Pumps	1548.7	KWH	\$0.086	\$133	\$133	1,384.0 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 1548.7 KWH/yr	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-8001	0.2	pump	\$12,000.00	\$2,400	\$2,400	1 pump per 5 years = 0.2	15 hp pump, site experience
Replacement of Pumps	3.0	pump	\$1,490.00	\$4,470	\$4,470	30 pumps @ 10.0% pumps/yr = 3 pumps	2.0 hp, 4" submersible pump, site experience
Replacement of Pump Dischg Hose	3.0	hose	\$211.54	\$635	\$635	30 pumps @ 10.0% pumps/yr = 3 hoses	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	30.0	CF	\$12.45	\$374	\$374	3 pu/hos @ 10 CF/pump = 30 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 3"	20.0	LF	\$13.41	\$268	\$268	2,000 LF @ 1.0% per year = 20.0 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	10.0	CF	\$12.45	\$125	\$125	20.0 LF @ 0.50 CF/LF = 10.0 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Extr GW Leachate Mgmt				\$168,680	\$168,680	annual O&M costs plus capital replacement of treatment system, pumps, and piping	
CM-1.2a AWTS Operation						Shift operation of the AWTS for 12 months	
Material handler/basic labor	274.3	hours	\$39.00	\$10,698	\$10,698	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Maintenance/basic labor	548.6	hours	\$39.00	\$21,395	\$21,395	240 days @ 8 hours/day = 1920.0 hours @ 2 units/crew/7 units = 548.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Operator/technician	834.3	hours	\$38.00	\$31,703	\$31,703	365 days @ 8 hours/day = 2920.0 hours @ 2 units/crew/7 units = 834.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Laboratory/technician	274.3	hours	\$38.00	\$10,423	\$10,423	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
AWT Foreman/Supervisor	274.3	hours	\$65.00	\$17,830	\$17,830	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - AWTS Operation				\$92,049	\$92,049	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
CM-1.2b Site Waters Treatment							
Leachate Treatment - Post Closure	201193.00	gal	\$0.0313	\$6,297	\$0	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Leachate Treatment - Perpetual Care	201193.00	gal	\$0.0313	\$0	\$6,297	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Tank Trailer (5,500 gals) Collect	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Road Tractor (4 x 2, 30 ton) Transport	18.30	hours	\$32.45	\$594	\$594	1,408,349 gals @ 5500 gals/load = 256.1 loads @ 0.5 hrs/trip = 128 hrs/7 units = 18.3 hrs	RSM/HC p. 472 (line item 01 54 33 40 7410)
Tank Trailer (5,500 gals) Transport	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Fill T-100	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Site Waters Treatment				\$9,199	\$9,199	CM share of annual site waters collection & treatment: post-closure & perpetual care frequency are equa	Labor included in PCC-1.7a

CM-1: Corrective Measures

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References (unshaded)
CM-1.2c Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
VOCs (624)	3.4	samp	\$105.00	\$357	\$357	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	
Semi-volatile organics (625)	3.4	samp	\$208.33	\$715	\$715	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
PCBs (608) (MDL 65 PPT (ng/l))	3.4	samp	\$133.33	\$457	\$457	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Priority Pollutant Metals (200.7)	3.4	samp	\$188.00	\$645	\$645	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Mercury (245.1)	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Sulfides	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Cyanide	3.4	samp	\$35.00	\$120	\$120	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Subt - Batch Tank Qualification				\$2,465	\$2,465	CM share of annual batch tank qualification	Samples collected by lab technician
CM-1.2d Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/evnt= 3 samples	sampling & analysis prior to pond discharge
Technician	2.6	hours	\$38.00	\$99	\$99	3 samp @ 2.0 hrs/samp = 6.0 hours @ 3 units/crew = 18.0 hrs/7 units = 2.6 hrs	technician rate: rate 2011 3rd party quote
Sampling Equipment	0.9	hours	\$25.00	\$23	\$23	3 samp @ 2.0 hrs/samp = 6.0 hours @ 1 units/crew = 6.0 hrs/7 units = 0.9 hrs	boat, samplers, meters, etc.
Sampling Supplies	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	bottles, shipping supplies
pH	0.5	samp	\$10.67	\$5	\$5	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Specific Conductance	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Temperature	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Dissolved Oxygen	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Total Dissolved solids (TDS)	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TDVS (total dissolved volatile solids)	0.5	samp	\$23.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Alkalinity as CaCO3	0.5	samp	\$15.33	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TOC	0.5	samp	\$31.67	\$16	\$16	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ca/Mg Hardness (200.7)	0.5	samp	\$24.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Total Suspended Solids (TSS)	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Settleable Solids	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ammonia (NH3)	0.5	samp	\$22.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Phosphorous	0.5	samp	\$20.00	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TON (TKN-NH3)	0.5	samp	\$41.67	\$21	\$21	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Cyanide	0.5	samp	\$35.00	\$18	\$18	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfates	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfides	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Surfactants (MBAS)	0.5	samp	\$28.33	\$14	\$14	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
BOD-5	0.5	samp	\$30.00	\$15	\$15	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Fluoride	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Chlorine	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Residual Chlorine	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO2	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO3	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
VOCs (624)	0.5	samp	\$105.00	\$53	\$53	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Semi-volatile organics (625)	0.5	samp	\$208.33	\$104	\$104	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	0.5	samp	\$133.33	\$67	\$67	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Oil & Grease (1631)	0.5	samp	\$21.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
total Phenols	0.5	samp	\$26.67	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Priority Pollutant Metals (200.7) *	0.5	samp	\$188.00	\$94	\$94	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (245.1)	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (1631B)	0.5	samp	\$111.67	\$56	\$56	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Acute Toxicity/Bioassy	0.15	samp	\$3,800.00	\$570	\$570	1 sample/ 7 units = 0.15 samples	One quote: actual cost for 2010
Subt - Pond Sampling & Analysis				\$1,353	\$1,353	one pond discharge (batch) requiring sampling & analysis prior to discharge	

CM-1: Corrective Measures

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References (unshaded)
CM-1.2e Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischarge qualification report	
Divers (Sr. Technicians)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
SCBA Gear (2 units)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Laborer (Surface Support)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Underwater Inspection	0.15	each	\$4,000.00	\$600	\$600	\$4,000 per event @ 1 event per year/ 7 units = 0.15 events	Based on 2010 site rate of \$3,500
Engineer (Report)	5.7	hours	\$130.00	\$741	\$741	1 events @ 40 hrs/event = 40.0 hours @ 1 units/crew = 40.0 hours/7 units = 5.7	Eng Rate: rate 2011 3rd party quote
Subt - S&A Cert'n & Report				\$1,341	\$1,341	<i>diver(s) to check discharge pipe; also engineer's predischarge qualification report</i>	Fac Pond 8 out of service empty
CM-1.2f Empty (Pump) FAC Pond to Outfall						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
FAC Pond 1/2 Inventory in Gallons	2750618.0	gals	n/a			45.8 total hours req'd to pump	& site waters
Labor to pump/discharge		day hrs	n/a	\$0	\$0	Included in CM-1.2a above	
Tech/Sampler (day shift only)		day hrs	\$38.00	\$0	\$0	Included in CM-1.2a above	
Settleable Solids	1.6	samp	\$13.33	\$21	\$21	45.8 hours @ 1.0 sample per 4.0 hours = 11.5 samples /7 units = 1.6 samples	analytical price: average of three quotes
Dissolved Oxygen	1.0	samp	-	\$0	\$0	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples Field Measurement	analytical price: average of three quotes
Sulfide (total)	1.0	samp	\$25.00	\$25	\$25	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	6.5	total hrs	\$12.34	\$80	\$80	45.8 tot hrs @ 100% total time = 45.8 hours @ 1 units/crew = 45.8 hrs/ 7 units = 6.5 hrs	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam/3,000 LF)	19628.0	foot-hrs	\$0.0110	\$216	\$216	45.8 tot hrs @ 100% total time = 45.8 hours @ 3000 LF/crew = 137400 ft-hrs/7 units = 19,628	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Pump FAC Pond 1/2				\$342	\$342	<i>transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft)</i>	
(Subt: Assemb CM-1.1 thru 1.2f)				\$305,179	\$305,179	<i>Corrective Measures share of annual O&M and capital costs for leachate collection & treatment</i>	
CM-1.3 Empty Tanks T-8004/5/6/7						production rate = 1,650 gals per hour	
Laborer	0	Hour	\$39.00	\$0	\$0	Labor included in third party operation of AWTS: Assembly CM-1.2a	
Pumping Equipment	0	Hour	\$0.00	\$0	\$0	Existing equipment part of tank system	
Tank Trailer (5,500 gals)	16.8	Hour	\$6.31	\$106	\$106	27,770 gals @ 1650 gals/hr = 16.8 per crew = 1.0 unit/crew = 16.8 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanks T-8004/5/6/7				\$106	\$106	<i>pumping leachate from Tanks T-8004, T-8005, T-8006, and T-8007 for transport to Tank T-158</i>	
CM-1.3a Empty Tanks T-8009/10						production rate = 1,650 gals per hour	
Laborer	0	Hour	\$39.00	\$0	\$0	Labor included in third party operation of AWTS: Assembly CM-1.2a	
Pumping Equipment	0	Hour	\$0.00	\$0	\$0	Existing equipment part of tank system	
Tank Trailer (5,500 gals)	93.6	Hour	\$6.31	\$591	\$591	154,400 gals @ 1650 gals/hr = 93.6 per crew = 1.0 unit/crew = 93.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanks T-8004/5/6/7				\$591	\$591	<i>pumping leachate from Tanks T-8009, and T-8010 for transport to Tank T-158</i>	
CM-1.4 Transp't Leachate Onsite						production rate = 0.5 hours for on-site transport see CM-1.3 above	
Road Tractor (4 x 2, 30 ton)	2.55	Hour	\$32.45	\$83	\$83	27,770 gals @ 5500 gals/load = 5.1 loads @ 0.5 hrs/trip = 2.55 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0	Hour	\$45.00	\$0	\$0	Labor included in third party operation of AWTS: Assembly CM-1.2a	
Tank Trailer (5,500 gals)	2.55	Hour	\$6.31	\$16	\$16	27,770 gals @ 5500 gals/load = 5.1 loads @ 0.5 hrs/trip = 2.55 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transp Leachate Onsite				\$99	\$99	<i>onsite transport of leachate from Tanks T-8004, T-8005, T-8006, and T-8007 to Tank T-158</i>	
CM-1.4a Transp't Leachate Onsite						production rate = 0.5 hours for on-site transport see CM-1.3a above	
Road Tractor (4 x 2, 30 ton)	14	Hour	\$32.45	\$454	\$454	154,400 gals @ 5500 gals/load = 28.1 loads @ 0.5 hrs/trip = 14.0 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0	Hour	\$45.00	\$0	\$0	Labor included in third party operation of AWTS: Assembly CM-1.2a	
Tank Trailer (5,500 gals)	14	Hour	\$6.31	\$88	\$88	154,400 gals @ 5500 gals/load = 28.1 loads @ 0.5 hrs/trip = 14.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transp Leachate Onsite				\$543	\$543	<i>onsite transport of leachate from Tanks T-8009, and T-8010 to Tank T-158</i>	

CM-1: Corrective Measures

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References (unshaded)
CM-1.5 Fill Tank T-158							
						production rate = 1,650 gals per hour	
Laborer	0	Hour	\$39.00	\$0	\$0	Labor included in third party operation of AWTS: Assembly CM-1.2a	
Pumping Equipment	0	Hour	\$0.00	\$0	\$0	Existing equipment part of tank system	
Tank Trailer (5,500 gals)	16.8	Hour	\$6.31	\$106	\$106	27,770 gals @ 1650 gals/hr = 16.8 per crew = 1.0 unit/crew = 16.8 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Fill Tank T-158				\$106	\$106	<i>pumping leachate taken from Tanks T-8004, T-8005, T-8006, and T-8007 into Tank T-158</i>	
CM-1.5a Fill Tank T-158							
						production rate = 1,650 gals per hour	
Laborer	0	Hour	\$39.00	\$0	\$0	Labor included in third party operation of AWTS: Assembly CM-1.2a	
Pumping Equipment	0	Hour	\$0.00	\$0	\$0	Existing equipment part of tank system	
Tank Trailer (5,500 gals)	93.6	Hour	\$6.31	\$591	\$591	154,400 gals @ 1650 gals/hr = 93.6 per crew = 1.0 unit/crew = 93.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Fill Tank T-158				\$591	\$591	<i>pumping leachate taken from Tanks T-8009, and T-8010 into Tank T-158</i>	
(Subt: Assemb CM-1.3 thru 1.5a)				\$2,035	\$2,035	<i>CM-1 annual leachate transport costs</i>	
CM-1.6 T&D PCBs							
						Max annual production years between 2003 & 2010 of 2,025 gallons	
Laborer	0	Hour	\$39.00	\$0	\$0	Include in Assembly CM-1.2a	
Pumping Equipment	0	Hour	\$0.00	\$0	\$0	Existing tank system equipment	
Transport DNAPL PCB Liquids	565.7	miles	\$3.50	\$1,980	\$1,980	2,025 gals/yr @ 5000 gals/load = 0.37 loads @ 1529.0 miles/trip = 565.7 miles	transporters quote & site experience
Dispose of DNAPL PCB Liquids	2025	gals	\$4.68	\$9,477	\$9,477	2,025 gallons	HWC/ETC 2004 & Current third party rate
Subt - T&D DNAPL PCBs				\$11,457	\$11,457		
(Subt: Assemb CM-1.6 thru 1.6)				\$11,457	\$11,457	<i>CM-1 annual DNAPL PCB liquids transport & disposal costs</i>	
CM-1.7 Tank Assessments							
						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
<i>Internal & External Inspections</i>						<i>16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr</i>	
Engineer - Inspection	3.7	Hour	\$130.00	\$481	\$481	0.5 tanks/yr x 8 hrs/tnk x 1.0 per crew = 3.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	7.3	Hour	\$38.00	\$277	\$277	0.5 tanks/yr x 8 hrs/tnk x 2.0 per crew = 7.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.8	Hour	\$130.00	\$234	\$234	0.5 tanks/yr x 4 hrs/tnk x 1.0 per crew = 1.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$992	\$992	<i>inspection of 16 tanks</i>	
CM-1.8 Tank Assessments							
						thirty (32) tanks requiring only external inspections once every five years by 1 PE	
<i>External Only Inspections</i>						<i>32 tanks @ 5 yr inspect = 6.4 tnks/yr @ 7 areas = 0.9 tnks/yr</i>	
Engineer - Inspection	3.4	Hour	\$130.00	\$442	\$442	0.9 tanks/yr x 4 hrs/tnk x 1.0 per crew = 3.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	0	Hour	\$38.00	\$0	\$0	0.9 tanks/yr x 4 hrs/tnk x 0.0 per crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.7	Hour	\$130.00	\$221	\$221	0.9 tanks/yr x 2 hrs/tnk x 1.0 per crew = 1.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$663	\$663	<i>inspection of 32 tanks</i>	
(Subt: Assemb CM-1.7 thru 1.8)				\$1,655	\$1,655	<i>CM-1 share of annual tank assessment costs</i>	

CM-1: Corrective Measures

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References (unshaded)
CM-1.9 Replace Mon Well Pump							
Replace Mon Well Pumps	0.98	pump	\$900.00	\$882	\$882	39 pumps @ 2.5% per year = 0.98 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.98	CF	\$12.45	\$12	\$12	0.98 pumps @ 1.0 CF/pump = 0.98 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.98	pad	\$131.50	\$129	\$129	39 pads @ 2.5% per year = 0.98 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	2	CF	\$12.45	\$25	\$25	0.98 pads @ 2.0 CF/pad = 2.0 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.98	each	\$371.63	\$364	\$364	38 covers @ 2.5% per year = 0.98 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.49	CF	\$12.45	\$6	\$6	0.98 covers @ 0.5 CF/cover = 0.49 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps (Subt: Assemb CM-1.9 thru 1.9)				\$1,494	\$1,494	monitoring well pump maintenance and replacement CM-1 mon well pump maintenance & replacement	

Total Non-Super hours 394.0

CM-1.10 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	36.7	days	\$0.00	\$0	\$0	391.4 hours @ 8 hr/day = 48.9 days @ 75% "D" days = 36.7 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	7.3	days	\$9.00	\$66	\$66	391.4 hours @ 8 hr/day = 48.9 days @ 15% "C" days = 7.3 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	4.9	days	\$25.00	\$123	\$123	391.4 hours @ 8 hr/day = 48.9 days @ 10% "C" days = 4.9 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	9.8	hours	\$75.00	\$735	\$735	391.4 hours @ 2.5 hr/hr = 9.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$923	\$923		
CM-1.11 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in PCC-1.2a AWTS Operation	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision (Subt: Assemb CM-1.10 thru 1.11)				\$0	\$0	supervision, health & safety, and certification	

CM-1: Corrective Measures Direct Cost				\$322,744	\$322,744		
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CM-1: Corrective Measures				
Total Cost Summary				
Cost Category	Proposed Percent of Direct Cost	Proposed Annual Cost Post - Closure Period	Proposed Cost - Annual Perpetual Care	Cost Range
Direct Costs		\$322,744	\$322,744	
Plus Indirect Costs/Profit:				
Site Activity Management Costs	3.00%	\$9,682	\$9,682	Included in Gen'l Contractor G&A/Home Office (note: DEC uses 3%)
Gen'l Contractor G&A/Home Office	4.00%	\$12,910	\$12,910	5% for post-closure. (note: DEC uses 4%)
Pre-Construction Design Costs	1.00%	\$3,227	\$3,227	For post-closure, design costs minimal and included in Assb CM-1.11. (note: DEC uses 1%)
Engineering During Construction	1.00%	\$3,227	\$3,227	For post-closure, design costs minimal and included in Assb CM-1.11. (note: DEC uses 1%)
General Contractor Profit	6.00%	\$19,365	\$19,365	Contractor Profit included in unit rates & Gen' Cont G&A/Home Office (Note DEC adds 6%)
Indirect Costs & Profit	15.00%	\$48,412	\$48,412	
Subtotal - Direct/Indirect Costs		\$371,155	\$371,155	
Plus Contingency	15.00%	\$55,673	\$55,673	DEC uses 15% applied to total cost
Total - CM-1: Corrective Measures		\$426,828	\$426,828	

Corrective Measures Years of Post Closure

Years Since Closure

N/A

Post Closure Years Remaining

30

Post Closure Costs Remaining Years	\$12,804,855
Post Closure Costs 30-Years	\$12,804,855

PCC-1: SLF 1 - 6

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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SLF 1 - 6 Parameters - Area						18.7 acres = 90508 SY = 814572 SF = 814.6 MSF	31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs
SLF 1 - 6 Parameters - Fencing							3960 LF = portion of perimeter fencing for SLF 1 - 6
SLF 1-6 Years of Post Closure	Closure	1985	Years Since Closure	27	Post Closure Years Remaining	3	

PCC-1.1 Annual Visual Inspections						make visual inspections and log results; two persons required	
<i>Post-Closure</i>						Post-Closure Frequencies according to Page 11 of Site-Wide Post-Closure Plan	
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.5	hours	\$38.00	\$57	\$0	3 hrs/insp x 2.0 insp/year x 2 per crew/ 8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x 1.8 insp/year x 2 per crew = 7.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above	this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections Post-Cls				\$847	\$0	SLF 1 - 6 post-closure inspections	
<i>Perpetual Care</i>						Perpetual Care Frequencies according to Page 11 of Site-Wide Post-Closure Plan	
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.0	hours	\$38.00	\$0	\$38	4 hrs/insp x 1.0 insp/year x 2 per crew/ 8 facility units = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x 1.04 insp/year x 2 per crew = 4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above	this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections Perp-Care				\$0	\$502	SLF 1 - 6 perpetual care inspections	
(Subt: Assemb PCC-1.1 thru 1.1)				\$847	\$502	SLF 1 - 6 visual inspections	

PCC-1.2 Perimeter Fence Maint.						one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected	
Replacement of Fencing	79.2	LF	\$20.00	\$1,584	\$1,584	31680 LF div by 8 units x 2% per year = 79.2 LF	Site Experience 2010 Rate
Subt - Perimeter Fence Maint.				\$1,584	\$1,584	SLF 1 - 6 share of perimeter fence inspection & replacement	
(Subt: Assemb PCC-1.2 thru 1.2)				\$1,584	\$1,584	SLF 1 - 6 share of perimeter fence inspection & replacement: post-closure & perpetual care frequency are equal	

PCC-1.3 Groundwater Monitoring						sampling crew composed of two technicians; 22 monitoring wells (21 for unit + 1 upgradient)		
<i>Monit'g Events & Samples/Event</i>						0.0 quart'/ly + 42.0 semi-ann + 0.5 b-ann'l x 1.05 each = 44.6 samp		includes 5% QA sampling
<i>Post-Closure</i>								
Technician	89.2	hours	\$38.00	\$3,390	\$0	44.6 samps @ 1.0 hrs/samp x 2 per crew = 89.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote	
Sampling Supplies	44.6	samp	\$25.00	\$1,115	\$0	44.6 samples	bottles, shipping supplies	
VOCs	44.6	samp	\$105.00	\$4,683	\$0	44.6 samples	Average of three quotes	
Subt - GW Monitoring				\$9,188	\$0	post closure groundwater monitoring		
<i>Monit'g Events & Samples/Event</i>						21.0 wells @ sample/5 years 1.05 each = 4.4 samp/yr		No DEC estimate for perpetual care
<i>Perpetual Care</i>						Perpetual care groundwater monitoring once every five years		
Technician	8.8	hours	\$38.00	\$0	\$334	4.4 samps @ 1.0 hrs/samp x 2 per crew = 8.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote	
Sampling Supplies	4.4	samp	\$25.00	\$0	\$110	4.4 samples	bottles, shipping supplies	
VOCs	4.4	samp	\$105.00	\$0	\$462	4.4 samples	Average of three quotes	
Subt - GW Monitoring				\$0	\$906	perpetual care groundwater monitoring		

PCC-1: SLF 1 - 6

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-1.4 Outfalls 002,003,004 SPDES Mon						production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure	
<i>Weekly Sampling Events</i>						12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples	sampling & analysis according to SPDES Permit
Technician	39	hours	\$38.00	\$1,482	\$1,482	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	
Pickup Truck	39	hours	\$10.45	\$408	\$408	39.0 hours	
Sampling Equipment	39	hours	\$5.00	\$195	\$195	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	samplers, meters, etc.
Sampling Supplies	19.5	samp	\$5.00	\$98	\$98	19.5 samples	bottles, shipping supplies
pH	19.5	samp	\$10.67	\$208	\$208	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Specific Conductance	19.5	samp	\$13.33	\$260	\$260	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Total Suspended Solids (TSS)	16.2	samp	\$13.33	\$216	\$216	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Total Dissolved Solids	16.2	samp	\$15.00	\$243	\$243	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Settleable Solids	76.1	samp	\$13.33	\$1,015	\$1,015	3 outfalls @ 3.9 samp/OF/week @ 52 weeks = 608.4 samples/8 units 76.1 samples	daily during flow assume 3.9/week: Average of three quotes
BOD-5	4.5	samp	\$31.67	\$143	\$143	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Dissolved Oxygen	4.5	samp	\$17.50	\$79	\$79	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Ammonia (NH3)	4.5	samp	\$22.67	\$102	\$102	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
VOCs (624)	9	samp	\$105.00	\$945	\$945	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Oil & Grease (1631)	9	samp	\$40.00	\$360	\$360	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Copper	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Zinc	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Phenols	4.5	samp	\$26.67	\$120	\$120	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	19.5	samp	\$133.33	\$2,600	\$2,600	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
2-Chloroethyl vinyl ether	0	samp	\$86.67	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Dichlorodifluoromethane	9	samp	\$75.00	\$675	\$675	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Methylene chloride	0	samp	\$75.00	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Shipping	19.5	samp	\$5.00	\$98	\$98		
Subt - SPDES Outfall Sampling & Analysis				\$9,403	\$9,403	three outfalls requiring weekly sampling & analysis for each year during post-closure	
PCC-1.4a Discharge Monitoring Report						Monthly Discharge Monitoring Reports	
Engineer (Report)	3	hours	\$130.00	\$390	\$390	12 months @ 2 hrs/event = 24.0 hours @ div by 8 units = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Clerical	6	hours	\$45.00	\$270	\$270	12 months @ 4 hrs/event = 48.0 hours @ div by 8 units = 6.0 hours	
Subt - Discharge Monitoring Report (Subt: Assemb PCC-1.3 thru 1.4a)				\$660	\$660	submittal of SPDES Permit required Discharge Monitoring Report (DMR)	
				\$19,251	\$10,970	SLF 1 - 6 groundwater & stormwater monitoring activities	
PCC-1.5 Landfill Cover Maint.							
Replacement of Cover	0.187	acre	\$20,973.33	\$3,922	\$3,922	18.7 acre @ 1.0% per year = 0.187 acres/yr	unit price based upon vegetation, topsoil, from RMU-1,
Subt - Landfill Cover Maint.				\$3,922	\$3,922	SLF 1 - 6 upper cap maintenance and replacement	Assemblies 14.17 thru 14.18
PCC-1.6 Mowing/Grooming							
Mowing	814.6	MSF	\$3.21	\$2,617	\$2,617	814.6 MSF @ 1.0 per year = 814.6 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	162.9	MSF	\$3.82	\$622	\$622	814.6 MSF @ 1.0 per 5.0 years = 162.9 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming (Subt: Assemb PCC-1.5 thru 1.6)				\$3,240	\$3,240	SLF 1 - 6 mowing and fertilizing	
				\$7,162	\$7,162	SLF 1 - 6 cap maintenance activities: post-closure & perpetual care frequency are equal	

PCC-1: SLF 1 - 6

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-1.7 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment - Post Closure	138178.00	gal	\$1.8244	\$252,098	\$0	138,178 gals average of past 5 years	unit price derived from AWTS model with oil @ 25%
Leachate Treatment - Perpetual Care	138178.00	gal	\$1.8244	\$0	\$252,098	138,178 gals average of past 5 years	unit price derived from AWTS model with oil @ 11%
Leach Treat Syst. Capital Repl Cost	1	LS	\$17,642.00	\$17,642	\$17,642	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each	DEC estimate of AWTS capital replacement costs @ 25 yrs
Laborer	120	hours	\$39.00	\$4,680	\$4,680	10 hrs/mon x 12 mon/year = 120 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	120	hours	\$38.00	\$4,560	\$4,560	10 hrs/mon x 12 mon/year = 120 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Electrical Costs - Pumps	152.5	KWH	\$0.086	\$13	\$13	136.3 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 152.5 KWH/yr	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-105	0.2	pump	\$2,456.00	\$491	\$491	1 pump per 5 years = 0.2 pumps	250 gpm, 5 hp pump, Site Experience
Replacement of Pumps	15	pump	\$1,382.00	\$20,730	\$20,730	25 pumps @ 60.0% pumps/yr = 15 pumps	1.5 hp submersible pump, site experience
Replacement of Pump Dischg Hose	15	hose	\$211.54	\$3,173	\$3,173	25 pumps @ 60.0% pumps/yr = 15 hoses	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	150	CF	\$12.45	\$1,868	\$1,868	15 pu/hos @ 10 CF/pump = 150 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	19.7	LF	\$53.25	\$1,049	\$1,049	19.7 LF @ 1.0% per year = 19.7 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	6.5	CF	\$12.45	\$81	\$81	19.7 LF @ 0.33 CF/LF = 6.5 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	20	LF	\$73.50	\$1,470	\$1,470	2,000 LF @ 1.0% per year = 20.0 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	10	CF	\$12.45	\$125	\$125	20.0 LF @ 0.50 CF/LF = 10.0 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt Leachate Coll Syst Mgmt				\$307,979	\$307,979	annual O&M costs plus capital replacement of treatment system, pumps, and piping	
PCC-1.7a AWTS Operation						Shift operation of the AWTS for 12 months	no DEC estimate for this activity: DEC Estimate included in unit rate
Material handler/basic labor	274.3	hours	\$39.00	\$10,698	\$10,698	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Maintenance/basic labor	548.6	hours	\$39.00	\$21,395	\$21,395	240 days @ 8 hours/day = 1920.0 hours @ 2 units/crew/7 units = 548.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Operator/technician	834.3	hours	\$38.00	\$31,703	\$31,703	365 days @ 8 hours/day = 2920.0 hours @ 2 units/crew/7 units = 834.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Laboratory/technician	274.3	hours	\$38.00	\$10,423	\$10,423	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
AWT Foreman/Supervisor	274.3	hours	\$65.00	\$17,830	\$17,830	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - AWTS Operation				\$92,049	\$92,049	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
PCC-1.7b Site Waters Treatment							
Leachate Treatment - Post Closure	201193.00	gal	\$0.0313	\$6,297	\$0	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Leachate Treatment - Perpetual Care	201193.00	gal	\$0.0313	\$0	\$6,297	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Tank Trailer (5,500 gals) Collect	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Road Tractor (4 x 2, 30 ton) Transport	18.30	hours	\$32.45	\$594	\$594	1,408,349 gals @ 5500 gals/load = 256.1 loads @ 0.5 hrs/trip = 128 hrs/7 units = 18.3 hrs	RSM/HC p. 472 (line item 01 54 33 40 7410)
Tank Trailer (5,500 gals) Transport	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Fill T-100	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Site Waters Treatment				\$9,199	\$9,199	SLF 1 - 6 share of annual site waters collection & treatment: post-closure & perpetual care frequency are equal	Labor included in PCC-1.7a
PCC-1.7c Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
VOCs (624)	3.4	samp	\$105.00	\$357	\$357	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	
Semi-volatile organics (625)	3.4	samp	\$208.33	\$715	\$715	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
PCBs (608) (MDL 65 PPT (ng/l))	3.4	samp	\$133.33	\$457	\$457	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Priority Pollutant Metals (200.7)	3.4	samp	\$188.00	\$645	\$645	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Mercury (245.1)	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Sulfides	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Cyanide	3.4	samp	\$35.00	\$120	\$120	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Subt - Batch Tank Qualification				\$2,465	\$2,465		Samples collected by lab technician

PCC-1: SLF 1 - 6

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-1.7d Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/event = 3 samples	sampling & analysis prior to pond discharge
Technician	2.6	hours	\$38.00	\$99	\$99	3 samps @ 2.0 hrs/samp = 6.0 hours @ 3 units/crew = 18.0 hrs/7 units = 2.6 hrs	technician rate: rate 2011 3rd party quote
Sampling Equipment	0.9	hours	\$25.00	\$23	\$23	3 samps @ 2.0 hrs/samp = 6.0 hours @ 1 units/crew = 6.0 hrs/7 units = 0.9 hrs	boat, samplers, meters, etc.
Sampling Supplies	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	bottles, shipping supplies
pH	0.5	samp	\$10.67	\$5	\$5	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Specific Conductance	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Temperature	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Dissolved Oxygen	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Total Dissolved Solids (TDS)	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TDVS (total dissolved volatile solids)	0.5	samp	\$23.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Alkalinity as CaCO3	0.5	samp	\$15.33	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TOC	0.5	samp	\$31.67	\$16	\$16	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ca/Mg Hardness (200.7)	0.5	samp	\$24.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Total Suspended Solids (TSS)	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Settleable Solids	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ammonia (NH3)	0.5	samp	\$22.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Phosphorous	0.5	samp	\$20.00	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TON (TKN-NH3)	0.5	samp	\$41.67	\$21	\$21	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Cyanide	0.5	samp	\$35.00	\$18	\$18	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfates	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfides	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Surfactants (MBAS)	0.5	samp	\$28.33	\$14	\$14	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
BOD-5	0.5	samp	\$30.00	\$15	\$15	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Fluoride	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Chlorine	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Residual Chlorine	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO2	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO3	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
VOCs (624)	0.5	samp	\$105.00	\$53	\$53	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Semi-volatile organics (625)	0.5	samp	\$208.33	\$104	\$104	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	0.5	samp	\$133.33	\$67	\$67	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Oil & Grease (1631)	0.5	samp	\$21.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
total Phenols	0.5	samp	\$26.67	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Priority Pollutant Metals (200.7) *	0.5	samp	\$188.00	\$94	\$94	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (245.1)	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (1631B)	0.5	samp	\$111.67	\$56	\$56	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Acute Toxicity/Bioassy	0.15	samp	\$3,800.00	\$570	\$570	1 sample/ 7 units = 0.15 samples	One quote: actual cost for 2010
Subt - Ponds' Sampling & Analysis				\$1,353	\$1,353	one pond discharge (batch) requiring sampling & analysis prior to discharge	
PCC-1.7e Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischarge qualification report	
Divers (Sr. Technicians)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
SCBA Gear (2 units)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Laborer (Surface Support)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Underwater Inspection	0.15	each	\$4,000.00	\$600	\$600	\$4,000 per event @ 1 event per year/ 7 units = 0.15 events	Based on 2010 site rate of \$3,500
Engineer (Report)	5.7	hours	\$130.00	\$741	\$741	1 events @ 40 hrs/event = 40.0 hours @ 1 units/crew = 40.0 hours/7 units = 5.7	Eng Rate: rate 2011 3rd party quote
Subt - S&A Cert'n & Report				\$1,341	\$1,341	diver(s) to check discharge pipe; also engineer's predischarge qualification report	Fac Pond 8 out of service empty

PCC-1: SLF 1 - 6

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-1.7f Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
<i>FAC Pond 1/2 Inventory in Gallons</i>	2750618.0	<i>gals</i>	<i>n/a</i>			<i>45.8 total hours req'd to pump</i>	& site waters
Labor to pump/discharge		day hrs	<i>n/a</i>	\$0	\$0	Included in PCC-1.7a above	
Tech/Sampler (day shift only)		day hrs	\$38.00	\$0	\$0	Included in PCC-1.7a above	
Settleable Solids	1.6	samp	\$13.33	\$21	\$21	45.8 hours @ 1.0 sample per 4.0 hours = 11.5 samples /7 units = 1.6 samples	analytical price: average of three quotes
Dissolved Oxygen	1.0	samp	-	\$0	\$0	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	Field Measurement analytical price: average of three quotes
Sulfide (total)	1.0	samp	\$25.00	\$25	\$25	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	6.5	total hrs	\$12.34	\$80	\$80	45.8 tot hrs @ 100% total time = 45.8 hours @ 1 units/crew = 45.8 hrs/ 7 units = 6.5 hrs	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam/3,000 LF)	19628.0	foot-hrs	\$0.0110	\$216	\$216	45.8 tot hrs @ 100% total time = 45.8 hours @ 3000 LF/crew = 137400 ft-hrs/7 units = 19,628	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Pump FAC Pond 1/2				\$342	\$342	<i>transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft)</i>	
<i>(Subt: Assemb PCC-1.7 thru 1.7f)</i>				\$414,729	\$414,729	<i>SLF 1 - 6 share of annual O&M and capital costs for leachate collection & treatment: post-closure & perpetual care frequency are equal</i>	
PCC-1.8 Empty Tank T-130						production rate = 1,650 gals per hour; RSM/UP p. 9-171 (33-19-0101)	
Laborer	0	Hour	\$39.00	\$0	\$0	Labor included in third party operation of AWTS	
Pumping Equipment	0	Hour	\$0.00	\$0	\$0	Existing equipment part of tank system	
Tank Trailer (5,500 gals) Post Closure Period	83.7	Hour	\$6.31	\$528	\$0	138,178 gals @ 1650 gals/hr = 83.7 per crew = 1.0 unit/crew = 83.7 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Perpetual Care Period	83.7	Hour	\$6.31	\$0	\$528	138,178 gals @ 1650 gals/hr = 83.7 per crew = 1.0 unit/crew = 83.7 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank T-130				\$528	\$528	<i>pumping leachate from Tank T-130 for transport to Tank T-158</i>	
PCC-1.9 Transp't Leachate Onsite						production rate = 0.5 hours for on-site transport	
Road Tractor (4 x 2, 30 ton) Post Closure Period	12.6	Hour	\$32.45	\$409	\$0	138,178 gals @ 5500 gals/load = 25.1 loads @ 0.5 hrs/trip = 12.6 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Road Tractor (4 x 2, 30 ton) Perpetual Care Period	12.6	Hour	\$32.45	\$0	\$409	138,178 gals @ 5500 gals/load = 25.1 loads @ 0.5 hrs/trip = 12.6 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	Hour	\$45.00	\$0	\$0	Labor included in third party operation of AWTS	
Tank Trailer (5,500 gals) Post Closure Period	12.6	Hour	\$6.31	\$80	\$0	138,178 gals @ 5500 gals/load = 25.1 loads @ 0.5 hrs/trip = 12.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Perpetual Care Period	12.6	Hour	\$6.31	\$0	\$80	138,178 gals @ 5500 gals/load = 25.1 loads @ 0.5 hrs/trip = 12.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transp Leachate Onsite				\$488	\$488	<i>onsite transport of leachate from Tank T-130 to Tank T-158</i>	
PCC-1.10 Fill Tank T-158						production rate = 1,650 gals per hour; RSM/UP p. 9-171 (33-19-0101)	
Laborer	0.0	Hour	\$39.00	\$0	\$0	Labor included in third party operation of AWTS	
Pumping Equipment	0.0	Hour	\$0.00	\$0	\$0	Existing equipment part of tank system	
Tank Trailer (5,500 gals) Post Closure Period	83.7	Hour	\$6.31	\$528	\$0	138,178 gals @ 1650 gals/hr = 83.7 per crew = 1.0 unit/crew = 83.7 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Perpetual Care Period	83.7	Hour	\$6.31	\$0	\$528	138,178 gals @ 1650 gals/hr = 83.7 per crew = 1.0 unit/crew = 83.7 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Fill Tank T-158				\$528	\$528	<i>pumping leachate taken from Tank T-130 into Tank T-158</i>	
<i>(Subt: Assemb PCC-1.8 thru 1.10)</i>				\$1,545	\$1,545	<i>SLF 1 - 6 share of annual leachate transport costs</i>	
PCC-1.11 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
<i>Internal & External Inspections</i>						<i>16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr</i>	
Engineer - Inspection	3.7	Hour	\$130.00	\$481	\$481	0.5 tanks/yr x 8 hrs/tnk x 1.0 per crew = 3.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	7.3	Hour	\$38.00	\$277	\$277	0.5 tanks/yr x 8 hrs/tnk x 2.0 per crew = 7.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.8	Hour	\$130.00	\$234	\$234	0.5 tanks/yr x 4 hrs/tnk x 1.0 per crew = 1.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$992	\$992	<i>inspection of 16 tanks</i>	

PCC-1: SLF 1 - 6

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-1.12 Tank Assessments						thirty (32) tanks requiring only external inspections once every five years by 1 PE	
<i>External Only Inspections</i>						32 tanks @ 5 yr inspect = 6.4 tnks/yr @ 7 areas = 0.9 tnks/yr	
Engineer - Inspection	3.4	Hour	\$130.00	\$442	\$442	0.9 tanks/yr x 4 hrs/tnk x 1.0 per crew = 3.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	0	Hour	\$38.00	\$0	\$0	0.9 tanks/yr x 4 hrs/tnk x 0.0 per crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.7	Hour	\$130.00	\$221	\$221	0.9 tanks/yr x 2 hrs/tnk x 1.0 per crew = 1.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$663	\$663	inspection of 32 tanks	
<i>(Subt: Assemb PCC-1.11 thru 1.12)</i>				\$1,655	\$1,655	SLF 1 - 6 share of annual tank assessment costs: post-closure & perpetual care frequency are equal	
PCC-1.13 Replace Mon Well Pump							
Replace Mon Well Pumps	0.55	pump	\$900.00	\$495	\$495	22 pumps @ 2.5% per year = 0.55 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.55	CF	\$12.45	\$7	\$7	0.55 pumps @ 1.0 CF/pump = 0.55 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.55	pad	\$131.50	\$72	\$72	22 pads @ 2.5% per year = 0.55 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	1.1	CF	\$12.45	\$14	\$14	0.55 pads @ 2.0 CF/pad = 1.1 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.55	each	\$371.63	\$204	\$204	22 covers @ 2.5% per year = 0.55 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.28	CF	\$12.45	\$3	\$3	0.55 covers @ 0.5 CF/cover = 0.28 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$872	\$872	monitoring well pump maintenance and replacement	
<i>(Subt: Assemb PCC-1.13 thru 1.13)</i>				\$872	\$872	SLF 1 - 6 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equal	
PCC-1.14 Drainage Ditch Repair						ditches estimated to be 10 feet in width	
<i>SLF 1 - 6 Drainage Ditches</i>						4000 LF	drainage ditches specific to SLF 1 - 6 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Drainage Ditch Repair	0.016	acre	\$5,698.00	\$91	\$91	6,825 LF x 10 ft/LF = 1.567 acres @ 1.0% per year = 0.016 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Rip-Rap Downchute Channel Repair	70.8	SY	\$44.30	\$3,136	\$3,136	850 LF x 15 FT/LF @ 9.0 SF/SY @ 5.0% per year = 70.8 SY	unit price based upon \$44.30/SY (RMU-1 Assembly 14.19)
Subt - Drainage Ditch Repair				\$3,228	\$3,228	stormwater drainage ditch repair	
PCC-1.15 Drainage Ditch Cleaning						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
<i>SLF 1 - 6 Drainage Ditches</i>						4000 LF	drainage ditches specific to SLF 1 - 6 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Drainage Ditch Sediment Cleaning	8.4	CY	\$2.38	\$20	\$20	6,825.0 LF x 10.0 ft/LF x 0.333 feet (4") = 841.8 CY @ 1%/yr = 8.4 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	5	miles	\$3.25	\$16	\$16	11.4 tons @ 20 tons/load = 0.55 loads @ 5 miles per load = 5 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	11.4	ton	\$35.00	\$399	\$399	8.4 CY @ 1.35 ton/CY = 11.4 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$435	\$435	stormwater drainage ditch cleaning	
PCC-1.16 Basin Cleaning						sediment estimated to be 4 inches deep.	
<i>Basin No. 1</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin No. 2</i>						150000 SF div by 8 units = 18750 SF	
Basin Sediment Cleaning	89.6	CY	\$2.38	\$213	\$213	36,328 SF x 0.333 feet (4") = 448.0 CY @ 20% per year = 89.6 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Basin Sediment	30.0	miles	\$3.25	\$98	\$98	121.0 tons @ 20 tons/load = 6.0 loads @ 5 miles/load = 30 miles	unit price based upon FAC Ponds 1/2 excavation (6.13)
Disposal of Basin Sediment	121.0	ton	\$35.00	\$4,235	\$4,235	89.6 CY @ 1.35 ton/CY = 121.0 tons	unit price based upon FAC Ponds 1/2 excavation (6.14)
Subt--Basin Cleaning				\$4,546	\$4,546	facility stormwater basin cleaning	

PCC-1: SLF 1 - 6

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-1.17 Culvert Maint/Replace						avg culvert = 25' (SLF 1-6) & 40' (sitewide); various diameters		
SLF 1 - 6 Culverts						20 culverts x 25 feet long =	500 LF	culverts specific to SLF 1 - 6 unit
Facility-wide Culverts						20 culverts x 40 feet long =	800 LF div by 8 units =	100 LF culverts in non-specific areas of facility
Culvert Cleaning - 8" diameter avg	600	LF	\$2.14	\$1,283	\$1,283	600.0 LF		DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 8" diam avg (SLF1-6)	25	LF	\$11.61	\$290	\$290	25.0 LF		DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	40	LF	\$22.35	\$894	\$894	40.0 LF		DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	48.8	CY	\$2.96	\$145	\$145	65.0 LF x 0.75 CY/LF =	48.8 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	48.8	CY	\$3.86	\$189	\$189	48.8 CY		DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$2,800	\$2,800	culvert maintenance and replacement		
(Subt: Assemb PCC-1.14 thru 1.17)				\$11,009	\$11,009	SLF 1 - 6 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal		

PCC-1.18 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide		
SLF 1 - 6 Gravel Roads						7200 LF x 15 feet wide =	12000 SY @ 5% per year =	600.0 SY gravel roads specific to SLF 1 - 6 unit
Facility-wide Asphalt Roads						21120 LF x 20 feet wide =	422400 SF @ 1% per year =	4224.0 SF asphalt roads in non-specific areas of facility
SLF 1 - 6 Gravel Road Repair	600	SY	\$3.12	\$1,873	\$1,873	600.0 SY		DEC 2004 rate * deflator (2004-2010)
Facility-wide Asphalt Roads	528	SF	\$1.35	\$712	\$712	4,224.0 SF div by 8 units =	528.0 SF	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$2,585	\$2,585	road maintenance and replacement		
(Subt: Assemb PCC-1.18 thru 1.18)				\$2,585	\$2,585	SLF 1 - 6 road maintenance & replacement		

Total Non-Super hours 409.5

PCC-1.19 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs		
PPE Usage - Level D	38.4	days	\$0.00	\$0	\$0	409.5 hours @ 8 hr/day =	51.2 days @ 75% "D" days =	38.4 days 75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	7.7	days	\$9.00	\$69	\$69	409.5 hours @ 8 hr/day =	51.2 days @ 15% "C" days =	7.7 days 15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	5.1	days	\$25.00	\$128	\$128	409.5 hours @ 8 hr/day =	51.2 days @ 10% "C" days =	5.1 days 10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	10.2	hours	\$75.00	\$765	\$765	409.5 hours @ 2.5% hr/hr =	10.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$962	\$962			
PCC-1.20 Supervision								
Foreman	0	hours	\$65.00	\$0	\$0	Included in PCC-1.7a AWTS Operation		loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs		loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0			
(Subt: Assemb PCC-1.19 thru 1.20)				\$962	\$962	supervision, health & safety, and certification		

PCC 1: SLF 1 6 Direct Cost				\$462,201	\$453,574			
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PCC-1: SLF 1 - 6				
Total Cost Summary				
Cost Category	Proposed Percent of Direct Cost	Proposed Annual Cost Post - Closure Period	Proposed Cost - Annual Perpetual Care	Cost Range
Direct Costs		\$462,201	\$453,574	
Plus Indirect Costs/Profit:				
Site Activity Management Costs	3.00%	\$13,866	\$13,607	Included in Gen'l Contractor G&A/Home Office (note: DEC uses 3%)
Gen'l Contractor G&A/Home Office	4.00%	\$18,488	\$18,143	5% for post-closure. (note: DEC uses 4%)
Pre-Construction Design Costs	1.00%	\$4,622	\$4,536	For post-closure, design costs minimal and included in Assb 1.20. (note: DEC uses 1%)
Engineering During Construction	1.00%	\$4,622	\$4,536	For post-closure, design costs minimal and included in Assb 1.20. (note: DEC uses 1%)
General Contractor Profit	6.00%	\$27,732	\$27,214	Contractor Profit included in unit rates & Gen' Cont G&A/Home Office (Note DEC adds 6%)
Indirect Costs & Profit	15.00%	\$69,330	\$68,036	
Subtotal - Direct/Indirect Costs		\$531,531	\$521,610	
Plus Contingency	15.00%	\$79,730	\$78,241	DEC uses 15% applied to total cost
Total - PCC-1: SLF 1 - 6		\$611,261	\$599,851	

SLF 1-6 Years of Post Closure

Years Since Closure

27

Post Closure Years Remaining

3

Post Closure Costs Remaining Years	\$1,833,782
Post Closure Costs 30-Years	\$18,337,820

PCC-2: SLF 7

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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SLF 7 Parameters - Area	11.2 acres =	54444 SY =	490000 SF =	490 MSF	31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs
SLF 7 Parameters - Fencing					3960 LF = portion of perimeter fencing for SLF 7

SLF 7 Years of Post Closure Closure 1985 Years Since Closure 27 Post Closure Years Remaining 3

PCC-2.1 Annual Visual Inspections						make visual inspections and log results; two persons required	
<i>Post-Closure</i>						Post-Closure Frequencies according to Page 11 of Site-Wide Post-Closure Plan	
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	
Technician - Perimeter Fencing	1.5	hours	\$38.00	\$57	\$0	3 hrs/insp x 2.0 insp/year x 2 per crew/ 8 facility units = 1.5 hours	
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x 1.8 insp/year x 2 per crew = 7.2 hours	
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above	
Subtotal - Annual Inspections Post-Cls				\$847	\$0	SLF 7 post-closure inspections	
<i>Perpetual Care</i>						Perpetual Care Frequencies according to Page 11 of Site-Wide Post-Closure Plan	
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	
Technician - Perimeter Fencing	1.0	hours	\$38.00	\$0	\$38	4 hrs/insp x 1.0 insp/year x 2 per crew/ 8 facility units = 1.0 hours	
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x 1.04 insp/year x 2 per crew = 4.2 hours	
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above	
Subtotal - Annual Inspections Perp-Care				\$0	\$502	SLF 7 perpetual care inspections	
(Subt: Assemb PCC-2.1 thru 2.1)				\$847	\$502	SLF 7 visual inspections	

PCC-2.2 Perimeter Fence Maint.						one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected	
Replacement of Fencing	79.2	LF	\$20.00	\$1,584	\$1,584	31680 LF div by 8 units x 2% per year = 79.2 LF	
Subt - Perimeter Fence Maint.				\$1,584	\$1,584	SLF 7 share of perimeter fence inspection & replacement	
(Subt: Assemb PCC-2.2 thru 2.2)				\$1,584	\$1,584	SLF 7 share of perimeter fence inspection & replacement: post-closure & perpetual care frequency are equal	

PCC-2.3 Groundwater Monitoring						sampling crew composed of two technicians; 11 monitoring wells (10 for unit + 1 upgradient)	
<i>Monit'g Events & Samples/Event</i>						0.0 quart'ly + 22.0 semi-ann + 0.0 b-ann'l x 1.05 each = 23.1 samp	
<i>Post-Closure</i>							
Technician	46.2	hours	\$38.00	\$1,756	\$0	23.1 samps @ 1.0 hrs/samp x 2 per crew = 46.2 hours	
Sampling Supplies	23.1	samp	\$25.00	\$578	\$0	23.1 samples	
VOCs	23.1	samp	\$105.00	\$2,426	\$0	23.1 samples	
Subt - GW Monitoring				\$4,759	\$0	post closure groundwater monitoring	
<i>Monit'g Events & Samples/Event</i>						11.0 wells @ sample/5 years 1.05 each = 2.3 samp/yr	
<i>Perpetual Care</i>						Perpetual care groundwater monitoring once every five years	
Technician	4.6	hours	\$38.00	\$0	\$175	2.3 samps @ 1.0 hrs/samp x 2 per crew = 4.6 hours	
Sampling Supplies	2.3	samp	\$25.00	\$0	\$58	2.3 samples	
VOCs	2.3	samp	\$105.00	\$0	\$242	2.3 samples	
Subt - GW Monitoring				\$0	\$474	perpetual care groundwater monitoring	

PCC-2: SLF 7

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-2.4 Outfalls 002,003,004 SPDES Mon						production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure	
<i>Weekly Sampling Events</i>						12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples	sampling & analysis according to SPDES Permit
Technician	39	hours	\$38.00	\$1,482	\$1,482	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	
Pickup Truck	39	hours	\$10.45	\$408	\$408	39.0 hours	
Sampling Equipment	39	hours	\$5.00	\$195	\$195	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	samplers, meters, etc.
Sampling Supplies	19.5	samp	\$5.00	\$98	\$98	19.5 samples	bottles, shipping supplies
pH	19.5	samp	\$10.67	\$208	\$208	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Specific Conductance	19.5	samp	\$13.33	\$260	\$260	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Total Suspended Solids (TSS)	16.2	samp	\$13.33	\$216	\$216	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Total Dissolved solids	16.2	samp	\$15.00	\$243	\$243	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Settleable Solids	76.1	samp	\$13.33	\$1,015	\$1,015	3 outfalls @ 3.9 samp/OF/week @ 52 weeks = 608.4 samples/8 units = 76.1 samples	daily during flow assume 3.9/week: Average of three quotes
BOD-5	4.5	samp	\$31.67	\$143	\$143	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Dissolved Oxygen	4.5	samp	\$17.50	\$79	\$79	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Ammonia (NH3)	4.5	samp	\$22.67	\$102	\$102	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
VOCs (624)	9	samp	\$105.00	\$945	\$945	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Oil & Grease (1631)	9	samp	\$40.00	\$360	\$360	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Copper	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Zinc	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Phenols	4.5	samp	\$26.67	\$120	\$120	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	19.5	samp	\$133.33	\$2,600	\$2,600	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
2-Chloroethyl vinyl ether	0	samp	\$86.67	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Dichlorodifluoromethane	9	samp	\$75.00	\$675	\$675	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Methylene chloride	0	samp	\$75.00	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Shipping	19.5	samp	\$5.00	\$98	\$98		
Subt - SPDES Outfall Sampling & Analysis				\$9,403	\$9,403	three outfalls requiring weekly sampling & analysis for each year during post-closure	
PCC-2.4a Discharge Monitoring Report						Monthly Discharge Monitoring Reports	
Engineer (Report)	3	hours	\$130.00	\$390	\$390	12 months @ 2 hrs/event = 24.0 hours @ div by 8 units = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Clerical	6	hours	\$45.00	\$270	\$270	12 months @ 4 hrs/event = 48.0 hours @ div by 8 units = 6.0 hours	
Subt - Discharge Monitoring Report (Subt: Assemb PCC-2.3 thru 2.4a)				\$660	\$660	submittal of SPDES Permit required Discharge Monitoring Report (DMR)	
				\$14,822	\$10,537	SLF 7 groundwater & stormwater monitoring activities	
PCC-2.5 Landfill Cover Maint.							
Replacement of Cover	0.112	acre	\$20,973.33	\$2,349	\$2,349	11.2 acre @ 1.0% per year = 0.112 acres/yr	unit price based upon vegetation, topsoil, from RMU-1
Subt - Landfill Cover Maint.				\$2,349	\$2,349	SLF 7 upper cap maintenance and replacement	Assemblies 14.17 thru 14.18
PCC-2.6 Mowing/Grooming							
Mowing	490.0	MSF	\$3.21	\$1,574	\$1,574	490.0 MSF @ 1.0 per year = 490.0 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	98.0	MSF	\$3.82	\$374	\$374	490.0 MSF @ 1.0 per 5.0 years = 98.0 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming (Subt: Assemb PCC-2.5 thru 2.6)				\$1,949	\$1,949	SLF 7 mowing and fertilizing	
				\$4,298	\$4,298	SLF 7 cap maintenance activities: post-closure & perpetual care frequency are equal	

PCC-2: SLF 7

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-2.7 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment - Post Closure	50832	gal	\$0.2195	\$11,156	\$0	50,832 gals estimated annual leachate volume based average previous 5-years post closure	offsite deep well injection, WM Vickery, OH
Leachate Treatment - Perpetual Care	50832	gal	\$0.2195	\$0	\$11,156	50,832 gals estimated annual leachate volume based average previous 5-years post closure	
Off-site Transport to finish treatment - Post Closure	2726	miles	\$3.50	\$9,541	\$0	50,832 gals @ 5500 gal/tankr = 9.2 loads @ 295 miles/trip = 2,726 miles	Actual 2010 costs, site experience
Off-site Transport to finish treatment - Perpetual Care	2726	miles	\$3.50	\$0	\$9,541	50,832 gals @ 5500 gal/tankr = 9.2 loads @ 295 miles/trip = 2,726 miles	Actual 2010 costs, site experience
Leach Treat Syst. Capital Repl Cost	1	LS	\$17,642.00	\$17,642	\$17,642	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each	DEC estimate of AWTS capital replacement costs @ 25 yrs
Laborer	24	hours	\$39.00	\$936	\$936	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	24	hours	\$38.00	\$912	\$912	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Electrical Costs - Pumps	39.2	KWH	\$0.086	\$3	\$3	35.0 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 39.2 KWH/yr	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump	0.2	pump	\$2,456.00	\$491	\$491	1 pump per 5 years = 0.2 pumps	250 gpm, 5 hp pump, Site Experience
Replacement of Pumps	1	pump	\$1,382.00	\$1,382	\$1,382	6 pumps @ 16.7% per year = 1.0 pumps	1.5 hp submersible pump, site experience
Replacement of Pump Dischg Hose	1	hose	\$211.54	\$212	\$212	1 pumps x 1 per pump = 1 hoses	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	10	CF	\$12.45	\$125	\$125	1 pu/hos @ 10 CF/pump = 10 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	11	LF	\$53.25	\$586	\$586	1,100 LF @ 1.0% per year = 11.0 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	3.6	CF	\$12.45	\$45	\$45	11.0 LF @ 0.33 CF/LF = 3.6 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	0.5	LF	\$73.50	\$37	\$37	50 LF @ 1.0% per year = 0.5 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	0.3	CF	\$12.45	\$4	\$4	0.5 LF @ 0.50 CF/LF = 0.3 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt Leachate Coll Syst Mgmt				\$43,070	\$43,070	annual O&M costs plus capital replacement of treatment system, pumps, and piping	
PCC-2.7a AWTS Operation						Shift operation of the AWTS for 12 months	no DEC estimate for this activity: DEC Estimate included in unit rate
Material handler/basic labor	274.3	hours	\$39.00	\$10,698	\$10,698	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Maintenance/basic labor	548.6	hours	\$39.00	\$21,395	\$21,395	240 days @ 8 hours/day = 1920.0 hours @ 2 units/crew/7 units = 548.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Operator/technician	834.3	hours	\$38.00	\$31,703	\$31,703	365 days @ 8 hours/day = 2920.0 hours @ 2 units/crew/7 units = 834.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Laboratory/technician	274.3	hours	\$38.00	\$10,423	\$10,423	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
AWT Foreman/Supervisor	274.3	hours	\$65.00	\$17,830	\$17,830	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - AWTS Operation				\$92,049	\$92,049	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
PCC-2.7b Site Waters Treatment							
Leachate Treatment - Post Closure	201193.00	gal	\$0.0313	\$6,297	\$0	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Leachate Treatment - Perpetual Care	201193.00	gal	\$0.0313	\$0	\$6,297	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Tank Trailer (5,500 gals) Collect	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Road Tractor (4 x 2, 30 ton) Transport	18.30	hours	\$32.45	\$594	\$594	1,408,349 gals @ 5500 gals/load = 256.1 loads @ 0.5 hrs/trip = 128 hrs/7 units = 18.3 hrs	RSM/HC p. 472 (line item 01 54 33 40 7410)
Tank Trailer (5,500 gals) Transport	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Fill T-100	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Site Waters Treatment				\$9,199	\$9,199	SLF-7 share of annual site waters collection & treatment: post-closure & perpetual care frequency are equal	Labor included in PCC-1.7a
PCC-2.7c Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
VOCs (624)	3.4	samp	\$105.00	\$357	\$357	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Semi-volatile organics (625)	3.4	samp	\$208.33	\$715	\$715	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
PCBs (608) (MDL 65 PPT (ng/l))	3.4	samp	\$133.33	\$457	\$457	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Priority Pollutant Metals (200.7)	3.4	samp	\$188.00	\$645	\$645	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Mercury (245.1)	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Sulfides	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Cyanide	3.4	samp	\$35.00	\$120	\$120	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Subt - Batch Tank Qualification				\$2,465	\$2,465	SLF-7 share of annual batch tank qualification	Samples collected by lab technician

PCC-2: SLF 7

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-2.7d Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/evnt= 3 samples	sampling & analysis prior to pond discharge
Technician	2.6	hours	\$38.00	\$99	\$99	3 samps @ 2.0 hrs/samp = 6.0 hours @ 3 units/crew = 18.0 hrs/7 units = 2.6 hrs	technician rate: rate 2011 3rd party quote
Sampling Equipment	0.9	hours	\$25.00	\$23	\$23	3 samps @ 2.0 hrs/samp = 6.0 hours @ 1 units/crew = 6.0 hrs/7 units = 0.9 hrs	boat, samplers, meters, etc.
Sampling Supplies	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	bottles, shipping supplies
pH	0.5	samp	\$10.67	\$5	\$5	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Specific Conductance	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Temperature	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Dissolved Oxygen	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Total Dissolved solids (TDS)	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TDVS (total dissolved volatile solids)	0.5	samp	\$23.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Alkalinity as CaCO3	0.5	samp	\$15.33	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TOC	0.5	samp	\$31.67	\$16	\$16	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ca/Mg Hardness (200.7)	0.5	samp	\$24.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Total Suspended Solids (TSS)	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Settleable Solids	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ammonia (NH3)	0.5	samp	\$22.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Phosphorous	0.5	samp	\$20.00	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TON (TKN-NH3)	0.5	samp	\$41.67	\$21	\$21	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Cyanide	0.5	samp	\$35.00	\$18	\$18	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfates	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfides	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Surfactants (MBAS)	0.5	samp	\$28.33	\$14	\$14	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
BOD-5	0.5	samp	\$30.00	\$15	\$15	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Fluoride	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Chlorine	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Residual Chlorine	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO2	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO3	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
VOCs (624)	0.5	samp	\$105.00	\$53	\$53	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Semi-volatile organics (625)	0.5	samp	\$208.33	\$104	\$104	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	0.5	samp	\$133.33	\$67	\$67	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Oil & Grease (1631)	0.5	samp	\$21.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
total Phenols	0.5	samp	\$26.67	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Priority Pollutant Metals (200.7) *	0.5	samp	\$188.00	\$94	\$94	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (245.1)	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (1631B)	0.5	samp	\$111.67	\$56	\$56	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Acute Toxicity/Bioassy	0.15	samp	\$3,800.00	\$570	\$570	1 sample/ 7 units = 0.15 samples	One quote: actual cost for 2010
Subt - Ponds' Sampling & Analysis				\$1,353	\$1,353	one pond discharge (batch) requiring sampling & analysis prior to discharge	
PCC-2.7e Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischarge qualification report	
Divers (Sr. Technicians)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
SCBA Gear (2 units)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Laborer (Surface Support)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Underwater Inspection	0.15	each	\$4,000.00	\$600	\$600	\$4,000 per event @ 1 event per year/ 7 units = 0.15 events	Based on 2010 site rate of \$3,500
Engineer (Report)	5.7	hours	\$130.00	\$741	\$741	1 events @ 40 hrs/event = 40.0 hours @ 1 units/crew = 40.0 hours/7 units = 5.7	Eng Rate: rate 2011 3rd party quote
Subt - S&A Cert'n & Report				\$1,341	\$1,341	diver(s) to check discharge pipe; also engineer's predischarge qualification report	Fac Pond 8 out of service empty

PCC-2: SLF 7

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-2.7f Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
<i>FAC Pond 1/2 Inventory in Gallons</i>	2750618.0	<i>gals</i>	<i>n/a</i>			<i>45.8 total hours req'd to pump</i>	& site waters
Labor to pump/discharge		day hrs		\$0	\$0	Included in PCC-2.7a above	
Tech/Sampler (day shift only)		day hrs	\$38.00	\$0	\$0	Included in PCC-2.7a above	
Settleable Solids	1.6	samp	\$13.33	\$21	\$21	45.8 hours @ 1.0 sample per 4.0 hours = 11.5 samples /7 units = 1.6 samples	analytical price: average of three quotes
Dissolved Oxygen	1.0	samp	-	\$0	\$0	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	analytical price: average of three quotes
Sulfide (total)	1.0	samp	\$25.00	\$25	\$25	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	6.5	total hrs	\$12.34	\$80	\$80	45.8 tot hrs @ 100% total time = 45.8 hours @ 1 units/crew = 45.8 hrs/ 7 units = 6.5 hrs	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam/3,000 LF)	19628.0	foot-hrs	\$0.0110	\$216	\$216	45.8 tot hrs @ 100% total time = 45.8 hours @ 3000 LF/crew = 137400 ft-hrs/7 units = 19,628	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Pump FAC Pond 1/2				\$342	\$342	transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft)	
<i>(Subt: Assemb PCC-2.7 thru 2.7f)</i>				\$149,820	\$149,820	SLF 7 share of annual O&M and capital costs for leachate collection & treatment: post-closure & perpetual care frequency are equal	
PCC-2.8 N/A (See Note 2)						SLF-7 leachate pumped directly to tankers for offsite disposal	
Subt - N/A				\$0	\$0		
PCC-2.9 N/A (See Note 2)							
Subt - N/A				\$0	\$0		
PCC-2.10 N/A (See Note 2)							
Subt - N/A				\$0	\$0		
<i>(Subt: Assemb PCC-2.8 thru 2.10)</i>				\$0	\$0		
PCC-2.11 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
<i>Internal & External Inspections</i>						<i>16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr</i>	
Engineer - Inspection	3.7	Hour	\$130.00	\$481	\$481	0.5 tanks/yr x 8 hrs/tnk x 1.0 per crew = 3.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	7.3	Hour	\$38.00	\$277	\$277	0.5 tanks/yr x 8 hrs/tnk x 2.0 per crew = 7.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.8	Hour	\$130.00	\$234	\$234	0.5 tanks/yr x 4 hrs/tnk x 1.0 per crew = 1.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$992	\$992	inspection of 16 tanks	
PCC-2.12 Tank Assessments						thirty (32 tanks requiring only external inspections once every five years by 1 PE	
<i>External Only Inspections</i>						<i>32 tanks @ 5 yr inspect = 6.4 tnks/yr @ 7 areas = 0.9 tnks/yr</i>	
Engineer - Inspection	3.4	Hour	\$130.00	\$442	\$442	0.9 tanks/yr x 4 hrs/tnk x 1.0 per crew = 3.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	0	Hour	\$38.00	\$0	\$0	0.9 tanks/yr x 4 hrs/tnk x 0.0 per crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.7	Hour	\$130.00	\$221	\$221	0.9 tanks/yr x 2 hrs/tnk x 1.0 per crew = 1.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$663	\$663	inspection of 32 tanks	
<i>(Subt: Assemb PCC-2.11 thru 2.12)</i>				\$1,655	\$1,655	SLF 7 share of annual tank assessment costs: post-closure & perpetual care frequency are equal	
PCC-2.13 Replace Mon Well Pump							
Replace Mon Well Pumps	0.28	pump	\$900.00	\$252	\$252	11 pumps @ 2.5% per year = 0.28 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.55	CF	\$12.45	\$7	\$7	0.28 pumps @ 1.0 CF/pump = 0.55 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.28	pad	\$131.50	\$37	\$37	11 pads @ 2.5% per year = 0.28 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	0.55	CF	\$12.45	\$7	\$7	0.28 pads @ 2.0 CF/pad = 0.55 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.28	each	\$371.63	\$104	\$104	11 covers @ 2.5% per year = 0.28 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.14	CF	\$12.45	\$2	\$2	0.28 covers @ 0.5 CF/cover = 0.14 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$484	\$484	monitoring well pump maintenance and replacement	
<i>(Subt: Assemb PCC-2.13 thru 2.13)</i>				\$484	\$484	SLF 7 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equal	

PCC-2: SLF 7

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-2.14 Drainage Ditch Repair						ditches estimated to be 10 feet in width	
<i>SLF 7 Drainage Ditches</i>						2800 LF	<i>drainage ditches specific to SLF 7 unit</i>
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF	<i>drainage ditches in non-specific areas of facility</i>
Drainage Ditch Repair	0.013	acre	\$5,698.00	\$74	\$74	5,625 LF x 10 ft/LF = 1.291 acres @ 1.0% per year = 0.013 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Rip-Rap Downchute Channel Repair	35	SY	\$44.30	\$1,551	\$1,551	420 LF x 15 FT/LF @ 9.0 SF/SY @ 5.0% per year = 35.0 SY	unit price based upon \$44.30/SY (RMU-1 Assembly 14.19)
Subt - Drainage Ditch Repair				\$1,625	\$1,625	<i>stormwater drainage ditch repair</i>	
PCC-2.15 Drainage Ditch Cleaning						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
<i>SLF 7 Drainage Ditches</i>						2800 LF	<i>drainage ditches specific to SLF 7 unit</i>
<i>Facility-wide Drainage Ditches</i>						@ 8 units = 2825 LF	<i>drainage ditches in non-specific areas of facility</i>
Drainage Ditch Sediment Cleaning	6.9	CY	\$2.38	\$16	\$16	5,625.0 LF x 10.0 ft/LF x 0.333 feet (4") = 693.8 CY @ 1%/yr = 6.9 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	5	miles	\$3.25	\$16	\$16	9.4 tons @ 20 tons/load = 0.48 loads @ 5 miles per load = 5 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	9.4	ton	\$35.00	\$329	\$329	6.9 CY @ 1.35 ton/CY = 9.4 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$362	\$362	<i>stormwater drainage ditch cleaning</i>	
PCC-2.16 Basin Cleaning						sediment estimated to be 4 inches deep.	
<i>Basin No. 1</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin No. 2</i>						150000 SF div by 8 units = 18750 SF	
Basin Sediment Cleaning	89.6	CY	\$2.38	\$213	\$213	36,328 SF x 0.333 feet (4") = 448.0 CY @ 20% per year = 89.6 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Basin Sediment	30.0	miles	\$3.25	\$98	\$98	121.0 tons @ 20 tons/load = 6.0 loads @ 5 miles/load = 30 miles	unit price based upon FAC Ponds 1/2 excavation (6.13)
Disposal of Basin Sediment	121.0	ton	\$35.00	\$4,235	\$4,235	89.6 CY @ 1.35 ton/CY = 121.0 tons	unit price based upon FAC Ponds 1/2 excavation (6.14)
Subt--Basin Cleaning				\$4,546	\$4,546	<i>facility stormwater basin cleaning</i>	
PCC-2.17 Culvert Maint/Replace						avg culvert = 25' (SLF 7) & 40' (sitewide); various diameters	
<i>SLF 7 Culverts</i>						12 culverts x 25 feet long = 300 LF	<i>culverts specific to SLF 7 unit</i>
<i>Facility-wide Culverts</i>						20 culverts x 40 feet long = 800 LF div by 8 units = 100 LF	<i>culverts in non-specific areas of facility</i>
Culvert Cleaning - 8" diameter avg	400	LF	\$2.14	\$855	\$855	400.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 8" diam avg (SLF 7)	25	LF	\$11.61	\$290	\$290	25.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	40	LF	\$22.35	\$894	\$894	40.0 LF	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	48.8	CY	\$2.96	\$145	\$145	65.0 LF x 0.75 CY/LF = 48.8 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	48.8	CY	\$3.86	\$189	\$189	48.8 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$2,373	\$2,373	<i>culvert maintenance and replacement</i>	
(Subt: Assemb PCC-2.14 thru 2.17)				\$8,905	\$8,905	<i>SLF 7 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal</i>	
PCC-2.18 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
<i>SLF 7 Gravel Roads</i>						1540 LF x 15 feet wide = 2566.7 SY @ 5% per year = 256.7 SY	<i>gravel roads specific to SLF 7 unit</i>
<i>Facility-wide Asphalt Roads</i>						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 4224.0 SF	<i>asphalt roads in non-specific areas of facility</i>
SLF 7 Gravel Road Repair	256.7	SY	\$3.12	\$801	\$801	600.0 SY	DEC 2004 rate * deflator (2004-2010)
Facility-wide Asphalt Roads	528	SF	\$1.35	\$712	\$712	4,224.0 SF div by 8 units = 528.0 SF	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$1,514	\$1,514	<i>road maintenance and replacement</i>	
(Subt: Assemb PCC-2.18 thru 2.18)				\$1,514	\$1,514	<i>SLF 7 road maintenance & replacement</i>	

Total Non-Super hours

174.5

PCC-2: SLF 7

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-2.19 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	16.4	days	\$0.00	\$0	\$0	174.5 hours @ 8 hr/day = 21.8 days @ 75% "D" days = 16.4 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	3.3	days	\$9.00	\$30	\$30	174.5 hours @ 8 hr/day = 21.8 days @ 15% "C" days = 3.3 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	2.1	days	\$25.00	\$53	\$53	174.5 hours @ 8 hr/day = 21.8 days @ 10% "C" days = 2.1 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	4.4	hours	\$75.00	\$330	\$330	174.5 hours @ 2.5% hr/hr = 4.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$412	\$412		
PCC-2.20 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in PCC-2.7a AWTS Operation	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
(Subt: Assemb PCC-2.19 thru 2.20)				\$412	\$412	supervision, health & safety, and certification	
PCC-2: SLF 7 Direct Cost				\$184,342	\$179,711		

Note 2: A leachate transportation cost has been added for SLF 7 to account for present practice of completing treatment and disposal at an HW facility in Vickery, Ohio. Cost of treatment is assumed to be the same as on-site treatment costs.

PCC-2: SLF 7				
Total Cost Summary				
Cost Category	Proposed Percent of Direct Cost	Proposed Annual Cost Post - Closure Period	Proposed Cost - Annual Perpetual Care	Cost Range
Direct Costs		\$184,342	\$179,711	
Plus Indirect Costs/Profit:				
Site Activity Management Costs	3.00%	\$5,530	\$5,391.33	Included in Gen'l Contractor G&A/Home Office (note: DEC uses 3%)
Gen'l Contractor G&A/Home Office	4.00%	\$7,374	\$7,188	5% for post-closure. (note: DEC uses 4%)
Pre-Construction Design Costs	1.00%	\$1,843	\$1,797.11	For post-closure, design costs minimal and included in Assb 2.20. (note: DEC uses 1%)
Engineering During Construction	1.00%	\$1,843	\$1,797.11	For post-closure, design costs minimal and included in Assb 2.20. (note: DEC uses 1%)
General Contractor Profit	6.00%	\$11,060	\$10,783	Contractor Profit included in unit rates & Gen' Cont G&A/Home Office (Note DEC adds 6%)
Indirect Costs & Profit	15.00%	\$27,651	\$26,957	
Subtotal - Direct/Indirect Costs		\$211,993	\$206,668	
Plus Contingency	15.00%	\$31,799	\$31,000	DEC uses 15% applied to total cost
Total - PCC-2: SLF 7		\$243,792	\$237,668	

SLF 7 Years of Post Closure

Years Since Closure

27

Post Closure Years Remaining

3

Post Closure Costs Remaining Years	\$731,375
Post Closure Costs 30-Years	\$7,313,752

PCC-3: SLF 10

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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SLF 10 Parameters - Area						6.9 acres = 33333 SY = 300000 SF = 300 MSF	31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs
SLF 10 Parameters - Fencing							3960 LF = portion of perimeter fencing for SLF 10

SLF 10 Years of Post Closure Closure 1987 Years Since Closure 24 6

PCC-3.1 Annual Visual Inspections							
make visual inspections and log results; two persons required							
<i>Post-Closure</i>							
Post-Closure Frequencies according to Page 11 of Site-Wide Post-Closure Plan							
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.5	hours	\$38.00	\$57	\$0	3 hrs/insp x 2.0 insp/year x 2 per crew/ 8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x 1.8 insp/year x 2 per crew = 7.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above	this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections Post-Cls				\$847	\$0	SLF 10 post-closure inspections	
<i>Perpetual Care</i>							
Perpetual Care Frequencies according to Page 11 of Site-Wide Post-Closure Plan							
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.0	hours	\$38.00	\$0	\$38	4 hrs/insp x 1.0 insp/year x 2 per crew/ 8 facility units = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x 1.04 insp/year x 2 per crew = 4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above	this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections Perp-Care				\$0	\$502	SLF 10 perpetual care inspections	
(Subt: Assemb PCC-3.1 thru 3.1)				\$847	\$502	SLF 10 visual inspections	

PCC-3.2 Perimeter Fence Maint.							
one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected							
Replacement of Fencing	79.2	LF	\$20.00	\$1,584	\$1,584	31680 LF div by 8 units x 2% per year = 79.2 LF	Site Experience 2010 Rate
Subt - Perimeter Fence Maint.				\$1,584	\$1,584	SLF 10 share of perimeter fence inspection & replacement	
(Subt: Assemb PCC-3.2 thru 3.2)				\$1,584	\$1,584	SLF 10 share of perimeter fence inspection & replacement: post-closure & perpetual care frequency are equal	

PCC-3.3 Groundwater Monitoring							
sampling crew composed of two technicians; 8 monitoring wells (7 for unit + 1 upgradient)							
<i>Monit'g Events & Samples/Event</i>							
0.0 quart/ly + 16.0 semi-ann + 0.0 b-ann/1 x 1.05 each = 16.8 samp includes 5% QA sampling							
<i>Post-Closure</i>							
Technician	33.6	hours	\$38.00	\$1,277	\$0	16.8 samps @ 1.0 hrs/samp x 2 per crew = 33.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	16.8	samp	\$25.00	\$420	\$0	16.8 samples	bottles, shipping supplies
VOCs	16.8	samp	\$105.00	\$1,764	\$0	16.8 samples	Average of three quotes
Subt - GW Monitoring				\$3,461	\$0	post closure groundwater monitoring	
<i>Monit'g Events & Samples/Event</i>							
8.0 wells @ sample/5 years 1.05 each = 1.7 samp/yr							
<i>Perpetual Care</i>							
Perpetual care groundwater monitoring once every five years							
Technician	3.4	hours	\$38.00	\$0	\$129	1.7 samps @ 1.0 hrs/samp x 2 per crew = 3.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	1.7	samp	\$25.00	\$0	\$43	1.7 samples	bottles, shipping supplies
VOCs	1.7	samp	\$105.00	\$0	\$179	1.7 samples	Average of three quotes
Subt - GW Monitoring				\$0	\$350	perpetual care groundwater monitoring	

PCC-3: SLF 10

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-3.4 Outfalls 002,003,004 SPDES Mon						production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure	
<i>Weekly Sampling Events</i>						12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples	sampling & analysis according to SPDES Permit
Technician	39	hours	\$38.00	\$1,482	\$1,482	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	
Pickup Truck	39	hours	\$10.45	\$408	\$408	39.0 hours	
Sampling Equipment	39	hours	\$5.00	\$195	\$195	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	samplers, meters, etc.
Sampling Supplies	19.5	samp	\$5.00	\$98	\$98	19.5 samples	bottles, shipping supplies
pH	19.5	samp	\$10.67	\$208	\$208	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Specific Conductance	19.5	samp	\$13.33	\$260	\$260	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Total Suspended Solids (TSS)	16.2	samp	\$13.33	\$216	\$216	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Total Dissolved Solids	16.2	samp	\$15.00	\$243	\$243	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Settleable Solids	76.1	samp	\$13.33	\$1,015	\$1,015	3 outfalls @ 3.9 samp/OF/week @ 52 weeks = 608.4 samples/8 units 76.1 samples	daily during flow assume 3.9/week: Average of three quotes
BOD-5	4.5	samp	\$31.67	\$143	\$143	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Dissolved Oxygen	4.5	samp	\$17.50	\$79	\$79	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Ammonia (NH3)	4.5	samp	\$22.67	\$102	\$102	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
VOCs (624)	9	samp	\$105.00	\$945	\$945	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Oil & Grease (1631)	9	samp	\$40.00	\$360	\$360	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Copper	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Zinc	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Phenols	4.5	samp	\$26.67	\$120	\$120	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	19.5	samp	\$133.33	\$2,600	\$2,600	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
2-Chloroethyl vinyl ether	0	samp	\$86.67	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Dichlorodifluoromethane	9	samp	\$75.00	\$675	\$675	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Methylene chloride	0	samp	\$75.00	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Shipping	19.5	samp	\$5.00	\$98	\$98		
Subt - SPDES Outfall Sampling & Analysis				\$9,403	\$9,403	three outfalls requiring weekly sampling & analysis for each year during post-closure	
PCC-3.4a Discharge Monitoring Report						Monthly Discharge Monitoring Reports	
Engineer (Report)	3	hours	\$130.00	\$390	\$390	12 months @ 2 hrs/event = 24.0 hours @ div by 8 units = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Clerical	6	hours	\$45.00	\$270	\$270	12 months @ 4 hrs/event = 48.0 hours @ div by 8 units = 6.0 hours	
Subt - Discharge Monitoring Report				\$660	\$660	submission of SPDES Permit required Discharge Monitoring Report (DMR)	
(Subt: Assemb PCC-3.3 thru 3.4a)				\$13,524	\$10,414	SLF 10 groundwater & stormwater monitoring activities	

PCC-3.5 Landfill Cover Maint.							
Replacement of Cover	0.069	acre	\$20,973.33	\$1,447	\$1,447	6.9 acre @ 1.0% per year = 0.069 acres/yr	unit price based upon vegetation, topsoil, from RMU-1, Assemblies 14.17 thru 14.18
Subt - Landfill Cover Maint.				\$1,447	\$1,447	SLF 10 upper cap maintenance and replacement	
PCC-3.6 Mowing/Grooming							
Mowing	300.0	MSF	\$3.21	\$964	\$964	300.0 MSF @ 1.0 per year = 300.0 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	60.0	MSF	\$3.82	\$229	\$229	300.0 MSF @ 1.0 per 5.0 years = 60.0 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming				\$1,193	\$1,193	SLF 10 mowing and fertilizing	
(Subt: Assemb PCC-3.5 thru 3.6)				\$2,640	\$2,640	SLF 10 cap maintenance activities: post-closure & perpetual care frequency are equal	

PCC-3: SLF 10

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-3.7 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment - Post Closure	59774.2	gal	\$0.2195	\$13,118	\$0	\$9,774.2 gals estimated annual leachate volume based average previous 5-years post closure	
Leachate Treatment - Perpetual Care	59774.2	gal	\$0.2195	\$0	\$13,118	\$9,774.2 gals estimated annual leachate volume based average previous 5-years post closure	
Leach Treat Syst. Capital Repl Cost	1	LS	\$17,642.00	\$17,642	\$17,642	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each	DEC estimate of AWTS capital replacement costs @ 25 yrs
Laborer	24	hours	\$39.00	\$936	\$936	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	24	hours	\$38.00	\$912	\$912	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Electrical Costs - Pumps	64.9	KWH	\$0.086	\$6	\$6	58.0 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 64.9 KWH/yr	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-110	1	pump	\$2,456.00	\$2,456	\$2,456	1 pump per 5 years = 0.2 pumps	250 gpm, 5 hp pump, Site Experience
Replacement of Pumps	1	pump	\$1,382.00	\$1,382	\$1,382	5 pumps x 20.0% pu/yr = 1.0 pumps	1.5 hp submersible pump, site experience
Replacement of Pump Dischg Hose	1	hose	\$211.54	\$212	\$212	5 pumps x 20.0% per pump = 1.0 hoses	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	10	CF	\$12.45	\$125	\$125	1 pu/hos @ 10 CF/pump = 10 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	11	LF	\$53.25	\$586	\$586	1,100 LF @ 1.0% per year = 11.0 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	3.6	CF	\$12.45	\$45	\$45	11.0 LF @ 0.33 CF/LF = 3.6 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	1.1	LF	\$73.50	\$81	\$81	110 LF @ 1.0% per year = 1.1 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	0.6	CF	\$12.45	\$7	\$7	1.1 LF @ 0.50 CF/LF = 0.6 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt Leachate Coll Syst Mgmt				\$37,507	\$37,507	annual O&M costs plus capital replacement of treatment system, pumps, and piping	
PCC-3.7a AWTS Operation						Shift operation of the AWTS for 12 months	no DEC estimate for this activity: DEC Estimate included in unit rate
Material handler/basic labor	274.3	hours	\$39.00	\$10,698	\$10,698	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Maintenance/basic labor	548.6	hours	\$39.00	\$21,395	\$21,395	240 days @ 8 hours/day = 1920.0 hours @ 2 units/crew/7 units = 548.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Operator/technician	834.3	hours	\$38.00	\$31,703	\$31,703	365 days @ 8 hours/day = 2920.0 hours @ 2 units/crew/7 units = 834.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Laboratory/technician	274.3	hours	\$38.00	\$10,423	\$10,423	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
AWT Foreman/Supervisor	274.3	hours	\$65.00	\$17,830	\$17,830	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - AWTS Operation				\$92,049	\$92,049	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
PCC-3.7b Site Waters Treatment							
Leachate Treatment - Post Closure	201193.00	gal	\$0.0313	\$6,297	\$0	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Leachate Treatment - Perpetual Care	201193.00	gal	\$0.0313	\$0	\$6,297	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Tank Trailer (5,500 gals) Collect	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Road Tractor (4 x 2, 30 ton) Transport	18.30	hours	\$32.45	\$594	\$594	1,408,349 gals @ 5500 gals/load = 256.1 loads @ 0.5 hrs/trip = 128 hrs/7 units = 18.3 hrs	RSM/HC p. 472 (line item 01 54 33 40 7410)
Tank Trailer (5,500 gals) Transport	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Fill T-100	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Site Waters Treatment				\$9,199	\$9,199	SLF-10 share of annual site waters collection & treatment: post-closure & perpetual care frequency are equal	Labor included in PCC-1.7a
PCC-3.7c Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
VOCs (624)	3.4	samp	\$105.00	\$357	\$357	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	
Semi-volatile organics (625)	3.4	samp	\$208.33	\$715	\$715	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
PCBs (608) (MDL 65 PPT (ng/l))	3.4	samp	\$133.33	\$457	\$457	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Priority Pollutant Metals (200.7)	3.4	samp	\$188.00	\$645	\$645	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Mercury (245.1)	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Sulfides	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Cyanide	3.4	samp	\$35.00	\$120	\$120	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Subt - Batch Tank Qualification				\$2,465	\$2,465	SLF-10 share of annual batch tank qualification	Samples collected by lab technician

PCC-3: SLF 10

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-3.7d Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/evnt= 3 samples	sampling & analysis prior to pond discharge
Technician	2.6	hours	\$38.00	\$99	\$99	3 samps @ 2.0 hrs/samp = 6.0 hours @ 3 units/crew = 18.0 hrs/7 units = 2.6 hrs	technician rate: rate 2011 3rd party quote
Sampling Equipment	0.9	hours	\$25.00	\$23	\$23	3 samps @ 2.0 hrs/samp = 6.0 hours @ 1 units/crew = 6.0 hrs/7 units = 0.9 hrs	boat, samplers, meters, etc.
Sampling Supplies	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	bottles, shipping supplies
pH	0.5	samp	\$10.67	\$5	\$5	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Specific Conductance	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Temperature	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Dissolved Oxygen	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Total Dissolved solids (TDS)	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TDVS (total dissolved volatile solids)	0.5	samp	\$23.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Alkalinity as CaCO3	0.5	samp	\$15.33	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TOC	0.5	samp	\$31.67	\$16	\$16	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ca/Mg Hardness (200.7)	0.5	samp	\$24.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Total Suspended Solids (TSS)	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Settleable Solids	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ammonia (NH3)	0.5	samp	\$22.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Phosphorous	0.5	samp	\$20.00	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TON (TKN-NH3)	0.5	samp	\$41.67	\$21	\$21	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Cyanide	0.5	samp	\$35.00	\$18	\$18	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfates	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfides	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Surfactants (MBAS)	0.5	samp	\$28.33	\$14	\$14	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
BOD-5	0.5	samp	\$30.00	\$15	\$15	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Fluoride	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Chlorine	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Residual Chlorine	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO2	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO3	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
VOCs (624)	0.5	samp	\$105.00	\$53	\$53	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Semi-volatile organics (625)	0.5	samp	\$208.33	\$104	\$104	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	0.5	samp	\$133.33	\$67	\$67	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Oil & Grease (1631)	0.5	samp	\$21.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
total Phenols	0.5	samp	\$26.67	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Priority Pollutant Metals (200.7) *	0.5	samp	\$188.00	\$94	\$94	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (245.1)	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (1631B)	0.5	samp	\$111.67	\$56	\$56	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Acute Toxicity/Bioassy	0.15	samp	\$3,800.00	\$570	\$570	1 sample/ 7 units = 0.15 samples	One quote: actual cost for 2010
Subt - Pond Sampling & Analysis				\$1,353	\$1,353	one pond discharge (batch) requiring sampling & analysis prior to discharge	
PCC-3.7e Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischarge qualification report	
Divers (Sr. Technicians)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
SCBA Gear (2 units)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Laborer (Surface Support)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Underwater Inspection	0.15	each	\$4,000.00	\$600	\$600	\$4,000 per event @ 1 event per year/ 7 units = 0.15 events	Based on 2010 site rate of \$3,500
Engineer (Report)	5.7	hours	\$130.00	\$741	\$741	1 events @ 40 hrs/event = 40.0 hours @ 1 units/crew = 40.0 hours/7 units = 5.7	Eng Rate: rate 2011 3rd party quote
Subt - S&A Cert'n & Report				\$1,341	\$1,341	diver(s) to check discharge pipe; also engineer's predischarge qualification report	Fac Pond 8 out of service empty

PCC-3: SLF 10

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-3.7f Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
FAC Pond 1/2 Inventory in Gallons	2750618.0	gals	n/a			45.8 total hours req'd to pump	& site waters
Labor to pump/discharge		day hrs	n/a	\$0	\$0	Included in PCC-3.7a above	
Tech/Sampler (day shift only)		day hrs	\$38.00	\$0	\$0	Included in PCC-3.7a above	
Settleable Solids	1.6	samp	\$13.33	\$21	\$21	45.8 hours @ 1.0 sample per 4.0 hours = 11.5 samples /7 units = 1.6 samples	analytical price: average of three quotes
Dissolved Oxygen	1.0	samp	-	\$0	\$0	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	Field Measurement
Sulfide (total)	1.0	samp	\$25.00	\$25	\$25	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	6.5	total hrs	\$12.34	\$80	\$80	45.8 tot hrs @ 100% total time = 45.8 hours @ 1 units/crew = 45.8 hrs/ 7 units = 6.5 hrs	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam/3,000 LF)	19628.0	foot-hrs	\$0.0110	\$216	\$216	45.8 tot hrs @ 100% total time = 45.8 hours @ 3000 LF/crew = 137400 ft-hrs/7 units = 19,628	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Pump FAC Pond 1/2				\$342	\$342	transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft)	
(Subt: Assemb PCC-3.7 thru 3.7f)				\$144,256	\$144,256	SLF 10 share of annual O&M and capital costs for leachate collection & treatment: post-closure & perpetual care frequency are equal	

PCC-3.8 Empty Tank T-109							
Laborer	0	Hour	\$39.00	\$0	\$0	Labor included in third party operation of AWTS	
Pumping Equipment	0	Hour	\$0.00	\$0	\$0	Existing equipment part of tank system	
Tank Trailer (5,500 gals) Post Closure Period	36.2	Hour	\$6.31	\$228	\$0	59,774.2 gals @ 1650 gals/hr = 36.2 per crew = 1.0 unit/crew = 36.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Perpetual Care Period	36.2	Hour	\$6.31	\$0	\$228	59,774.2 gals @ 1650 gals/hr = 36.2 per crew = 1.0 unit/crew = 36.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank T-109				\$228	\$228	pumping leachate from Tank T-109 for transport to Tank T-158	

PCC-3.9 Transp't Leachate Onsite						production rate = 0.5 hours for on-site transport	
Road Tractor (4 x 2, 30 ton) Post Closure Period	5.4	Hour	\$32.45	\$175	\$175	59,774.2 gals @ 5500 gals/load = 10.8 loads @ 0.5 hrs/trip = 5.4 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Road Tractor (4 x 2, 30 ton) Perpetual Care Period	5.4	Hour	\$32.45	\$175	\$175	59,774.2 gals @ 5500 gals/load = 10.8 loads @ 0.5 hrs/trip = 5.4 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0	Hour	\$45.00	\$0	\$0	Labor included in third party operation of AWTS	
Tank Trailer (5,500 gals) Post Closure Period	5.4	Hour	\$6.31	\$34	\$0	59,774.2 gals @ 5500 gals/load = 10.8 loads @ 0.5 hrs/trip = 5.4 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Perpetual Care Period	5.4	Hour	\$6.31	\$0	\$34	59,774.2 gals @ 5500 gals/load = 10.8 loads @ 0.5 hrs/trip = 5.4 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transp Leachate Onsite				\$385	\$385	onsite transport of leachate from Tank T-109 to Tank T-158	

PCC-3.10 Fill Tank T-158						production rate = 1,650 gals per hour; RSM/UP p. 9-171 (33-19-0101)	
Laborer	0	Hour	\$39.00	\$0	\$0	Labor included in third party operation of AWTS	
Pumping Equipment	0	Hour	\$0.00	\$0	\$0	Existing equipment part of tank system	
Tank Trailer (5,500 gals) Post Closure Period	36.2	Hour	\$6.31	\$228	\$0	59,774.2 gals @ 1650 gals/hr = 36.2 per crew = 1.0 unit/crew = 36.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Perpetual Care Period	36.2	Hour	\$6.31	\$0	\$228	59,774.2 gals @ 1650 gals/hr = 36.2 per crew = 1.0 unit/crew = 36.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Fill Tank T-158				\$228	\$228	pumping leachate taken from Tank T-109 into Tank T-158	
(Subt: Assemb PCC-3.8 thru 3.10)				\$841	\$841	SLF 10 share of annual leachate transport costs	

PCC-3.11 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
Internal & External Inspections						16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr	
Engineer - Inspection	3.7	Hour	\$130.00	\$481	\$481	0.5 tanks/yr x 8 hrs/tnk x 1.0 per crew = 3.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	7.3	Hour	\$38.00	\$277	\$277	0.5 tanks/yr x 8 hrs/tnk x 2.0 per crew = 7.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.8	Hour	\$130.00	\$234	\$234	0.5 tanks/yr x 4 hrs/tnk x 1.0 per crew = 1.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$992	\$992	inspection of 16 tanks	

PCC-3: SLF 10

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-3.12 Tank Assessments							
						thirty (32) tanks requiring only external inspections once every five years by 1 PE	
<i>External Only Inspections</i>						30 tanks @	5 yr inspect = 6.0 tnks/yr @ 7 areas = 0.9 tnks/yr
Engineer - Inspection	3.4	Hour	\$130.00	\$442	\$442	0.9 tanks/yr x 4 hrs/tnk x 1.0 per crew =	3.4 hours loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	0	Hour	\$38.00	\$0	\$0	0.9 tanks/yr x 4 hrs/tnk x 0.0 per crew =	0.0 hours loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.7	Hour	\$130.00	\$221	\$221	0.9 tanks/yr x 2 hrs/tnk x 1.0 per crew =	1.7 hours loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$663	\$663	inspection of 32 tanks	
<i>(Subt: Assemb PCC-3.11 thru 3.12)</i>				\$1,655	\$1,655	SLF 10 share of annual tank assessment costs: post-closure & perpetual care frequency are equal	

PCC-3.13 Replace Mon Well Pump							
Replace Mon Well Pumps	0.2	pump	\$900.00	\$180	\$180	8 pumps @ 2.5% per year = 0.20 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.2	CF	\$12.45	\$2	\$2	0.20 pumps @ 1.0 CF/pump = 0.20 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.2	pad	\$131.50	\$26	\$26	8 pads @ 2.5% per year = 0.20 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	0.4	CF	\$12.45	\$5	\$5	0.20 pads @ 2.0 CF/pad = 0.40 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.2	each	\$371.63	\$74	\$74	8 covers @ 2.5% per year = 0.20 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.1	CF	\$12.45	\$1	\$1	0.20 covers @ 0.5 CF/cover = 0.10 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$365	\$365	monitoring well pump maintenance and replacement	
<i>(Subt: Assemb PCC-3.13 thru 3.13)</i>				\$365	\$365	SLF 10 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equal	

PCC-3.14 Drainage Ditch Repair							
<i>SLF 10 Drainage Ditches</i>						ditches estimated to be 10 feet in width	
<i>Facility-wide Drainage Ditches</i>						2200 LF	drainage ditches specific to SLF 10 unit
<i>Drainage Ditch Repair</i>						22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Drainage Ditch Repair	0.012	acre	\$5,698.00	\$68	\$68	5,025 LF x 10 ft/LF = 1.154 acres @ 1.0% per year = 0.012 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Rip-Rap Downchute Channel Repair	20	SY	\$44.30	\$886	\$886	240 LF x 15 FT/LF @ 9.0 SF/SY = 5.0% per year = 20.0 SY	unit price based upon \$44.30/SY (RMU-1 Assembly 14.19)
Subt - Drainage Ditch Repair				\$954	\$954	stormwater drainage ditch repair	

PCC-3.15 Drainage Ditch Cleaning							
<i>SLF 10 Drainage Ditches</i>						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
<i>Facility-wide Drainage Ditches</i>						2200 LF	drainage ditches specific to SLF 10 unit
<i>Drainage Ditch Sediment Cleaning</i>						22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Drainage Ditch Sediment Cleaning	6.2	CY	\$2.38	\$15	\$15	5,025.0 LF x 10.0 ft/LF x 0.333 feet (4") = 619.8 CY @ 1%/yr = 6.2 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	5	miles	\$3.25	\$16	\$16	8.4 tons @ 20 tons/load = 0.42 loads @ 5 miles per load = 5 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	8.4	ton	\$35.00	\$294	\$294	6.2 CY @ 1.35 ton/CY = 8.4 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$325	\$325	stormwater drainage ditch cleaning	

PCC-3.16 Basin Cleaning							
<i>Basin No. 1</i>						sediment estimated to be 4 inches deep.	
<i>Basin No. 2</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin Sediment Cleaning</i>						150000 SF div by 8 units = 18750 SF	
Basin Sediment Cleaning	89.6	CY	\$2.38	\$213	\$213	36,328 SF x 0.333 feet (4") = 448.0 CY @ 20% per year = 89.6 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Basin Sediment	30.0	miles	\$3.25	\$98	\$98	121.0 tons @ 20 tons/load = 6.0 loads @ 5 miles/load = 30 miles	unit price based upon FAC Ponds 1/2 excavation (6.13)
Disposal of Basin Sediment	121.0	ton	\$35.00	\$4,235	\$4,235	89.6 CY @ 1.35 ton/CY = 121.0 tons	unit price based upon FAC Ponds 1/2 excavation (6.14)
Subt--Basin Cleaning				\$4,546	\$4,546	facility stormwater basin cleaning	

PCC-3: SLF 10

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-3.17 Culvert Maint/Replace						avg culvert = 25' (SLF 10) & 40' (sitewide); various diameters	
<i>SLF 10 Culverts</i>						<i>7 culverts x 25 feet long = 175 LF</i>	
<i>Facility-wide Culverts</i>						<i>20 culverts x 40 feet long = 800 LF div by 8 units = 100 LF</i>	
Culvert Cleaning - 8" diameter avg	275	LF	\$2.14	\$588	\$588	275.0 LF	culverts specific to SLF 10 unit
Repl Culvert - 8" diam avg (SLF 10)	25	LF	\$11.61	\$290	\$290	25.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	40	LF	\$22.35	\$894	\$894	40.0 LF	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	48.8	CY	\$2.96	\$145	\$145	65.0 LF x 0.75 CY/LF = 48.8 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	48.8	CY	\$3.86	\$189	\$189	48.8 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$2,106	\$2,106	<i>culvert maintenance and replacement</i>	
<i>(Subt: Assemb PCC-3.14 thru 3.17)</i>						<i>SLF 10 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal</i>	
				\$7,931	\$7,931		

PCC-3.18 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
<i>SLF 10 Gravel Roads</i>						<i>1800 LF x 15 feet wide = 3000 SY @ 5% per year = 150.0 SY</i>	
<i>Facility-wide Asphalt Roads</i>						<i>21120 LF x 20 feet wide = 42240 SF @ 1% per year = 4224.0 SF</i>	
SLF 10 Gravel Road Repair	150	SY	\$3.12	\$468	\$468	150.0 SY	gravel roads specific to SLF 10 unit
Facility-wide Asphalt Roads	528	SF	\$1.35	\$712	\$712	4,224.0 SF div by 8 units = 528.0 SF	asphalt roads in non-specific areas of facility
Subt - Road Maint/Replacement				\$1,181	\$1,181	<i>road maintenance and replacement</i>	DEC 2004 rate * deflator (2004-2010)
<i>(Subt: Assemb PCC-3.14 thru 3.18)</i>						<i>SLF 10 road maintenance & replacement</i>	
				\$1,181	\$1,181		DEC 2004 rate * deflator (2004-2010)

Total Non-Super hours 161.9

PCC-3.19 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	15.2	days	\$0.00	\$0	\$0	161.9 hours @ 8 hr/day = 20.2 days @ 75% "D" days = 15.2 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	3	days	\$9.00	\$27	\$27	161.9 hours @ 8 hr/day = 20.2 days @ 15% "C" days = 3.0 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	2	days	\$25.00	\$50	\$50	161.9 hours @ 8 hr/day = 20.2 days @ 10% "C" days = 2.0 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	4	hours	\$75.00	\$300	\$300	161.9 hours @ 2.5% hr/hr = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$377	\$377		
PCC-3.20 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in PCC-3.7a AWTS Operation	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
<i>(Subt: Assemb PCC-3.19 thru 3.20)</i>						<i>supervision, health & safety, and certification</i>	
				\$377	\$377		

PCC 3: SLF 10 Direct Cost				\$175,203	\$171,746		
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PCC-3: SLF 10				
Total Cost Summary - Basic Opt.				
Cost Category	Proposed Percent of Direct Cost	Proposed Annual Cost Post - Closure Period	Proposed Cost - Annual Perpetual Care	Cost Range
Direct Costs		\$175,203	\$171,746	
Plus Indirect Costs/Profit:				
Site Activity Management Costs	3.00%	\$5,256	\$5,152.39	Included in Gen'l Contractor G&A/Home Office (note: DEC uses 3%)
Gen'l Contractor G&A/Home Office	4.00%	\$7,008	\$6,870	5% for post-closure. (note: DEC uses 4%)
Pre-Construction Design Costs	1.00%	\$1,752	\$1,717.46	For post-closure, design costs minimal and included in Assb 3.20. (note: DEC uses 1%)
Engineering During Construction	1.00%	\$1,752	\$1,717.46	For post-closure, design costs minimal and included in Assb 3.20. (note: DEC uses 1%)
General Contractor Profit	6.00%	\$10,512	\$10,305	Contractor Profit included in unit rates & Gen' Cont G&A/Home Office (Note DEC adds 6%)
Indirect Costs & Profit	15.00%	\$26,280	\$25,762	
Subtotal - Direct/Indirect Costs		\$201,483	\$197,508	
Plus Contingency	15.00%	\$30,222	\$29,626	DEC uses 15% applied to total cost
Total - PCC-3: SLF 10		\$231,706	\$227,134	

SLF 10 Years of Post Closure

Years Since Closure

25

Post Closure Years Remaining

5

Post Closure Costs Remaining Years	\$1,158,528
Post Closure Costs 30-Years	\$6,951,166

PCC-4: SLF 11

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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SLF 11 Parameters - Area	6.9 acres =	33333 SY =	300000 SF =	300 MSF	31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs
SLF 11 Parameters - Fencing	3960 LF = portion of perimeter fencing for SLF 10				

SLF 11 Years of Post Closure Closure 1992 Years Since Closure 20 Post Closure Years Remaining 10

PCC-4.1 Annual Visual Inspections						make visual inspections and log results; two persons required	
<i>Post-Closure</i>						Post-Closure Frequencies according to Page 11 of Site-Wide Post-Closure Plan	
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.5	hours	\$38.00	\$57	\$0	3 hrs/insp x 2.0 insp/year x 2 per crew/ 8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x 1.8 insp/year x 2 per crew = 7.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above	this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections Post-Cls				\$847	\$0	SLF 10 post-closure inspections	
<i>Perpetual Care</i>						Perpetual Care Frequencies according to Page 11 of Site-Wide Post-Closure Plan	
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.0	hours	\$38.00	\$0	\$38	4 hrs/insp x 1.0 insp/year x 2 per crew/ 8 facility units = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x 1.04 insp/year x 2 per crew = 4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above	this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections Perp-Care				\$0	\$502	SLF 11 perpetual care inspections	
(Subt: Assemb PCC-4.1 thru 4.1)				\$847	\$502	SLF 11 visual inspections	

PCC-4.2 Perimeter Fence Maint.						one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected	
Replacement of Fencing	79.2	LF	\$20.00	\$1,584	\$1,584	31680 LF div by 8 units x 2% per year = 79.2 LF	Site Experience 2010 Rate
Subt - Perimeter Fence Maint.				\$1,584	\$1,584	SLF 11 share of perimeter fence inspection & replacement	
(Subt: Assemb PCC-4.2 thru 4.2)				\$1,584	\$1,584	SLF 11 share of perimeter fence inspection & replacement: post-closure & perpetual care frequency are equal	

PCC-4.3 Groundwater Monitoring						sampling crew composed of two technicians; 23 monitoring wells (22 for unit + 1 upgradient)	
<i>Monit'g Events & Samples/Event</i>						0.0 quart/ly + 46.0 semi-ann + 0.0 b-ann'l x 1.05 each = 48.3 samp	
<i>Post-Closure</i>							
Technician	96.6	hours	\$38.00	\$3,671	\$0	48.3 samps @ 1.0 hrs/samp x 2 per crew = 96.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	48.3	samp	\$25.00	\$1,208	\$0	48.3 samples	bottles, shipping supplies
VOCs	48.3	samp	\$105.00	\$5,072	\$0	48.3 samples	Average of three quotes
Subt - GW Monitoring				\$9,950	\$0	post closure groundwater monitoring	
<i>Monit'g Events & Samples/Event</i>						23.0 wells @ sample/5 years 1.05 each = 4.8 samp/yr	
<i>Perpetual Care</i>						Perpetual care groundwater monitoring once every five years	
Technician	9.7	hours	\$38.00	\$0	\$369	4.8 samps @ 1.0 hrs/samp x 2 per crew = 9.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	4.8	samp	\$25.00	\$0	\$120	4.8 samples	bottles, shipping supplies
VOCs	4.8	samp	\$105.00	\$0	\$504	4.8 samples	Average of three quotes
Subt - GW Monitoring				\$0	\$993	perpetual care groundwater monitoring	

PCC-4: SLF 11

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-4.4 Outfalls 002,003,004 SPDES Mon						production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure	
<i>Weekly Sampling Events</i>						12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples	sampling & analysis according to SPDES Permit
Technician	39	hours	\$38.00	\$1,482	\$1,482	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	
Pickup Truck	39	hours	\$10.45	\$408	\$408		
Sampling Equipment	39	hours	\$5.00	\$195	\$195	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	samplers, meters, etc.
Sampling Supplies	19.5	samp	\$5.00	\$98	\$98	19.5 samples	bottles, shipping supplies
pH	19.5	samp	\$10.67	\$208	\$208	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Specific Conductance	19.5	samp	\$13.33	\$260	\$260	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Total Suspended Solids (TSS)	16.2	samp	\$13.33	\$216	\$216	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Total Dissolved solids	16.2	samp	\$15.00	\$243	\$243	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Settleable Solids	76.1	samp	\$13.33	\$1,015	\$1,015	3 outfalls @ 3.9 samp/OF/week @ 52 weeks = 608.4 samples/8 units 76.1 samples	daily during flow assume 3.9/week: Average of three quotes
BOD-5	4.5	samp	\$31.67	\$143	\$143	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Dissolved Oxygen	4.5	samp	\$17.50	\$79	\$79	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Ammonia (NH3)	4.5	samp	\$22.67	\$102	\$102	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
VOCs (624)	9	samp	\$105.00	\$945	\$945	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Oil & Grease (1631)	9	samp	\$40.00	\$360	\$360	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Copper	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Zinc	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Phenols	4.5	samp	\$26.67	\$120	\$120	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	19.5	samp	\$133.33	\$2,600	\$2,600	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
2-Chloroethyl vinyl ether	0	samp	\$86.67	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Dichlorodifluoromethane	9	samp	\$75.00	\$675	\$675	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Methylene chloride	0	samp	\$75.00	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Shipping	19.5	samp	\$5.00	\$98	\$98		
Subt - SPDES Outfall Sampling & Analysis				\$9,403	\$9,403	three outfalls requiring weekly sampling & analysis for each year during post-closure	
PCC-4.4a Discharge Monitoring Report						Monthly Discharge Monitoring Reports	
Engineer (Report)	3	hours	\$130.00	\$390	\$390	12 months @ 2 hrs/event = 24.0 hours @ div by 8 units = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Clerical	6	hours	\$45.00	\$270	\$270	12 months @ 4 hrs/event = 48.0 hours @ div by 8 units = 6.0 hours	
Subt - Discharge Monitoring Report (Subt: Assemb PCC-4.3 thru 4.4a)				\$660	\$660	submittal of SPDES Permit required Discharge Monitoring Report (DMR)	
				\$20,013	\$11,056	SLF 11 groundwater & stormwater monitoring activities	

PCC-4.5 Landfill Cover Maint.							
Replacement of Cover	0.257	acre	\$20,973.33	\$5,390	\$5,390	25.7 acre @ 1.0% per year = 0.257 acres/yr	unit price based upon vegetation, topsoil, from RMU-1
Subt - Landfill Cover Maint.				\$5,390	\$5,390	SLF 11 upper cap maintenance and replacement	Assemblies 14.17 thru 14.18
PCC-4.6 Mowing/Grooming							
Mowing	1120.0	MSF	\$3.21	\$3,599	\$3,599	1,120.0 MSF @ 1.0 per year = 1,120.0 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	224.0	MSF	\$3.82	\$856	\$856	1,120.0 MSF @ 1.0 per 5.0 years = 224.0 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming (Subt: Assemb PCC-4.5 thru 4.6)				\$4,454	\$4,454	SLF 10 mowing and fertilizing	
				\$9,844	\$9,844	SLF 10 cap maintenance activities: post-closure & perpetual care frequency are equal	

PCC-4: SLF 11

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-4.7 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment	147659	gal	\$0.3532	\$52,155	\$0	147,659 gals estimated annual leachate volume based average previous 5-years post closure	unit price derived from AWTS O&M model
Leachate Treatment - Perpetual Care	147659	gal	\$0.3532	\$0	\$52,155	147,659 gals estimated annual leachate volume based average previous 5-years post closure	
Leach Treat Syst. Capital Repl Cost	1	LS	\$17,642.00	\$17,642	\$17,642	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each	DEC estimate of AWTS capital replacement costs @ 25 yrs
Laborer	24.0	hours	\$39.00	\$936	\$936	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	24.0	hours	\$38.00	\$912	\$912	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Leachate VOC Samp & Analysis	10.5	sample	\$105.00	\$1,103	\$1,103	10 sumps x 1 sampl/yr = 10.5 per sample = 10.5 samples	average of 3 third party quotes
Leachate Organic Priority Pollutant	10.5	sample	\$633.33	\$6,650	\$6,650	10 sumps x 1 sampl/yr = 10.5 per sample = 10.5 samples	average of 3 third party quotes
Leachate Metals Samp & Analysis	10.5	sample	\$155.00	\$1,628	\$1,628	10 sumps x 1 sampl/yr = 10.5 per sample = 10.5 samples	average of 3 third party quotes
Electrical Costs - Pumps	222.0	KWH	\$0.086	\$19	\$19	198.4 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 222.0 KWH	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-111	0.2	pump	\$2,456.00	\$491	\$491	1 pump per 5 years = 0.2 pumps	250 gpm, 5 hp pump, Site Experience
Replace Primary Sump Pumps	1.0	pump	\$1,382.00	\$1,382	\$1,382	14 pumps x 1.0 pu/yr = 1.0 pumps	1.5 hp submersible pump, site experience
Replace Secondary Sump Pumps	1.0	pump	\$850.00	\$850	\$850	10 pumps x 1.0 pu/yr = 1.0 pumps	4" subm pump, 0.5 hp, , site experience
Replacement of Pump Dischg Hose	2.0	hose	\$211.54	\$423	\$423	2 pumps x 1 per pump = 2 hoses	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	20.0	CF	\$12.45	\$249	\$249	2 pu/hos @ 10 CF/pump = 20 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	62.3	LF	\$53.25	\$3,318	\$3,318	6,225 LF @ 1.0% per year = 62.3 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	20.5	CF	\$12.45	\$255	\$255	62 LF @ 0.33 CF/LF = 20.5 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	11.2	LF	\$73.50	\$823	\$823	11 LF @ 0.50 CF/LF = 5.6 CF	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	5.6	CF	\$12.45	\$70	\$70	11 LF @ 0.50 CF/LF = 5.6 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Leachate Coll Syst Mgmt				\$88,905	\$88,905	annual O&M costs plus capital replacement of treatment system, pumps, and piping	
PCC-4.7a AWTS Operation						Shift operation of the AWTS for 12 months	no DEC estimate for this activity: DEC Estimate included in unit rate
Material handler/basic labor	274.3	hours	\$39.00	\$10,698	\$10,698	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Maintenance/basic labor	548.6	hours	\$39.00	\$21,395	\$21,395	240 days @ 8 hours/day = 1920.0 hours @ 2 units/crew/7 units = 548.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Operator/technician	834.3	hours	\$38.00	\$31,703	\$31,703	365 days @ 8 hours/day = 2920.0 hours @ 2 units/crew/7 units = 834.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Laboratory/technician	274.3	hours	\$38.00	\$10,423	\$10,423	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
AWT Foreman/Supervisor	274.3	hours	\$65.00	\$17,830	\$17,830	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - AWTS Operation				\$92,049	\$92,049	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
PCC-4.7b Site Waters Treatment							
Leachate Treatment - Post Closure	201193.00	gal	\$0.0313	\$6,297	\$0	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Leachate Treatment - Perpetual Care	201193.00	gal	\$0.0313	\$0	\$6,297	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Tank Trailer (5,500 gals) Collect	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Road Tractor (4 x 2, 30 ton) Transport	18.30	hours	\$32.45	\$594	\$594	1,408,349 gals @ 5500 gals/load = 256.1 loads @ 0.5 hrs/trip = 128 hrs/7 units = 18.3 hrs	RSM/HC p. 472 (line item 01 54 33 40 7410)
Tank Trailer (5,500 gals) Transport	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Fill T-100	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Site Waters Treatment				\$9,199	\$9,199	SLF-11 share of annual site waters collection & treatment: post-closure & perpetual care frequency are equal	Labor included in PCC-1.7a
PCC-4.7c Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
VOCs (624)	3.4	samp	\$105.00	\$357	\$357	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Semi-volatile organics (625)	3.4	samp	\$208.33	\$715	\$715	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
PCBs (608) (MDL 65 PPT (ng/l))	3.4	samp	\$133.33	\$457	\$457	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Priority Pollutant Metals (200.7)	3.4	samp	\$188.00	\$645	\$645	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Mercury (245.1)	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Sulfides	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Cyanide	3.4	samp	\$35.00	\$120	\$120	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Subt - Batch Tank Qualification				\$2,465	\$2,465	SLF-11 share of annual batch tank qualification	Samples collected by lab technician

PCC-4: SLF 11

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-4.7d Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/event = 3 samples	sampling & analysis prior to pond discharge
Technician	2.6	hours	\$38.00	\$99	\$99	3 samps @ 2.0 hrs/samp = 6.0 hours @ 3 units/crew = 18.0 hrs/7 units = 2.6 hrs	technician rate: rate 2011 3rd party quote
Sampling Equipment	0.9	hours	\$25.00	\$23	\$23	3 samps @ 2.0 hrs/samp = 6.0 hours @ 1 units/crew = 6.0 hrs/7 units = 0.9 hrs	boat, samplers, meters, etc.
Sampling Supplies	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	bottles, shipping supplies
pH	0.5	samp	\$10.67	\$5	\$5	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Specific Conductance	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Temperature	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Dissolved Oxygen	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Total Dissolved solids (TDS)	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TDVS (total dissolved volatile solids)	0.5	samp	\$23.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Alkalinity as CaCO3	0.5	samp	\$15.33	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TOC	0.5	samp	\$31.67	\$16	\$16	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ca/Mg Hardness (200.7)	0.5	samp	\$24.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Total Suspended Solids (TSS)	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Settleable Solids	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ammonia (NH3)	0.5	samp	\$22.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Phosphorous	0.5	samp	\$20.00	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TON (TKN-NH3)	0.5	samp	\$41.67	\$21	\$21	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Cyanide	0.5	samp	\$35.00	\$18	\$18	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfates	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfides	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Surfactants (MBAS)	0.5	samp	\$28.33	\$14	\$14	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
BOD-5	0.5	samp	\$30.00	\$15	\$15	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Fluoride	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Chlorine	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Residual Chlorine	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO2	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO3	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
VOCs (624)	0.5	samp	\$105.00	\$53	\$53	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Semi-volatile organics (625)	0.5	samp	\$208.33	\$104	\$104	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	0.5	samp	\$133.33	\$67	\$67	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Oil & Grease (1631)	0.5	samp	\$21.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
total Phenols	0.5	samp	\$26.67	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Priority Pollutant Metals (200.7) *	0.5	samp	\$188.00	\$94	\$94	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (245.1)	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (1631B)	0.5	samp	\$111.67	\$56	\$56	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Acute Toxicity/Bioassy	0.15	samp	\$3,800.00	\$570	\$570	1 sample/ 7 units = 0.15 samples	One quote: actual cost for 2010
Subt - Pond Sampling & Analysis				\$1,353	\$1,353	one pond discharge (batch) requiring sampling & analysis prior to discharge	
PCC-4.7e Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischarge qualification report	
Divers (Sr. Technicians)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
SCBA Gear (2 units)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Laborer (Surface Support)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Underwater Inspection	0.15	each	\$4,000.00	\$600	\$600	\$4,000 per event @ 1 event per year/ 7 units = 0.15 events	Based on 2010 site rate of \$3,500
Engineer (Report)	5.7	hours	\$130.00	\$741	\$741	1 events @ 40 hrs/event = 40.0 hours @ 1 units/crew = 40.0 hours/7 units = 5.7	Eng Rate: rate 2011 3rd party quote
Subt - S&A Cert'n & Report				\$1,341	\$1,341	diver(s) to check discharge pipe; also engineer's predischarge qualification report	Fac Pond 8 out of service empty

PCC-4: SLF 11

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-4.7f Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
<i>FAC Pond 1/2 Inventory in Gallons</i>	2750618.0	<i>gals</i>	<i>n/a</i>			<i>45.8 total hours req'd to pump</i>	& site waters
Labor to pump/discharge		day hrs	<i>n/a</i>	\$0	\$0	Included in PCC-4.7a above	
Tech/Sampler (day shift only)		day hrs	\$38.00	\$0	\$0	Included in PCC-4.7a above	
Settleable Solids	1.6	samp	\$13.33	\$21	\$21	45.8 hours @ 1.0 sample per 4.0 hours = 11.5 samples /7 units = 1.6 samples	analytical price: average of three quotes
Dissolved Oxygen	1.0	samp	-	\$0	\$0	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	Field Measurement analytical price: average of three quotes
Sulfide (total)	1.0	samp	\$25.00	\$25	\$25	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	6.5	total hrs	\$12.34	\$80	\$80	45.8 tot hrs @ 100% total time = 45.8 hours @ 1 units/crew = 45.8 hrs/ 7 units = 6.5 hrs	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam/3,000 LF)	19628.0	foot-hrs	\$0.0110	\$216	\$216	45.8 tot hrs @ 100% total time = 45.8 hours @ 3000 LF/crew = 137400 ft-hrs/7 units = 19,628	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Pump FAC Pond 1/2				\$342	\$342	<i>transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft)</i>	
<i>(Subt: Assemb PCC-4.7 thru 4.7f)</i>				\$195,654	\$195,654	<i>SLF 11 share of annual O&M and capital costs for leachate collection & treatment: post-closure & perpetual care frequency are equal</i>	
PCC-4.8 Empty Tank T-108							
Laborer	0	Hour	\$39.00	\$0	\$0	Labor included in third party operation of AWTS	
Pumping Equipment	0	Hour	\$0.00	\$0	\$0	Existing equipment part of tank system	
Tank Trailer (5,500 gals) Post Closure Period	89.5	Hour	\$6.31	\$565	\$0	147,659 gals @ 1650 gals/hr = 89.5 per crew = 1.0 unit/crew = 89.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Perpetual Care Period	89.5	Hour	\$6.31	\$0	\$565	147,659 gals @ 1650 gals/hr = 89.5 per crew = 1.0 unit/crew = 89.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank T-108				\$565	\$565	<i>pumping leachate from Tank T-108 for transport to Tank T-158</i>	
PCC-4.9 Transp't Leachate Onsite						production rate = 0.5 hours for on-site transport	
Road Tractor (4 x 2, 30 ton) Post Closure Period	13.4	Hour	\$32.45	\$435	\$435	147,659 gals @ 5500 gals/load = 26.8 loads @ 0.5 hrs/trip = 13.4 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Road Tractor (4 x 2, 30 ton) Perpetual Care Period	13.4	Hour	\$32.45	\$435	\$435	147,659 gals @ 5500 gals/load = 26.8 loads @ 0.5 hrs/trip = 13.4 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0	Hour	\$45.00	\$0	\$0	Labor included in third party operation of AWTS	
Tank Trailer (5,500 gals) Post Closure Period	13.4	Hour	\$6.31	\$85	\$0	147,659 gals @ 5500 gals/load = 26.8 loads @ 0.5 hrs/trip = 13.4 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Perpetual Care Period	13.4	Hour	\$6.31	\$0	\$85	147,659 gals @ 5500 gals/load = 26.8 loads @ 0.5 hrs/trip = 13.4 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Transp Leachate Onsite				\$954	\$954	<i>onsite transport of leachate from Tank T-108 to Tank T-158</i>	
PCC-4.10 Fill Tank T-158						production rate = 1,650 gals per hour; RSM/UP p. 9-171 (33-19-0101)	
Laborer	0	Hour	\$39.00	\$0	\$0	Labor included in third party operation of AWTS	
Pumping Equipment	0	Hour	\$0.00	\$0	\$0	Existing equipment part of tank system	
Tank Trailer (5,500 gals) Post Closure Period	89.5	Hour	\$6.31	\$565	\$0	147,659 gals @ 1650 gals/hr = 89.5 per crew = 1.0 unit/crew = 89.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Perpetual Care Period	89.5	Hour	\$6.31	\$0	\$565	147,659 gals @ 1650 gals/hr = 89.5 per crew = 1.0 unit/crew = 89.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Fill Tank T-158				\$565	\$565	<i>pumping leachate taken from Tank T-108 into Tank T-158</i>	
<i>(Subt: Assemb PCC-4.8 thru 4.10)</i>				\$2,084	\$2,084	<i>SLF 11 share of annual leachate transport costs</i>	
PCC-4.11 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
<i>Internal & External Inspections</i>						<i>16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr</i>	
Engineer - Inspection	3.7	Hour	\$130.00	\$481	\$481	0.5 tanks/yr x 8 hrs/tnk x 1.0 per crew = 3.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	7.3	Hour	\$38.00	\$277	\$277	0.5 tanks/yr x 8 hrs/tnk x 2.0 per crew = 7.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.8	Hour	\$130.00	\$234	\$234	0.5 tanks/yr x 4 hrs/tnk x 1.0 per crew = 1.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$992	\$992	<i>inspection of 16 tanks</i>	

PCC-4: SLF 11

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-4.12 Tank Assessments							
						thirty (30) tanks requiring only external inspections once every five years by 1 PE	
<i>External Only Inspections</i>						32 tanks @ 5 yr inspect = 6.4 tnks/yr @ 7 areas = 0.9 tnks/yr	
Engineer - Inspection	3.4	Hour	\$130.00	\$442	\$442	0.9 tanks/yr x 4 hrs/tnk x 1.0 per crew = 3.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	0	Hour	\$38.00	\$0	\$0	0.9 tanks/yr x 4 hrs/tnk x 0.0 per crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.7	Hour	\$130.00	\$221	\$221	0.9 tanks/yr x 2 hrs/tnk x 1.0 per crew = 1.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$663	\$663	inspection of 32 tanks	
(Subt: Assemb PCC-4.11 thru 4.12)				\$1,655	\$1,655	SLF 11 share of annual tank assessment costs: post-closure & perpetual care frequency are equal	

PCC-4.13 Replace Mon Well Pump							
Replace Mon Well Pumps	0.58	pump	\$900.00	\$522	\$522	23 pumps @ 2.5% per year = 0.58 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.58	CF	\$12.45	\$7	\$7	0.58 pumps @ 1.0 CF/pump = 0.58 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.58	pad	\$131.50	\$76	\$76	23 pads @ 2.5% per year = 0.58 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	1.15	CF	\$12.45	\$14	\$14	0.58 pads @ 2.0 CF/pad = 1.15 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.58	each	\$371.63	\$216	\$216	23 covers @ 2.5% per year = 0.58 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.29	CF	\$12.45	\$4	\$4	0.58 covers @ 0.5 CF/cover = 0.29 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$915	\$915	monitoring well pump maintenance and replacement	
(Subt: Assemb PCC-4.13 thru 4.13)				\$915	\$915	SLF 11 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equal	

PCC-4.14 Drainage Ditch Repair							
						ditches estimated to be 10 feet in width	
<i>SLF 11 Drainage Ditches</i>						4400 LF	drainage ditches specific to SLF 11 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Drainage Ditch Repair	0.017	acre	\$5,698.00	\$97	\$97	7,225 LF x 10 ft/LF = 1.659 acres @ 1.0% per year = 0.017 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Rip-Rap Downchute Channel Repair	60	SY	\$44.30	\$2,658	\$2,658	720 LF x 15 FT/LF @ 9.0 SF/SY @ 5.0% per year = 60.0 SY	unit price based upon \$44.30/SY (RMU-1 Assembly 14.19)
Subt - Drainage Ditch Repair				\$2,755	\$2,755	stormwater drainage ditch repair	

PCC-4.15 Drainage Ditch Cleaning							
						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
<i>SLF 11 Drainage Ditches</i>						4400 LF	drainage ditches specific to SLF 11 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Drainage Ditch Sediment Cleaning	8.9	CY	\$2.38	\$21	\$21	7,225.0 LF x 10.0 ft/LF x 0.333 feet (4") = 891.1 CY @ 1%/yr = 8.9 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	5	miles	\$3.25	\$16	\$16	12.0 tons @ 20 tons/load = 0.60 loads @ 5 miles per load = 5 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	12	ton	\$35.00	\$420	\$420	8.9 CY @ 1.35 ton/CY = 12.0 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$457	\$457	stormwater drainage ditch cleaning	

PCC-4.16 Basin Cleaning							
						sediment estimated to be 4 inches deep.	
<i>Basin No. 1</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin No. 2</i>						150000 SF div by 8 units = 18750 SF	
Basin Sediment Cleaning	89.6	CY	\$2.38	\$213	\$213	36,328 SF x 0.333 feet (4") = 448.0 CY @ 20% per year = 89.6 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Basin Sediment	30.0	miles	\$3.25	\$98	\$98	121.0 tons @ 20 tons/load = 6.0 loads @ 5 miles/load = 30 miles	unit price based upon FAC Ponds 1/2 excavation (6.13)
Disposal of Basin Sediment	121.0	ton	\$35.00	\$4,235	\$4,235	89.6 CY @ 1.35 ton/CY = 121.0 tons	unit price based upon FAC Ponds 1/2 excavation (6.14)
Subt--Basin Cleaning				\$4,546	\$4,546	facility stormwater basin cleaning	

PCC-4: SLF 11

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-4.17 Culvert Maint/Replace							
						avg culvert = 25' (SLF 11) & 40' (sitewide); various diameters	
SLF 11 Culverts						12 culverts x 25 feet long = 300 LF	culverts specific to SLF 11 unit
Facility-wide Culverts						20 culverts x 40 feet long = 800 LF div by 8 units = 100 LF	culverts in non-specific areas of facility
Culvert Cleaning - 8" diameter avg	400	LF	\$2.14	\$855	\$855	400.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 8" diam avg (SLF 10)	25	LF	\$11.61	\$290	\$290	25.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 18" diam avg (sitewide)	40	LF	\$22.35	\$894	\$894	40.0 LF	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	48.8	CY	\$2.96	\$145	\$145	65.0 LF x 0.75 CY/LF = 48.8 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	48.8	CY	\$3.86	\$189	\$189	48.8 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$2,373	\$2,373	culvert maintenance and replacement	
(Subt: Assemb PCC-4.14 thru 4.17)				\$10,131	\$10,131	SLF 11 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal	

PCC-4.18 Road Maint/Replace							
						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
SLF 11 Gravel Roads						1450 LF x 15 feet wide = 2416.7 SY @ 5% per year = 120.8 SY	
Facility-wide Asphalt Roads						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 4224.0 SF	asphalt roads in non-specific areas of facility
SLF 11 Gravel Road Repair	120.8	SY	\$3.12	\$377	\$377	120.8 SY	DEC 2004 rate * deflator (2004-2010)
Facility-wide Asphalt Roads	528	SF	\$1.35	\$712	\$712	4,224.0 SF div by 8 units = 528.0 SF	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$1,090	\$1,090	road maintenance and replacement	
(Subt: Assemb PCC-4.14 thru 4.18)				\$1,090	\$1,090	SLF 11 road maintenance & replacement	

Total Non-Super hours 224.9

PCC-4.19 PPE Use/H&S Planning							
						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	21.1	days	\$0.00	\$0	\$0	224.9 hours @ 8 hr/day = 28.1 days @ 75% "D" days = 21.1 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	4.2	days	\$9.00	\$38	\$38	224.9 hours @ 8 hr/day = 28.1 days @ 15% "C" days = 4.2 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	2.8	days	\$25.00	\$70	\$70	224.9 hours @ 8 hr/day = 28.1 days @ 10% "C" days = 2.8 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	5.6	hours	\$75.00	\$420	\$420	224.9 hours @ 2.5% hr/hr = 5.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$528	\$528		
PCC-4.20 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in PCC-4.7a AWTs Operation	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
(Subt: Assemb PCC-4.19 thru 4.20)				\$528	\$528	supervision, health & safety, and certification	

PCC 4: SLF 11 Direct Cost				\$244,346	\$235,043		
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PCC-5: SLF 12

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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SLF 12 Parameters - Area	22.1 acres =	106889 SY =	962000 SF =	962 MSF	31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs
SLF 12 Parameters - Fencing					3960 LF = portion of perimeter fencing for SLF 12

SLF 12 Years of Post Closure Closure 1996 Years Since Closure 15 15

PCC-5.1 Annual Visual Inspections							
<i>Post-Closure</i>							
make visual inspections and log results; two persons required							
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew =	6.8 hours
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew =	6.8 hours
Technician - Perimeter Fencing	1.5	hours	\$38.00	\$57	\$0	3 hrs/insp x 2.0 insp/year x 2 per crew/	8 facility units = 1.5 hours
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x 1.8 insp/year x 2 per crew =	7.2 hours
Technician - 25-Yr Storm Event	0	hours	\$38.00	\$0	\$0	included above	
Subtotal - Annual Inspections				\$847	\$0	SLF 12 post-closure inspections	this activity s/b included with annual storm water inspect'ns
<i>Perpetual Care</i>							
Perpetual Care Frequencies according to Page 11 of Site-Wide Post-Closure Plan							
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew =	4.0 hours
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew =	4.0 hours
Technician - Perimeter Fencing	1.0	hours	\$38.00	\$0	\$38	4 hrs/insp x 1.0 insp/year x 2 per crew/	8 facility units = 1.0 hours
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x 1.04 insp/year x 2 per crew =	4.2 hours
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above	
Subtotal - Annual Inspections Perp-Care				\$0	\$502	SLF 12 perpetual care inspections	this activity s/b included with annual storm water inspect'ns
(Subt: Assemb PCC-5.1 thru 5.1)				\$847	\$502	SLF 12 visual inspections	

PCC-5.2 Perimeter Fence Maint.							
one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected							
Replacement of Fencing	79.2	LF	\$20.00	\$1,584	\$1,584	31680 LF div by 8 units x 2% per year =	79.2 LF
Subt - Perimeter Fence Maint.				\$1,584	\$1,584	SLF 12 share of perimeter fence inspection & replacement	Site Experience 2010 Rate
(Subt: Assemb PCC-5.2 thru 5.2)				\$1,584	\$1,584	SLF 12 share of perimeter fence inspection & replacement: post-closure & perpetual care frequency are equa	

PCC-5.3 Groundwater Monitoring							
<i>Monit'g Events & Samples/Event</i>							
sampling crew composed of two technicians; 21 monitoring wells (20 for unit + 1 upgradient)							
0.0 quart'ly + 34.0 semi-ann + 4.0 b-ann'l x 1.05 each = 37.8 samp							
<i>Post-Closure</i>							
Technician	75.6	hours	\$38.00	\$2,873	\$0	37.8 samps @ 1.0 hrs/samp x 2 per crew =	75.6 hours
Sampling Supplies	37.8	samp	\$25.00	\$945	\$0	37.8 samps	bottles, shipping supplies
VOCs	37.8	samp	\$105.00	\$3,969	\$0	37.8 samps	Average of three quotes
Subt - GW Monitoring				\$7,787	\$0	post closure groundwater monitoring	
<i>Monit'g Events & Samples/Event</i>							
21.0 wells @ sample/5 years 1.05 each = 4.4 samp/yr							
<i>Perpetual Care</i>							
Perpetual care groundwater monitoring once every five years							
Technician	8.8	hours	\$38.00	\$0	\$334	4.4 samps @ 1.0 hrs/samp x 2 per crew =	8.8 hours
Sampling Supplies	4.4	samp	\$25.00	\$0	\$110	4.4 samples	bottles, shipping supplies
VOCs	4.4	samp	\$105.00	\$0	\$462	4.4 samples	Average of three quotes
Subt - GW Monitoring				\$0	\$906	perpetual care groundwater monitoring	

PCC-5: SLF 12

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-5.4 Outfalls 002,003,004 SPDES Mon						production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure	
<i>Weekly Sampling Events</i>						12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples	sampling & analysis according to SPDES Permit
Technician	39	hours	\$38.00	\$1,482	\$1,482	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	
Pickup Truck	39	hours	\$10.45	\$408	\$408	39.0 hours	
Sampling Equipment	39	hours	\$5.00	\$195	\$195	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	samplers, meters, etc.
Sampling Supplies	19.5	samp	\$5.00	\$98	\$98	19.5 samples	bottles, shipping supplies
pH	19.5	samp	\$10.67	\$208	\$208	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Specific Conductance	19.5	samp	\$13.33	\$260	\$260	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Total Suspended Solids (TSS)	16.2	samp	\$13.33	\$216	\$216	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Total Dissolved solids	16.2	samp	\$15.00	\$243	\$243	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Settleable Solids	76.1	samp	\$13.33	\$1,015	\$1,015	3 outfalls @ 3.9 samp/OF/week @ 52 weeks = 608.4 samples/8 units 76.1 samples	daily during flow assume 3.9/week: Average of three quotes
BOD-5	4.5	samp	\$31.67	\$143	\$143	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Dissolved Oxygen	4.5	samp	\$17.50	\$79	\$79	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Ammonia (NH3)	4.5	samp	\$22.67	\$102	\$102	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
VOCs (624)	9	samp	\$105.00	\$945	\$945	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Oil & Grease (1631)	9	samp	\$40.00	\$360	\$360	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Copper	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Zinc	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Phenols	4.5	samp	\$26.67	\$120	\$120	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	19.5	samp	\$133.33	\$2,600	\$2,600	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
2-Chloroethyl vinyl ether	0	samp	\$86.67	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Dichlorodifluoromethane	9	samp	\$75.00	\$675	\$675	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Methylene chloride	0	samp	\$75.00	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Shipping	19.5	samp	\$5.00	\$98	\$98		
Subt - SPDES Outfall Sampling & Analysis				\$9,403	\$9,403	three outfalls requiring weekly sampling & analysis for each year during post-closure	
PCC-5.4a Discharge Monitoring Report						Monthly Discharge Monitoring Reports	
Engineer (Report)	3	hours	\$130.00	\$390	\$390	12 months @ 2 hrs/event = 24.0 hours @ div by 8 units = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Clerical	6	hours	\$45.00	\$270	\$270	12 months @ 4 hrs/event = 48.0 hours @ div by 8 units = 6.0 hours	
Subt - Discharge Monitoring Report				\$660	\$660	submittal of SPDES Permit required Discharge Monitoring Report (DMR)	
<i>(Subt: Assemb PCC-5.3 thru 5.4a)</i>				\$17,850	\$10,970	SLF 12 groundwater & stormwater monitoring activities	
PCC-5.5 Landfill Cover Maint.							
Replacement of Cover	0.211	acre	\$20,973.33	\$4,425	\$4,425	22.1 acre @ 1.0% per year = 0.221 acres/yr	unit price based upon vegetation, topsoil, from RMU-1, Assemblies 14.17 thru 14.18
Subt - Landfill Cover Maint.				\$4,425	\$4,425	SLF 12 upper cap maintenance and replacement	
PCC-5.6 Mowing/Grooming							
Mowing	962.0	MSF	\$3.21	\$3,091	\$3,091	962.0 MSF @ 1.0 per year = 962.0 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	192.4	MSF	\$3.82	\$735	\$735	962.0 MSF @ 1.0 per 5.0 years = 192.4 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming				\$3,826	\$3,826	SLF 12 mowing and fertilizing	
<i>(Subt: Assemb PCC-5.5 thru 5.6)</i>				\$8,251	\$8,251	SLF 12 cap maintenance activities: post-closure & perpetual care frequency are equa	

PCC-5: SLF 12

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-5.7 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment	47280	gal	\$0.1526	\$7,214	\$0	47,280 gals estimated annual leachate volume based average previous 5-years post closure	unit price derived from AWTS O&M model
Leachate Treatment - Perpetual Care	47280	gal	\$0.1526	\$0	\$7,214	47,280 gals estimated annual leachate volume based average previous 5-years post closure	
Leach Treat Syst. Capital Repl Cost	1	LS	\$17,642.00	\$17,642	\$17,642	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each	DEC estimate of AWTS capital replacement costs @ 25 yrs
Laborer	24	hours	\$39.00	\$936	\$936	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	24	hours	\$38.00	\$912	\$912	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Leachate VOC Samp & Analysis	4.2	sample	\$105.00	\$441	\$441	4 sumps x 1.05 per sump = 4.2 samples	average of 3 third party quotes
Leachate Organic Priority Pollutant	4.2	sample	\$633.33	\$2,660	\$2,660	4 sumps x 1.05 per sump = 4.2 samples	average of 3 third party quotes
Leachate Metals Samp & Analysis	4.2	sample	\$155.00	\$651	\$651	4 sumps x 1.05 per sump = 4.2 samples	average of 3 third party quotes
Electrical Costs - Pumps	32.1	KWH	\$0.086	\$3	\$3	28.7 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 32.1 KWH	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-150	0.2	pump	\$12,000	\$2,400	\$2,400	1 pump per 5 years = 0.2 pumps	250 gpm, 5 hp pump, Site Experience
Replace Primary Sump Pumps	0.5	pump	\$1,382	\$691	\$691	4 pumps x 12.5% pu/yr = 0.5 pumps	1.5 hp submersible pump, site experience
Replace Secondary Sump Pumps	0.5	pump	\$850	\$425	\$425	4 pumps x 12.5% pu/yr = 0.5 pumps	4" subm pump, 0.5 hp, , site experience
Replacement of Pump Dischg Hose	1	hose	\$211.54	\$212	\$212	1 pumps x 1 per pump = 1 hoses	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	10	CF	\$12.45	\$125	\$125	1 pu/hos @ 10 CF/pump = 10 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	26	LF	\$53.25	\$1,385	\$1,385	2,600 LF @ 1.0% per year = 26.0 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	8.6	CF	\$12.45	\$107	\$107	26.0 LF @ 0.33 CF/LF = 8.6 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	26	LF	\$73.50	\$1,911	\$1,911	2,600 LF @ 1.0% per year = 26.0 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	13	CF	\$12.45	\$162	\$162	26.0 LF @ 0.50 CF/LF = 13.0 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 6" Steel	4	LF	\$89.45	\$358	\$358	400 LF @ 1.0% per year = 4.0 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 6" Steel	2	CF	\$12.45	\$25	\$25	4.0 LF @ 0.50 CF/LF = 2.0 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Leachate Coll Syst Mgmt				\$38,258	\$38,258	annual O&M costs plus capital replacement of treatment system, pumps, and piping	
PCC-5.7a AWTS Operation						Shift operation of the AWTS for 12 months	no DEC estimate for this activity; DEC Estimate included in unit rate
Material handler/basic labor	274.3	hours	\$39.00	\$10,698	\$10,698	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Maintenance/basic labor	548.6	hours	\$39.00	\$21,395	\$21,395	240 days @ 8 hours/day = 1920.0 hours @ 2 units/crew/7 units = 548.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Operator/technician	834.3	hours	\$38.00	\$31,703	\$31,703	365 days @ 8 hours/day = 2920.0 hours @ 2 units/crew/7 units = 834.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Laboratory/technician	274.3	hours	\$38.00	\$10,423	\$10,423	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
AWT Foreman/Supervisor	274.3	hours	\$65.00	\$17,830	\$17,830	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - AWTS Operation				\$92,049	\$92,049	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
PCC-5.7b Site Waters Treatment							
Leachate Treatment - Post Closure	201193.00	gal	\$0.0313	\$6,297	\$0	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Leachate Treatment - Perpetual Care	201193.00	gal	\$0.0313	\$0	\$6,297	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Tank Trailer (5,500 gals) Collect	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Road Tractor (4 x 2, 30 ton) Transport	18.30	hours	\$32.45	\$594	\$594	1,408,349 gals @ 5500 gals/load = 256.1 loads @ 0.5 hrs/trip = 128 hrs/7 units = 18.3 hrs	RSM/HC p. 472 (line item 01 54 33 40 7410)
Tank Trailer (5,500 gals) Transport	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Fill T-100	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Site Waters Treatment				\$9,199	\$9,199	SLF-12 share of annual site waters collection & treatment: post-closure & perpetual care frequency are equa	Labor included in PCC-1.7a
PCC-5.7c Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
VOCs (624)	3.4	samp	\$105.00	\$357	\$357	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Semi-volatile organics (625)	3.4	samp	\$208.33	\$715	\$715	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
PCBs (608) (MDL 65 PPT (ng/l))	3.4	samp	\$133.33	\$457	\$457	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Priority Pollutant Metals (200.7)	3.4	samp	\$188.00	\$645	\$645	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Mercury (245.1)	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Sulfides	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Cyanide	3.4	samp	\$35.00	\$120	\$120	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Subt - Batch Tank Qualification				\$2,465	\$2,465	SLF-12 share of annual batch tank qualification	Samples collected by lab technician

PCC-5: SLF 12

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-5.7d Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/evnt= 3 samples	sampling & analysis prior to pond discharge
Technician	2.6	hours	\$38.00	\$99	\$99	3 samp @ 2.0 hrs/samp = 6.0 hours @ 3 units/crew = 18.0 hrs/7 units = 2.6 hrs	technician rate: rate 2011 3rd party quote
Sampling Equipment	0.9	hours	\$25.00	\$23	\$23	3 samp @ 2.0 hrs/samp = 6.0 hours @ 1 units/crew = 6.0 hrs/7 units = 0.9 hrs	boat, samplers, meters, etc.
Sampling Supplies	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	bottles, shipping supplies
pH	0.5	samp	\$10.67	\$5	\$5	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Specific Conductance	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Temperature	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Dissolved Oxygen	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Total Dissolved solids (TDS)	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TDVS (total dissolved volatile solids)	0.5	samp	\$23.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Alkalinity as CaCO3	0.5	samp	\$15.33	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TOC	0.5	samp	\$31.67	\$16	\$16	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ca/Mg Hardness (200.7)	0.5	samp	\$24.33	\$12	\$12	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Total Suspended Solids (TSS)	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Settleable Solids	0.5	samp	\$13.33	\$7	\$7	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Ammonia (NH3)	0.5	samp	\$22.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Phosphorous	0.5	samp	\$20.00	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
TON (TKN-NH3)	0.5	samp	\$41.67	\$21	\$21	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Cyanide	0.5	samp	\$35.00	\$18	\$18	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfates	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Sulfides	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Surfactants (MBAS)	0.5	samp	\$28.33	\$14	\$14	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
BOD-5	0.5	samp	\$30.00	\$15	\$15	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Fluoride	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Chlorine	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Residual Chlorine	0.5	samp	\$15.00	\$8	\$8	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO2	0.5	samp	\$21.00	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
NO3	0.5	samp	\$19.33	\$10	\$10	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
VOCs (624)	0.5	samp	\$105.00	\$53	\$53	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Semi-volatile organics (625)	0.5	samp	\$208.33	\$104	\$104	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	0.5	samp	\$133.33	\$67	\$67	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Oil & Grease (1631)	0.5	samp	\$21.67	\$11	\$11	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
total Phenols	0.5	samp	\$26.67	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Priority Pollutant Metals (200.7) *	0.5	samp	\$188.00	\$94	\$94	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (245.1)	0.5	samp	\$25.00	\$13	\$13	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Mercury (1631B)	0.5	samp	\$111.67	\$56	\$56	3 samples/ 7 units = 0.5 samples	analytical price: average of three quotes
Acute Toxicity/Bioassay	0.15	samp	\$3,800.00	\$570	\$570	1 sample/ 7 units = 0.15 samples	One quote: actual cost for 2010
Subt - Pond Sampling & Analysis				\$1,353	\$1,353	one pond discharge (batch) requiring sampling & analysis prior to discharge	
PCC-5.7e Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischarge qualification report	
Divers (Sr. Technicians)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
SCBA Gear (2 units)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Laborer (Surface Support)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Underwater Inspection	0.15	each	\$4,000.00	\$600	\$600	\$4,000 per event @ 1 event per year/ 7 units = 0.15 events	Based on 2010 site rate of \$3,500
Engineer (Report)	5.7	hours	\$130.00	\$741	\$741	1 events @ 40 hrs/event = 40.0 hours @ 1 units/crew = 40.0 hours/7 units = 5.7	Eng Rate: rate 2011 3rd party quote
Subt - S&A Cert'n & Report				\$1,341	\$1,341	diver(s) to check discharge pipe; also engineer's predischarge qualification report	Fac Pond 8 out of service empty

PCC-5: SLF 12

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-5.7f Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
<i>FAC Pond 1/2 Inventory in Gallons</i>	2750618.0	<i>gals</i>	<i>n/a</i>			45.8 total hours req'd to pump	& site waters
Labor to pump/discharge		day hrs	<i>n/a</i>	\$0	\$0	Included in PCC-5.7a above	
Tech/Sampler (day shift only)		day hrs	\$38.00	\$0	\$0	Included in PCC-5.7a above	
Settleable Solids	1.6	samp	\$13.33	\$21	\$21	45.8 hours @ 1.0 sample per 4.0 hours = 11.5 samples /7 units = 1.6 samples	analytical price: average of three quotes
Dissolved Oxygen	1.0	samp	-	\$0	\$0	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	analytical price: average of three quotes
Sulfide (total)	1.0	samp	\$25.00	\$25	\$25	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	6.5	total hrs	\$12.34	\$80	\$80	45.8 tot hrs @ 100% total time = 45.8 hours @ 1 units/crew = 45.8 hrs/ 7 units = 6.5 hrs	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam/3,000 LF)	19628.0	foot-hrs	\$0.0110	\$216	\$216	45.8 tot hrs @ 100% total time = 45.8 hours @ 3000 LF/crew = 137400 ft-hrs/7 units = 19,628	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Pump FAC Pond 1/2				\$342	\$342	transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft)	
<i>(Subt: Assemb PCC-5.7 thru 5.7f)</i>				\$145,008	\$145,008	SLF 12 share of annual O&M and capital costs for leachate collection & treatment: post-closure & perpetual care frequency are equa	
PCC-5.8 N/A				\$0	\$0		
Subt - N/A				\$0	\$0		
PCC-5.9 N/A				\$0	\$0		
Subt - N/A				\$0	\$0		
PCC-5.10 N/A				\$0	\$0		
Subt - N/A				\$0	\$0	SLF 12 share of annual leachate transport costs - n/a, as leachate pumped directly to the AWTS	
<i>(Subt: Assemb PCC-5.8 thru 5.10)</i>				\$0	\$0		
PCC-5.11 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
<i>Internal & External Inspections</i>						16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr	
Engineer - Inspection	3.7	Hour	\$130.00	\$481	\$481	0.5 tanks/yr x 8 hrs/tnk x 1.0 per crew = 3.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	7.3	Hour	\$38.00	\$277	\$277	0.5 tanks/yr x 8 hrs/tnk x 2.0 per crew = 7.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.8	Hour	\$130.00	\$234	\$234	0.5 tanks/yr x 4 hrs/tnk x 1.0 per crew = 1.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$992	\$992	inspection of 16 tanks	
PCC-5.12 Tank Assessments						thirty (32) tanks requiring only external inspections once every five years by 1 PE	
<i>External Only Inspections</i>						30 tanks @ 5 yr inspect = 6.0 tnks/yr @ 7 areas = 0.9 tnks/yr	
Engineer - Inspection	3.4	Hour	\$130.00	\$442	\$442	0.9 tanks/yr x 4 hrs/tnk x 1.0 per crew = 3.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	0	Hour	\$38.00	\$0	\$0	0.9 tanks/yr x 4 hrs/tnk x 0.0 per crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.7	Hour	\$130.00	\$221	\$221	0.9 tanks/yr x 2 hrs/tnk x 1.0 per crew = 1.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$663	\$663	inspection of 32 tanks	
<i>(Subt: Assemb PCC-5.11 thru 5.12)</i>				\$1,655	\$1,655	SLF 12 share of annual tank assessment costs: post-closure & perpetual care frequency are equa	
PCC-5.13 Replace Mon Well Pump							
Replace Mon Well Pumps	0.52	pump	\$900.00	\$468	\$468	21 pumps @ 2.5% per year = 0.52 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.52	CF	\$12.45	\$6	\$6	0.52 pumps @ 1.0 CF/pump = 0.52 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.52	pad	\$131.50	\$68	\$68	21 pads @ 2.5% per year = 0.52 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	1.04	CF	\$12.45	\$13	\$13	0.52 pads @ 2.0 CF/pad = 1.04 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.52	each	\$371.63	\$193	\$193	21 covers @ 2.5% per year = 0.52 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.26	CF	\$12.45	\$3	\$3	0.52 covers @ 0.5 CF/cover = 0.26 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$828	\$828	monitoring well pump maintenance and replacement	
<i>(Subt: Assemb PCC-5.13 thru 5.13)</i>				\$828	\$828	SLF 12 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equa	

PCC-5: SLF 12

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-5.14 Drainage Ditch Repair						ditches estimated to be 10 feet in width	
<i>SLF 12 Drainage Ditches</i>						10280 LF	<i>drainage ditches specific to SLF 12 unit</i>
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF	<i>drainage ditches in non-specific areas of facility</i>
Drainage Ditch Repair	0.03	acre	\$5,698.00	\$171	\$171	13,105 LF x 10 ft/LF = 1.659 acres @ 1.0% per year = 0.030 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Rip-Rap Downchute Channel Repair	33.3	SY	\$44.30	\$1,475	\$1,475	400 LF x 15 FT/LF @ 6000.0 sf (1' dp) x 5.0% per year = 33.3 SY	unit price based upon \$44.30/SY (RMU-1 Assembly 14.19)
Subt - Drainage Ditch Repair				\$1,646	\$1,646	<i>stormwater drainage ditch repair</i>	
PCC-5.15 Drainage Ditch Cleaning						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
<i>SLF 12 Drainage Ditches</i>						10280 LF	<i>drainage ditches specific to SLF 12 unit</i>
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF	<i>drainage ditches in non-specific areas of facility</i>
Drainage Ditch Sediment Cleaning	16.2	CY	\$2.38	\$39	\$39	13,105.0 LF x 10.0 ft/LF x 0.333 feet (4") = 1616 CY @ 1%/yr = 16.2 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	5.5	miles	\$3.25	\$18	\$18	21.9 tons @ 20 tons/load = 1.1 loads @ 5 miles per load = 5.5 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	21.9	ton	\$35.00	\$767	\$767	16.2 CY @ 1.35 ton/CY = 21.9 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$823	\$823	<i>stormwater drainage ditch cleaning</i>	
PCC-5.16 Basin Cleaning						sediment estimated to be 4 inches deep.	
<i>Basin No. 1</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin No. 2</i>						150000 SF div by 8 units = 18750 SF	
Basin Sediment Cleaning	89.6	CY	\$2.38	\$213	\$213	36,328 SF x 0.333 feet (4") = 448.0 CY @ 20% per year = 89.6 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Basin Sediment	30.0	miles	\$3.25	\$98	\$98	121.0 tons @ 20 tons/load = 6.0 loads @ 5 miles/load = 30 miles	unit price based upon FAC Ponds 1/2 excavation (6.13)
Disposal of Basin Sediment	121.0	ton	\$35.00	\$4,235	\$4,235	89.6 CY @ 1.35 ton/CY = 121.0 tons	unit price based upon FAC Ponds 1/2 excavation (6.14)
Subt--Basin Cleaning				\$4,546	\$4,546	<i>facility stormwater basin cleaning</i>	
PCC-5.17 Culvert Maint/Replace						avg culvert = 25' (SLF 11) & 40' (sitewide); various diameters	
<i>SLF 12 Culverts</i>						10 culverts x 25 feet long = 250 LF	<i>culverts specific to SLF 12 unit</i>
<i>Facility-wide Culverts</i>						20 culverts x 40 feet long = 800 LF div by 8 units = 100 LF	<i>culverts in non-specific areas of facility</i>
Culvert Cleaning - 8" diameter avg	350	LF	\$2.14	\$748	\$748	350.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 8" diam avg (SLF 10)	25	LF	\$11.61	\$290	\$290	25.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	40	LF	\$22.35	\$894	\$894	40.0 LF	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	48.8	CY	\$2.96	\$145	\$145	65.0 LF x 0.75 CY/LF = 48.8 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	48.8	CY	\$3.86	\$189	\$189	48.8 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$2,266	\$2,266	<i>culvert maintenance and replacement</i>	
<i>(Subt: Assemb PCC-5.14 thru 5.17)</i>				\$9,281	\$9,281	<i>SLF 12 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equa</i>	
PCC-5.18 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
<i>SLF 12 Gravel Roads</i>						6080 LF x 15 feet wide = 10133 SY @ 5% per year = 506.65 SY	
<i>Facility-wide Asphalt Roads</i>						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 4224.0 SF	<i>asphalt roads in non-specific areas of facility</i>
SLF 12 Gravel Road Repair	506.65	SY	\$3.12	\$1,582	\$1,582	506.65 SY	DEC 2004 rate * deflator (2004-2010)
Facility-wide Asphalt Roads	528	SF	\$1.35	\$712	\$712	4,224.0 SF div by 8 units = 528.0 SF	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$2,294	\$2,294	<i>road maintenance and replacement</i>	
<i>(Subt: Assemb PCC-5.18 thru 5.18)</i>				\$2,294	\$2,294	<i>SLF 12 road maintenance & replacement</i>	

Total Non-Super hours 203.9

PCC-5: SLF 12

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-5.19 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	19.1	days	\$0.00	\$0	\$0	203.9 hours @ 8 hr/day = 25.5 days @ 75% "D" days = 19.1 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	3.8	days	\$9.00	\$34	\$34	203.9 hours @ 8 hr/day = 25.5 days @ 15% "C" days = 3.8 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	2.6	days	\$25.00	\$65	\$65	203.9 hours @ 8 hr/day = 25.5 days @ 10% "C" days = 2.6 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	5.1	hours	\$75.00	\$383	\$383	203.9 hours @ 2.5% hr/hr = 5.1 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$482	\$482		
PCC-5.20 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in PCC-5.7a AWTS Operation	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
(Subt: Assemb PCC-5.19 thru 5.20)				\$482	\$482	supervision, health & safety, and certification	
PCC 5: SLF 12 Direct Cost				\$188,081	\$180,855		

PCC-5: SLF 12				
Total Cost Summary				
Cost Category	Proposed Percent of Direct Cost	Proposed Annual Cost Post - Closure Period	Proposed Cost - Annual Perpetual Care	Cost Range
Direct Costs		\$188,081	\$180,855	
Plus Indirect Costs/Profit:				
Site Activity Management Costs	3.00%	\$5,642	\$5,426	Included in Gen'l Contractor G&A/Home Office (note: DEC uses 3%)
Gen'l Contractor G&A/Home Office	4.00%	\$7,523	\$7,234	5% for post-closure. (note: DEC uses 4%)
Pre-Construction Design Costs	1.00%	\$1,881	\$1,809	For post-closure, design costs minimal and included in Assb 5.20. (note: DEC uses 1%)
Engineering During Construction	1.00%	\$1,881	\$1,809	For post-closure, design costs minimal and included in Assb 5.20. (note: DEC uses 1%)
General Contractor Profit	6.00%	\$11,285	\$10,851	Contractor Profit included in unit rates & Gen' Cont G&A/Home Office (Note DEC adds 6%)
Indirect Costs & Profit	15.00%	\$28,212	\$27,128	
Subtotal - Direct/Indirect Costs		\$216,293	\$207,983	
Plus Contingency	15.00%	\$32,444	\$31,197	DEC uses 15% applied to total cost
Total - PCC-5: SLF 12		\$248,737	\$239,180	

SLF 12 Years of Post Closure

Years Since Closure

16

Post Closure Years Remaining

14

Post Closure Costs Remaining Years	\$3,482,318
Post Closure Costs 30-Years	\$7,462,111

PCC-6: RMU-1

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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RMU-1 Parameters - Area	47.35 acres =	229172 SY =	2062550 SF =	2063 MSF	31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs
RMU-1 Parameters - Fencing					3960 LF = portion of perimeter fencing for RMU-1

RMU-1 Years of Post Closure	Closure	N/A	Years Since Closure	N/A	30
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PCC-6.1 Annual Visual Inspections						make visual inspections and log results; two persons required		
<i>Post-Closure</i>								
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew =	6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew =	6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.5	hours	\$38.00	\$57	\$0	3 hrs/insp x 2.0 insp/year x 2 per crew/ 8 facility units =	1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x 1.8 insp/year x 2 per crew =	7.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0	hours	\$38.00	\$0	\$0	included above		this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections				\$847	\$0	RMU-1 post-closure inspections		
<i>Perpetual Care</i>						Perpetual Care Frequencies according to Page 11 of Site-Wide Post-Closure Plan		
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew =	4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew =	4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.0	hours	\$38.00	\$0	\$38	4 hrs/insp x 1.0 insp/year x 2 per crew/ 8 facility units =	1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x 1.04 insp/year x 2 per crew =	4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above		this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections Perp-Care				\$0	\$502	RMU-1 perpetual care inspections		
(Subt: Assemb PCC-6.1 thru 6.1)				\$847	\$502	RMU-1 visual inspections		

PCC-6.2 Perimeter Fence Maint.						one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected		
Replacement of Fencing	79.2	LF	\$20.00	\$1,584	\$1,584	31680 LF div by 8 units x 2% per year =	79.2 LF	Site Experience 2010 Rate
Subt - Perimeter Fence Maint.				\$1,584	\$1,584	RMU-1 share of perimeter fence inspection & replacement		
(Subt: Assemb PCC-6.2 thru 6.2)				\$1,584	\$1,584	RMU-1 share of perimeter fence inspection & replacement: post-closure & perpetual care frequency are equal		

PCC-6.3 Maint. Benchmarks/Surv						Annual inspection only		
Maint of Benchmarks & Surveying	0	acres	\$0.00	\$0	\$0	Included in PCC-6.1		
Subt - Benchmarks & Surveying				\$0	\$0			
(Subt: Assemb PCC-6.3 thru 6.3)				\$0	\$0			

PCC-6.4 Groundwater Monitoring						sampling crew composed of two technicians; 51 monitoring wells					
<i>Monit'g Events & Samples/Event</i>						0.0 quart'/ly +	102.0 semi-ann +	0.0 b-ann'l' x	1.05 each =	107.1 samp	includes 5% QA sampling
<i>Post-Closure</i>											
Technician	214.2	hours	\$38.00	\$8,140	\$0	107.1 samps @ 1.0 hrs/samp x 2 per crew =	214.2 hours			loaded labor rate: loaded labor rate 2011 3rd party quote	
Sampling Supplies	107.1	samp	\$25.00	\$2,678	\$0	107.1 samps				bottles, shipping supplies	
VOCs	107.1	samp	\$105.00	\$11,246	\$0	107.1 samps				Average of three quotes	
Subt - GW Monitoring				\$22,063	\$0	post closure groundwater monitoring					
<i>Monit'g Events & Samples/Event</i>						51.0 wells @	sample/5 years	1.05 each =	10.7 samp/yr		
<i>Perpetual Care</i>						Perpetual care groundwater monitoring once every five years					
Technician	21.4	hours	\$38.00	\$0	\$813	10.7 samps @ 1.0 hrs/samp x 2 per crew =	21.4 hours			loaded labor rate: loaded labor rate 2011 3rd party quote	
Sampling Supplies	10.7	samp	\$25.00	\$0	\$268	10.7 samples				bottles, shipping supplies	
VOCs	10.7	samp	\$105.00	\$0	\$1,124	10.7 samples				Average of three quotes	
Subt - GW Monitoring				\$0	\$2,204	perpetual care groundwater monitoring					

PCC-6: RMU-1

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-6.5 Outfalls 002,003,004 SPDES Mon						production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure	
<i>Weekly Sampling Events</i>						12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples	sampling & analysis according to SPDES Permit
Technician	39	hours	\$38.00	\$1,482	\$1,482	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	
Pickup Truck	39	hours	\$10.45	\$408	\$408	39.0 hours	
Sampling Equipment	39	hours	\$5.00	\$195	\$195	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	samplers, meters, etc.
Sampling Supplies	19.5	samp	\$5.00	\$98	\$98	19.5 samples	bottles, shipping supplies
pH	19.5	samp	\$10.67	\$208	\$208	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Specific Conductance	19.5	samp	\$13.33	\$260	\$260	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Total Suspended Solids (TSS)	16.2	samp	\$13.33	\$216	\$216	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16 samp	weekly: Average of three quotes
Total Dissolved solids	16.2	samp	\$15.00	\$243	\$243	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16 samp	weekly: Average of three quotes
Settleable Solids	76.1	samp	\$13.33	\$1,015	\$1,015	3 outfalls @ 3.9 samp/OF/week @ 52 weeks = 608.4 samples/8 units 76.1 samples	daily during flow assume 3.9/week: Average of three quotes
BOD-5	4.5	samp	\$31.67	\$143	\$143	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Dissolved Oxygen	4.5	samp	\$17.50	\$79	\$79	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Ammonia (NH3)	4.5	samp	\$22.67	\$102	\$102	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
VOCs (624)	9	samp	\$105.00	\$945	\$945	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Oil & Grease (1631)	9	samp	\$40.00	\$360	\$360	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Copper	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Zinc	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Phenols	4.5	samp	\$26.67	\$120	\$120	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	19.5	samp	\$133.33	\$2,600	\$2,600	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
2-Chloroethyl vinyl ether	0	samp	\$86.67	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Dichlorodifluoromethane	9	samp	\$75.00	\$675	\$675	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Methylene chloride	0	samp	\$75.00	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Shipping	19.5	samp	\$5.00	\$98	\$98		
Subt - SPDES Outfall Sampling & Analysis				\$9,403	\$9,403	three outfalls requiring weekly sampling & analysis for each year during post-closure	
PCC-6.5a Discharge Monitoring Report						Monthly Discharge Monitoring Reports	
Engineer (Report)	3	hours	\$130.00	\$390	\$390	12 months @ 2 hrs/event = 24.0 hours @ div by 8 units = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Clerical	6	hours	\$45.00	\$270	\$270	12 months @ 4 hrs/event = 48.0 hours @ div by 8 units = 6.0 hours	
Subt - Discharge Monitoring Report				\$660	\$660	submission of SPDES Permit required Discharge Monitoring Report (DMR)	
<i>(Subt: Assemb PCC-6.4 thru 6.5a)</i>				\$32,126	\$12,268	RMU-1 groundwater & stormwater monitoring activities	
PCC-6.6 Landfill Cover Maint.							
Replacement of Cover	0.2365	acre	\$20,973.33	\$4,960	\$4,960	47.35 acre @ 0.5% per year = 0.2365 acres/yr	unit price based upon vegetation, topsoil, from RMU-1,
Subt - Landfill Cover Maint.				\$4,960	\$4,960	RMU-1 upper cap maintenance and replacement	Assemblies 14.17 thru 14.18
PCC-6.7 Mowing/Grooming							
Mowing	2062.2	MSF	\$3.21	\$6,626	\$6,626	2,062.6 MSF @ 1.0 per year = 2,062.2 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	412.5	MSF	\$3.82	\$1,575	\$1,575	2,062.6 MSF @ 1.0 per 5.0 years = 412.5 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming				\$8,202	\$8,202	RMU-1 mowing and fertilizing	
<i>(Subt: Assemb PCC-6.6 thru 6.7)</i>				\$13,162	\$13,162	RMU-1 cap maintenance activities: post-closure & perpetual care frequency are equa.	

PCC-6: RMU-1

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-6.8 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment	145867.1	gal	\$0.0178	\$2,596	\$0	145,867.1 gals estimated annual leachate volume based average prediction 0-30 years post closure	unit price derived from AWTS O&M model
Leachate Treatment - Perpetual Care	26139.5	gal	\$0.0178	\$0	\$465	26,139.5 perpetual care average years 31-60	
Leach Treat Syst. Capital Repl Cost	1	LS	\$17,642.00	\$17,642	\$17,642	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each	DEC estimate of AWTS capital replacement costs @ 25 yrs
Laborer	48.0	hours	\$39.00	\$1,872	\$1,872	4 hrs/mon x 12 mon/year = 48 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	48.0	hours	\$38.00	\$1,824	\$1,824	4 hrs/mon x 12 mon/year = 48 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Primary Leachate VOC Samp & Analysis	21.0	sample	\$105.00	\$2,205	\$2,205	10 sumps x 1.05 per sump x 2.0 event/yr = 21.0 samples	Avg. of three lab quotes
Primary Leachate Metals Samp & Analysis	21.0	sample	\$188.00	\$3,948	\$3,948	10 sumps x 1.05 per sump x 2.0 event/yr = 21.0 samples	Avg. of three lab quotes
Primary Leachate PCBs Samp & Analysis	21.0	sample	\$133.33	\$2,800	\$2,800	10 sumps x 1.05 per sump x 2.0 event/yr = 21.0 samples	Avg. of three lab quotes
Secondary Leachate VOC Samp & Analysis	21.0	sample	\$105.00	\$2,205	\$2,205	10 sumps x 1.05 per sump x 2.0 event/yr = 21.0 samples	Avg. of three lab quotes
Secondary Leachate Metals Samp & Analysis	10.5	sample	\$188.00	\$1,974	\$1,974	10 sumps x 1.05 per sump = 1.0 event/yr = 10.5 samples	Avg. of three lab quotes
Secondary Leachate PP Organics Samp & Analysis	10.5	sample	\$633.33	\$6,650	\$6,650	10 sumps x 1.05 per sump = 1.0 event/yr = 10.5 samples	Avg. of three lab quotes
Electrical Costs - Pumps	384.6	KWH	\$0.086	\$33	\$33	343.7 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 384.6 KWH	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-160	0.2	pump	\$14,425.00	\$2,885	\$2,885	1 pump per 5 years = 0.2 pumps	30 hp pump, site experience
Replacement of Secondary Pump T-160	0.2	pump	\$2,456.00	\$491	\$491	1 pump per 5 years = 0.2 pumps	250 gpm, 5 hp pump, Site Experience
Replace Primary Sump Pumps	2.0	pump	\$1,382.00	\$2,764	\$2,764	10 pumps x 20.0% pu/yr = 2.0 pumps	1.5 hp submersible pump, site experience
Replace Secondary Sump Pumps	1.5	pump	\$850.00	\$1,275	\$1,275	10 pumps x 15.0% pu/yr = 1.5 pumps	4" subm pump, 0.5 hp, , site experience
Replacement of Pump Dischg Hose	3.9	hose	\$21.54	\$825	\$825	3.9 pumps x 1 per pump = 3.9 hoses	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	39.0	CF	\$12.45	\$486	\$486	3.9 pu/hos @ 10 CF/pump = 39 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	21.0	LF	\$53.25	\$1,118	\$1,118	4,200 LF @ 0.5% per year = 21.0 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	6.9	CF	\$12.45	\$86	\$86	21 LF @ 0.33 CF/LF = 6.9 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	27.0	LF	\$73.50	\$1,985	\$1,985	5,400 LF @ 0.5% per year = 27.0 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	13.5	CF	\$12.45	\$168	\$168	27 LF @ 0.50 LF/drum = 13.5 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Pipe Cleaning - 8" diameter	1150.0	LF	\$2.14	\$2,461	\$2,461	2,300 LF @ 0.50 events/yr = 1150.0 LF	DEC 2004 rate * deflator (2004-2010)
Subt - Leachate Coll Syst Mgmt				\$58,293	\$56,162	<i>annual O&M costs plus capital replacement of treatment system, pumps, and piping</i>	
PCC-6.8a AWTS Operation						Shift operation of the AWTS for 12 months	no DEC estimate for this activity: DEC Estimate included in unit rate
Material handler/basic labor	274.3	hours	\$39.00	\$10,698	\$10,698	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Maintenance/basic labor	548.6	hours	\$39.00	\$21,395	\$21,395	240 days @ 8 hours/day = 1920.0 hours @ 2 units/crew/7 units = 548.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Operator/technician	834.3	hours	\$38.00	\$31,703	\$31,703	365 days @ 8 hours/day = 2920.0 hours @ 2 units/crew/7 units = 834.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Laboratory/technician	274.3	hours	\$38.00	\$10,423	\$10,423	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
AWT Foreman/Supervisor	274.3	hours	\$65.00	\$17,830	\$17,830	240 days @ 8 hours/day = 1920.0 hours @ 1 units/crew/7 units = 274.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - AWTS Operation				\$92,049	\$92,049	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
PCC-6.8b Site Waters Treatment							
Leachate Treatment - Post Closure	201193.00	gal	\$0.0313	\$6,297	\$0	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Leachate Treatment - Perpetual Care	201193.00	gal	\$0.0313	\$0	\$6,297	1,408,349 gals average of past 5 years/ 7 units = 201,193 gallons	unit price derived from AWTS model
Tank Trailer (5,500 gals) Collect	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Road Tractor (4 x 2, 30 ton) Transport	18.30	hours	\$32.45	\$594	\$594	1,408,349 gals @ 5500 gals/load = 256.1 loads @ 0.5 hrs/trip = 128 hrs/7 units = 18.3 hrs	RSM/HC p. 472 (line item 01 54 33 40 7410)
Tank Trailer (5,500 gals) Transport	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Tank Trailer (5,500 gals) Fill T-100	121.90	hours	\$6.31	\$769	\$769	1,408,349 gals @ 1650 gals/hr = 853.5 per crew = 1.0 unit/crew = 853.5 hrs/7 units = 121.9 hrs	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Site Waters Treatment				\$9,199	\$9,199	<i>RMU-1 share of annual site waters collection & treatment: post-closure & perpetual care frequency are equa</i>	Labor included in PCC-1.7a

PCC-6: RMU-1

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-6.8c Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
VOCs (624)	3.4	samp	\$105.00	\$357	\$357	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	
Semi-volatile organics (625)	3.4	samp	\$208.33	\$715	\$715	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
PCBs (608) (MDL 65 PPT (ng/l))	3.4	samp	\$133.33	\$457	\$457	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Priority Pollutant Metals (200.7)	3.4	samp	\$188.00	\$645	\$645	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Mercury (245.1)	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Sulfides	3.4	samp	\$25.00	\$86	\$86	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Cyanide	3.4	samp	\$35.00	\$120	\$120	2 tanks @ 1 samp/tank/month @ 1 year = 24 samples/7 units = 3.4 samples	monthly: Average of three quotes
Subt - Batch Tank Qualification				\$2,465	\$2,465	RMU-1 share of annual batch tank qualification	Samples collected by lab technician
PCC-6.8d Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/evnt = 3 samples	sampling & analysis prior to pond discharge
Technician	2.6	hours	\$38.00	\$99	\$99	3 samps @ 2.0 hrs/samp = 6.0 hours @ 3 units/crew = 18.0 hrs/7 units = 2.6 hrs	technician rate: rate 2011 3rd party quote
Sampling Equipment	0.9	hours	\$25.00	\$23	\$23	3 samps @ 2.0 hrs/samp = 6.0 hours @ 1 units/crew = 6.0 hrs/7 units = 0.9 hrs	boat, samplers, meters, etc.
Sampling Supplies	0.5	samp	\$25.00	\$13	\$13	3 samples/7 units = 0.5 samples	bottles, shipping supplies
pH	0.5	samp	\$10.67	\$5	\$5	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Specific Conductance	0.5	samp	\$13.33	\$7	\$7	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Temperature	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Dissolved Oxygen	0.5	samp	-	\$0	\$0	3 samples obtained using field equipment	Obtained using field equipment
Total Dissolved solids (TDS)	0.5	samp	\$15.00	\$8	\$8	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
TDVS (total dissolved volatile solids)	0.5	samp	\$23.33	\$12	\$12	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Alkalinity as CaCO3	0.5	samp	\$15.33	\$8	\$8	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
TOC	0.5	samp	\$31.67	\$16	\$16	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Ca/Mg Hardness (200.7)	0.5	samp	\$24.33	\$12	\$12	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Total Suspended Solids (TSS)	0.5	samp	\$13.33	\$7	\$7	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Settleable Solids	0.5	samp	\$13.33	\$7	\$7	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Ammonia (NH3)	0.5	samp	\$22.67	\$11	\$11	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Phosphorous	0.5	samp	\$20.00	\$10	\$10	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
TON (TKN-NH3)	0.5	samp	\$41.67	\$21	\$21	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Cyanide	0.5	samp	\$35.00	\$18	\$18	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Sulfates	0.5	samp	\$21.00	\$11	\$11	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Sulfides	0.5	samp	\$25.00	\$13	\$13	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Surfactants (MBAS)	0.5	samp	\$28.33	\$14	\$14	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
BOD-5	0.5	samp	\$30.00	\$15	\$15	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Fluoride	0.5	samp	\$19.33	\$10	\$10	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Chlorine	0.5	samp	\$19.33	\$10	\$10	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Residual Chlorine	0.5	samp	\$15.00	\$8	\$8	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
NO2	0.5	samp	\$21.00	\$11	\$11	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
NO3	0.5	samp	\$19.33	\$10	\$10	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
VOCs (624)	0.5	samp	\$105.00	\$53	\$53	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Semi-volatile organics (625)	0.5	samp	\$208.33	\$104	\$104	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	0.5	samp	\$133.33	\$67	\$67	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Oil & Grease (1631)	0.5	samp	\$21.67	\$11	\$11	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
total Phenols	0.5	samp	\$26.67	\$13	\$13	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Priority Pollutant Metals (200.7) *	0.5	samp	\$188.00	\$94	\$94	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Mercury (245.1)	0.5	samp	\$25.00	\$13	\$13	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Mercury (1631B)	0.5	samp	\$111.67	\$56	\$56	3 samples/7 units = 0.5 samples	analytical price: average of three quotes
Acute Toxicity/Bioassy	0.15	samp	\$3,800.00	\$570	\$570	1 sample/7 units = 0.15 samples	One quote: actual cost for 2010
Subt - Pond Sampling & Analysis				\$1,353	\$1,353	one pond discharge (batch) requiring sampling & analysis prior to discharge	

PCC-6: RMU-1

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-6.8e Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischarge qualification report	
Divers (Sr. Technicians)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
SCBA Gear (2 units)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Laborer (Surface Support)	0.0	hours	\$0.00	\$0	\$0	Included in underwater inspection below	
Underwater Inspection	0.15	each	\$4,000.00	\$600	\$600	\$4,000 per event @ 1 event per year/ 7 units = 0.15 events	Based on 2010 site rate of \$3,500
Engineer (Report)	5.7	hours	\$130.00	\$741	\$741	1 events @ 40 hrs/event = 40.0 hours @ 1 units/crew = 40.0 hours/7 units = 5.7	Eng Rate: rate 2011 3rd party quote
Subt - S&A Cert'n & Report				\$1,341	\$1,341	<i>diver(s) to check discharge pipe; also engineer's predischarge qualification report</i>	Fac Pond 8 out of service empty
PCC-6.8f Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
<i>FAC Pond 1/2 Inventory in Gallons</i>	2750618.0	<i>gals</i>	<i>n/a</i>			<i>45.8 total hours req'd to pump</i>	& site waters
Labor to pump/discharge		day hrs	<i>n/a</i>	\$0	\$0	Included in PCC-6.8a above	
Tech/Sampler (day shift only)		day hrs	\$38.00	\$0	\$0	Included in PCC-6.8a above	
Settleable Solids	1.6	samp	\$13.33	\$21	\$21	45.8 hours @ 1.0 sample per 4.0 hours = 11.5 samples /7 units = 1.6 samples	analytical price: average of three quotes
Dissolved Oxygen	1.0	samp	-	\$0	\$0	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	Field Measurement analytical price: average of three quotes
Sulfide (total)	1.0	samp	\$25.00	\$25	\$25	45.8 hours @ 1.0 sample per 80.0 hours = 1.0 samples	analytical price: average of three quotes
Discharge Pump (6"/1,000 gal/min)	6.5	total hrs	\$12.34	\$80	\$80	45.8 tot hrs @ 100% total time = 45.8 hours @ 1 units/crew = 45.8 hrs/ 7 units = 6.5 hrs	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Pipe (6" Diam/3,000 LF)	19628.0	foot-hrs	\$0.0110	\$216	\$216	45.8 tot hrs @ 100% total time = 45.8 hours @ 3000 LF/crew = 137400 ft-hrs/7 units = 19,628	RSM/HC p. 475 (line item 01 54 33 70 0300)
Subtotal - Pump FAC Pond 1/2				\$342	\$342	<i>transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft)</i>	
<i>(Subt: Assemb PCC-6.8 thru 6.8f)</i>				\$165,043	\$162,911	<i>RMU-1 share of annual O&M and capital costs for leachate collection & treatment: post-closure & perpetual care frequency are equa</i>	
PCC-6.9 N/A							
Subt - N/A				\$0	\$0		
PCC-6.10 N/A							
Subt - N/A				\$0	\$0		
PCC-6.11 N/A							
Subt - N/A				\$0	\$0		
<i>(Subt: Assemb PCC-6.9 thru 6.11)</i>				\$0	\$0	<i>RMU-1 share of annual leachate transport costs - n/a, as leachate pumped directly to the AWTS</i>	
PCC-6.12 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
<i>Internal & External Inspections</i>						<i>16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr</i>	
Engineer - Inspection	3.7	Hour	\$130.00	\$481	\$481	0.5 tanks/yr x 8 hrs/tnk x 1.0 per crew = 3.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	7.3	Hour	\$38.00	\$277	\$277	0.5 tanks/yr x 8 hrs/tnk x 2.0 per crew = 7.3 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.8	Hour	\$130.00	\$234	\$234	0.5 tanks/yr x 4 hrs/tnk x 1.0 per crew = 1.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$992	\$992	<i>inspection of 16 tanks</i>	
PCC-6.13 Tank Assessments						thirty (32) tanks requiring only external inspections once every five years by 1 PE	
<i>External Only Inspections</i>						<i>30 tanks @ 5 yr inspect = 6.0 tnks/yr @ 7 areas = 0.9 tnks/yr</i>	
Engineer - Inspection	3.4	Hour	\$130.00	\$442	\$442	0.9 tanks/yr x 4 hrs/tnk x 1.0 per crew = 3.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Inspection	0	Hour	\$38.00	\$0	\$0	0.9 tanks/yr x 4 hrs/tnk x 0.0 per crew = 0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer - Reporting @ 50%	1.7	Hour	\$130.00	\$221	\$221	0.9 tanks/yr x 2 hrs/tnk x 1.0 per crew = 1.7 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Tank Assessments				\$663	\$663	<i>inspection of 32 tanks</i>	
<i>(Subt: Assemb PCC-6.12 thru 6.13)</i>				\$1,655	\$1,655	<i>RMU-1 share of annual tank assessment costs: post-closure & perpetual care frequency are equa</i>	

PCC-6: RMU-1

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-6.14 Replace Mon Well Pump							
Replace Mon Well Pumps	1.28	pump	\$900.00	\$1,152	\$1,152	51 pumps @ 2.5% per year = 1.28 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	1.28	CF	\$12.45	\$16	\$16	1.28 pumps @ 1.0 CF/pump = 1.28 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	1.28	pad	\$131.50	\$168	\$168	1.28 pads @ 2.5% per year = 1.28 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	2.55	CF	\$12.45	\$32	\$32	1.28 pads @ 2.0 CF/pad = 2.55 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	1.28	each	\$371.63	\$476	\$476	51 covers @ 2.5% per year = 1.28 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.64	CF	\$12.45	\$8	\$8	1.28 covers @ 0.5 CF/cover = 0.64 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$1,928	\$1,928	monitoring well pump maintenance and replacement	
(Subt: Assemb PCC-6.14 thru 6.14)				\$1,928	\$1,928	RMU-1 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equa	
PCC-6.15 Drainage Ditch Repair						ditches estimated to be 10 feet in width	
RMU-1 Drainage Ditches						17000 LF	drainage ditches specific to RMU-1 unit
Facility-wide Drainage Ditches						22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Drainage Ditch Repair	0.046	acre	\$5,698.00	\$262	\$262	19,825 LF x 10 ft/LF = 4.6 acres @ 1.0% per year = 0.046 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Rip-Rap Downchute Channel Repair	25	SY	\$44.30	\$1,108	\$1,108	300 LF x 15 FT/LF @ 4500.0 sf (1' dp) x 5.0% per year = 25.0 SY	unit price based upon \$44.30/SY (RMU-1 Assembly 14.19)
Subt - Drainage Ditch Repair				\$1,370	\$1,370	stormwater drainage ditch repair	
PCC-6.16 Drainage Ditch Cleaning						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
RMU-1 Drainage Ditches						17000 LF	drainage ditches specific to RMU-1 unit
Facility-wide Drainage Ditches						22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Drainage Ditch Sediment Cleaning	24.5	CY	\$2.38	\$58	\$58	19,825 LF x 10.0 ft/LF x 0.333 feet (4") = 2445 CY @ 1%/yr = 24.5 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	8.3	miles	\$3.25	\$27	\$27	33.1 tons @ 20 tons/load = 1.65 loads @ 5 miles per load = 8.3 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	33.1	ton	\$35.00	\$1,159	\$1,159	24.5 CY @ 1.35 ton/CY = 33.1 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$1,244	\$1,244	stormwater drainage ditch cleaning	
PCC-6.17 Basin Cleaning						sediment estimated to be 4 inches deep.	
Basin No. 1						140625 SF div by 8 units = 17578 SF	
Basin No. 2						150000 SF div by 8 units = 18750 SF	
Basin Sediment Cleaning	89.6	CY	\$2.38	\$213	\$213	36,328 SF x 0.333 feet (4") = 448.0 CY @ 20% per year = 89.6 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Basin Sediment	30.0	miles	\$3.25	\$98	\$98	121.0 tons @ 20 tons/load = 6.0 loads @ 5 miles/load = 30 miles	unit price based upon FAC Ponds 1/2 excavation (6.13)
Disposal of Basin Sediment	121.0	ton	\$35.00	\$4,235	\$4,235	89.6 CY @ 1.35 ton/CY = 121.0 tons	unit price based upon FAC Ponds 1/2 excavation (6.14)
Subt--Basin Cleaning				\$4,546	\$4,546	facility stormwater basin cleaning	
PCC-6.18 Culvert Maint/Replace						avg culvert = 25' (SLF 11) & 40' (sitewide); various diameters	
RMU-1 Culverts						4 culverts x 40 feet long = 160 LF	culverts specific to RMU-1 unit
Facility-wide Culverts						20 culverts x 40 feet long = 800 LF div by 8 units = 100 LF	culverts in non-specific areas of facility
Culvert Cleaning - 18" diameter avg	260	LF	\$2.14	\$556	\$556	260.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 18" diam avg (RMU-1)	10	LF	\$11.61	\$116	\$116	40.0 LF @ 0.25 culvert/yr = 10 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	40	LF	\$22.35	\$894	\$894	40.0 LF @ 1.00 culvert/yr = 40 LF	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	37.5	CY	\$2.96	\$111	\$111	50.0 LF x 0.75 CY/LF = 37.5 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	37.5	CY	\$3.86	\$145	\$145	37.5 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$1,822	\$1,822	culvert maintenance and replacement	
(Subt: Assemb PCC-6.15 thru 6.18)				\$8,981	\$8,981	RMU-1 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equa	

PCC-6: RMU-1

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-6.19 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
RMU-1 Gravel Roads						1183 LF x 15 feet wide = 1971.7 SY @ 5% per year = 98.6 SY	
Facility-wide Asphalt Roads						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 4224.0 SF	asphalt roads in non-specific areas of facility
RMU-1 Gravel Road Repair	98.6	SY	\$3.12	\$308	\$308	98.6 SY	DEC 2004 rate * deflator (2004-2010)
Facility-wide Asphalt Roads	528	SF	\$1.35	\$712	\$712	4,224.0 SF div by 8 units = 528.0 SF	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$1,020	\$1,020	road maintenance and replacement	
(Subt: Assemb PCC-6.19 thru 6.19)				\$1,020	\$1,020	RMU-1 road maintenance & replacement	

Total Non-Super hours 390.5

PCC-6.20 PPE Use/H&S Planning	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-6.20 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	36.6	days	\$0.00	\$0	\$0	390.5 hours @ 8 hr/day = 48.8 days @ 75% "D" days = 36.6 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	7.3	days	\$9.00	\$66	\$66	390.5 hours @ 8 hr/day = 48.8 days @ 15% "C" days = 7.3 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	4.9	days	\$25.00	\$123	\$123	390.5 hours @ 8 hr/day = 48.8 days @ 10% "C" days = 4.9 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	9.8	hours	\$75.00	\$735	\$735	390.5 hours @ 2.5% hr/hr = 9.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$923	\$923		
PCC-6.21 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in PCC-6.8a AWTS Operation	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
(Subt: Assemb PCC-6.20 thru 6.21)				\$923	\$923	supervision, health & safety, and certification	

PCC 6: RMU-1 Direct Cost				\$227,270	\$204,934		
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PCC-6: RMU-1				
Total Cost Summary				
Cost Category	Proposed Percent of Direct Cost	Proposed Annual Cost Post - Closure Period	Proposed Cost - Annual Perpetual Care	Cost Range
Direct Costs		\$227,270	\$204,934	
Plus Indirect Costs/Profit:				
Site Activity Management Costs	3.00%	\$6,818	\$6,148.03	Included in Gen'l Contractor G&A/Home Office (note: DEC uses 3%)
Gen'l Contractor G&A/Home Office	4.00%	\$9,091	\$8,197	5% for post-closure. (note: DEC uses 4%)
Pre-Construction Design Costs	1.00%	\$2,273	\$2,049.34	For post-closure, design costs minimal and included in Assb 6.21. (note: DEC uses 1%)
Engineering During Construction	1.00%	\$2,273	\$2,049.34	For post-closure, design costs minimal and included in Assb 6.21. (note: DEC uses 1%)
General Contractor Profit	6.00%	\$13,636	\$12,296	Contractor Profit included in unit rates & Gen' Cont G&A/Home Office (Note DEC adds 6%)
Indirect Costs & Profit	15.00%	\$34,090	\$30,740	
Subtotal - Direct/Indirect Costs		\$261,360	\$235,674	
Plus Contingency	15.00%	\$39,204	\$35,351	DEC uses 15% applied to total cost
Total - PCC-6: RMU-1		\$300,564	\$271,026	

RMU-1 Years of Post Closure

Years Since Closure

N/A

Post Closure Years Remaining

30

Post Closure Costs Remaining Years	\$9,016,922
Post Closure Costs 30-Years	\$9,016,922

PCC-7: Clos'd Lagoons/Salts Imp

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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Lagoons/Salts Parameters - Area	18.5 acres = 89667 SY =	807000 SF =	807.0 MSF	31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs
Lagoons/Salts Parameters - Fencing	3960 LF = portion of perimeter fencing for Lagoons/Salts			

PCC-7.1 Annual Visual Inspections						make visual inspections and log results; two persons required				
<i>Post-Closure</i>										
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x	1.7 insp/year x	2 per crew =	6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	0	hours	\$38.00	\$0	\$0	0 hrs/insp x	0.0 insp/year x	0 per crew =	0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.5	hours	\$38.00	\$57	\$0	3 hrs/insp x	2.0 insp/year x	2 per crew/	8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x	1.8 insp/year x	2 per crew =	7.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0	hours	\$38.00	\$0	\$0	included above				this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections				\$589	\$0	Lagoons/Salts post-closure inspections				
<i>Perpetual Care</i>										
Perpetual Care Frequencies according to Page 11 of Site-Wide Post-Closure Plan										
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x	1.0 insp/year x	2 per crew =	4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	0.0	hours	\$38.00	\$0	\$0	0 hrs/insp x	0.0 insp/year x	0 per crew =	0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.0	hours	\$38.00	\$0	\$38	4 hrs/insp x	1.0 insp/year x	2 per crew/	8 facility units = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x	1.04 insp/year x	2 per crew =	4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above				this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections Perp-Care				\$0	\$350	Lagoons/Salts perpetual care inspections				
(Subt: Assemb PCC-7.1 thru 7.1)				\$589	\$350	Lagoons/Salts visual inspections				

PCC-7.2 Perimeter Fence Maint.						one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected				
Replacement of Fencing	79.2	LF	\$20.00	\$1,584	\$1,584	31680 LF div by	8 units x	2% per year =	79.2 LF	Site Experience 2010 Rate
Subt - Perimeter Fence Maint.				\$1,584	\$1,584	Lagoons/Salts share of perimeter fence inspection & replacement				
(Subt: Assemb PCC-7.2 thru 7.2)				\$1,584	\$1,584	Lagoons/Salts share of perimeter fence inspection & replacement: post-closure & perpetual care frequency are equal				

PCC-7.3 Groundwater Monitoring						<i>not applicable - part of corrective measures activities</i>					
<i>Monit'g Events & Samples/Event</i>											
						0.0 quart'lly +	0.0 semi-ann +	0.0 b-ann'l x	1.05 each =	0.0 samp	includes 5% QA sampling
<i>Post-Closure</i>											
Technician	0	hours	\$38.00	\$0	\$0	0.0 samps @	1.0 hrs/samp x	2 per crew =	0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote	
Sampling Supplies	0	samp	\$25.00	\$0	\$0	0.0 samps				bottles, shipping supplies	
VOCs	0	samp	\$105.00	\$0	\$0	0.0 samps				Average of three quotes	
Subt - GW Monitoring				\$0	\$0	post closure groundwater monitoring					
<i>Monit'g Events & Samples/Event</i>											
						0.0 wells @	sample/5 years	1.05 each =	0.0 samp/yr	No DEC estimate for perpetual care	
<i>Perpetual Care</i>											
Perpetual care groundwater monitoring once every five years											
Technician	0	hours	\$38.00	\$0	\$0	0.0 samps @	1.0 hrs/samp x	2 per crew =	0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote	
Sampling Supplies	0	samp	\$25.00	\$0	\$0	0.0 samples				bottles, shipping supplies	
VOCs	0	samp	\$105.00	\$0	\$0	0.0 samples				Average of three quotes	
Subt - GW Monitoring				\$0	\$0	perpetual care groundwater monitoring					

PCC-7: Clos'd Lagoons/Salts Imp

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
						production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure	
PCC-7.4 Outfalls 002,003,004 SPDES Mon						12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples	sampling & analysis according to SPDES Permit
<i>Weekly Sampling Events</i>						2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	
Technician	39	hours	\$38.00	\$1,482	\$1,482		
Pickup Truck	39	hours	\$10.45	\$408	\$408		
Sampling Equipment	39	hours	\$5.00	\$195	\$195		
Sampling Supplies	19.5	samp	\$5.00	\$98	\$98	19.5 samples	samplers, meters, etc.
pH	19.5	samp	\$10.67	\$208	\$208	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	bottles, shipping supplies
Specific Conductance	19.5	samp	\$13.33	\$260	\$260	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Total Suspended Solids (TSS)	16.2	samp	\$13.33	\$216	\$216	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Total Dissolved Solids	16.2	samp	\$15.00	\$243	\$243	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Settleable Solids	76.1	samp	\$13.33	\$1,015	\$1,015	3 outfalls @ 3.9 samp/OF/week @ 52 weeks = 608.4 samples/8 units 76.1 samples	daily during flow assume 3.9/week: Average of three quotes
BOD-5	4.5	samp	\$31.67	\$143	\$143	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Dissolved Oxygen	4.5	samp	\$17.50	\$79	\$79	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Ammonia (NH3)	4.5	samp	\$22.67	\$102	\$102	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
VOCs (624)	9	samp	\$105.00	\$945	\$945	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Oil & Grease (1631)	9	samp	\$40.00	\$360	\$360	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Copper	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Zinc	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Phenols	4.5	samp	\$26.67	\$120	\$120	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	19.5	samp	\$133.33	\$2,600	\$2,600	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
2-Chloroethyl vinyl ether	0	samp	\$86.67	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Dichlorodifluoromethane	9	samp	\$75.00	\$675	\$675	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Methylene chloride	0	samp	\$75.00	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Shipping	19.5	samp	\$5.00	\$98	\$98		
Subt - SPDES Outfall Sampling & Analysis				\$9,403	\$9,403	three outfalls requiring weekly sampling & analysis for each year during post-closure	
						Monthly Discharge Monitoring Reports	
PCC-7.4a Discharge Monitoring Report							
Engineer (Report)	3	hours	\$130.00	\$390	\$390	12 months @ 2 hrs/event = 24.0 hours @ div by 8 units = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Clerical	6	hours	\$45.00	\$270	\$270	12 months @ 4 hrs/event = 48.0 hours @ div by 8 units = 6.0 hours	
Subt - Discharge Monitoring Report (Subt: Assemb PCC-7.3 thru 7.4a)				\$660	\$660	submission of SPDES Permit required Discharge Monitoring Report (DMR)	
				\$10,063	\$10,063	Lagoons/Salts groundwater & stormwater monitoring activities	
PCC-7.5 Landfill Cover Maint.							
Replacement of Cover	0.185	acre	\$20,973.33	\$3,880	\$3,880	18.5 acre @ 1.0% per year = 0.185 acres/yr	unit price based upon vegetation, topsoil, from RMU-1
Subt - Landfill Cover Maint.				\$3,880	\$3,880	Lagoons/Salts cap maintenance and replacement	Assemblies 14.17 thru 14.18
PCC-7.6 Mowing/Grooming							
Mowing	807.0	MSF	\$3.21	\$2,593	\$2,593	807.0 MSF @ 1.0 per year = 807.0 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	161.4	MSF	\$3.82	\$616	\$616	807.0 MSF @ 1.0 per 5.0 years = 161.4 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming (Subt: Assemb PCC-5.5 thru 5.6)				\$3,209	\$3,209	Lagoons/Salts mowing and fertilizing	
				\$7,090	\$7,090	Lagoons/Salts cap maintenance activities: post-closure & perpetual care frequency are equal	

PCC-7: Clos'd Lagoons/Salts Imp

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-7.7 Leachate System Mgmt							
Subt - Leachate Coll Syst Mgmt				\$0	\$0	not applicable	
PCC-7.7a AWTS Operation							
Subt - AWTS Operation				\$0	\$0		
(Subt: Assemb PCC-7.7 thru 7.7a)				\$0	\$0		
PCC-7.8 N/A							
Subt - N/A				\$0	\$0	not applicable	
PCC-7.9 N/A							
Subt - N/A				\$0	\$0	not applicable	
PCC-7.10 N/A							
Subt - N/A				\$0	\$0	not applicable	
(Subt: Assemb PCC-7.8 thru 7.10)				\$0	\$0		
PCC-7.11 Tank Assessments							
Subt - Tank Assessments				\$0	\$0	not applicable	
PCC-7.12 Tank Assessments							
Subt - Tank Assessments				\$0	\$0	not applicable	
(Subt: Assemb PCC-7.11 thru 7.12)				\$0	\$0		
PCC-7.13 Replace Mon Well Pump							
Subt - Replace Mon Well Pumps				\$0	\$0	not applicable	
(Subt: Assemb PCC-7.13 thru 7.13)				\$0	\$0		
PCC-7.14 Drainage Ditch Repair							
Lagoons/Salts Drainage Ditches						ditches estimated to be 10 feet in width	
Facility-wide Drainage Ditches						6950 LF	drainage ditches specific to Lagoons/Salts areas
Drainage Ditch Repair	0.022	acre	\$5,698.00	\$125	\$125	22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Rip-Rap Downchute Channel Repair	0	SY	\$44.30	\$0	\$0	9,775 LF x 10 ft/LF = 2.244 acres @ 1.0% per year = 0.022 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Subt - Drainage Ditch Repair				\$125	\$125	0 LF x 0 FT/LF @ 9.0 SF/SY @ 5.0% per year = 0.0 SY	unit price based upon \$44.30/SY (RMU-1 Assembly 14.19)
						stormwater drainage ditch repair	
PCC-7.15 Drainage Ditch Cleaning							
Lagoons/Salts Drainage Ditches						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
Facility-wide Drainage Ditches						4000 LF	drainage ditches specific to Lagoons/Salts areas
Drainage Ditch Sediment Cleaning	8.4	CY	\$2.38	\$20	\$20	22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Transportation of Ditch Sediment	5	miles	\$3.25	\$16	\$16	6,825.0 LF x 10.0 ft/LF x 0.333 feet (4") = 1206 CY @ 1%/yr = 8.4 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Disposal of Ditch Sediment	11.3	ton	\$35.00	\$396	\$396	11.3 tons @ 20 tons/load = 0.6 loads @ 5 miles per load = 5.0 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Subt - Drainage Ditch Cleaning				\$432	\$432	8.4 CY @ 1.35 ton/CY = 11.3 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
						stormwater drainage ditch cleaning	

PCC-7: Clos'd Lagoons/Salts Imp

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-7.16 Basin Cleaning						sediment estimated to be 4 inches deep.	
<i>Basin No. 1</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin No. 2</i>						150000 SF div by 8 units = 18750 SF	
Basin Sediment Cleaning	89.6	CY	\$2.38	\$213	\$213	36,328 SF x 0.333 feet (4") = 448.0 CY @ 20% per year = 89.6 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Basin Sediment	30.0	miles	\$3.25	\$98	\$98	121.0 tons @ 20 tons/load = 6.0 loads @ 5 miles/load = 30 miles	unit price based upon FAC Ponds 1/2 excavation (6.13)
Disposal of Basin Sediment	121.0	ton	\$35.00	\$4,235	\$4,235	89.6 CY @ 1.35 ton/CY = 121.0 tons	unit price based upon FAC Ponds 1/2 excavation (6.14)
Subt--Basin Cleaning				\$4,546	\$4,546	facility stormwater basin cleaning	
PCC-7.17 Culvert Maint/Replace						avg culvert = 25' (SLF 11) & 40' (sitewide); various diameters	
<i>Lagoons/Salts Culverts</i>						3 culverts x 40 feet long = 120 LF	culverts specific to Lagoons/Salts areas
<i>Facility-wide Culverts</i>						20 culverts x 40 feet long = 800 LF div by 8 units = 100 LF	culverts in non-specific areas of facility
Culvert Cleaning - 8" diameter avg	220	LF	\$2.14	\$470	\$470	220.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 8" diam avg (SLF 10)	10	LF	\$11.61	\$116	\$116	40.0 LF @ 0.25 pipe/yr = 10.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	40	LF	\$22.35	\$894	\$894	40.0 LF	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	37.5	CY	\$2.96	\$111	\$111	50.0 LF x 0.75 CY/LF = 37.5 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	37.5	CY	\$3.86	\$145	\$145	37.5 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$1,737	\$1,737	culvert maintenance and replacement	
<i>(Subt: Assemb PCC-7.14 thru 7.17)</i>				\$6,840	\$6,840	Lagoons/Salts storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal	

PCC-7.18 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
<i>Lagoons/Salts Gravel Roads</i>						900 LF x 15 feet wide = 1500 SY @ 5% per year = 75 SY	
<i>Facility-wide Asphalt Roads</i>						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 4224.0 SF	asphalt roads in non-specific areas of facility
Lagoons/Salts Gravel Road Repair	75	SY	\$3.12	\$234	\$234	75.0 SY	DEC 2004 rate * deflator (2004-2010)
Facility-wide Asphalt Roads	528	SF	\$1.35	\$712	\$712	4,224.0 SF div by 8 units = 528.0 SF	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$947	\$947	road maintenance and replacement	
<i>(Subt: Assemb PCC-7.18 thru 7.18)</i>				\$947	\$947	Lagoons/Salts road maintenance & replacement	

Total Non-Super hours 54.5

PCC-7.19 PPE Use/H&S Planning						Level C @ 00%; Mod Level C @ 25%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	5.1	days	\$0.00	\$0	\$0	54.5 hours @ 8 hr/day = 6.8 days @ 75% "D" days = 5.1 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	1.7	days	\$9.00	\$15	\$15	54.5 hours @ 8 hr/day = 6.8 days @ 25% "Mod C" days = 1.7 days	25% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	0	days	\$25.00	\$0	\$0	54.5 hours @ 8 hr/day = 6.8 days @ 0% "C" days = 0.0 days	0% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	1.4	hours	\$75.00	\$105	\$105	54.5 hours @ 2.5% hr/hr = 1.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$120	\$120		
PCC-7.20 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in AWTS Assemblies of PCC-1 through PCC-6 and CM-1	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
<i>(Subt: Assemb PCC-7.19 thru 7.20)</i>				\$120	\$120	supervision, health & safety, and certification	

PCC 7: Lagoons/Salts Direct Cost				\$27,232	\$26,993		
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PCC-7: Lagoons/Salts Imp				
Total Cost Summary				
Cost Category	Proposed Percent of Direct Cost	Proposed Annual Cost Post - Closure Period	Proposed Cost - Annual Perpetual Care	Cost Range
Direct Costs		\$27,232	\$26,993	
Plus Indirect Costs/Profit:				
Site Activity Management Costs	3.00%	\$817	\$810	Included in Gen'l Contractor G&A/Home Office (note: DEC uses 3%)
Gen'l Contractor G&A/Home Office	4.00%	\$1,089	\$1,080	5% for post-closure. (note: DEC uses 4%)
Pre-Construction Design Costs	1.00%	\$272	\$270	For post-closure, design costs minimal and included in Assb 7.20. (note: DEC uses 1%)
Engineering During Construction	1.00%	\$272	\$270	For post-closure, design costs minimal and included in Assb 7.20. (note: DEC uses 1%)
General Contractor Profit	6.00%	\$1,634	\$1,620	Contractor Profit included in unit rates & Gen' Cont G&A/Home Office (Note DEC adds 6%)
Indirect Costs & Profit	15.00%	\$4,085	\$4,049	
Subtotal - Direct/Indirect Costs		\$31,317	\$31,042	
Plus Contingency	15.00%	\$4,698	\$4,656	DEC uses 15% applied to total cost
Total - PCC-7: Lagoons/Salts Imp		\$36,015	\$35,698	

Lagoons & Salts Years of Post Closure

Years Since Closure

N/A

Post Closure Years Remaining

30

Post Closure Costs Remaining Years	\$1,080,444
Post Closure Costs 30-Years	\$1,080,444

PCC-8: Process Tank Area

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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Process Tank Parameters - Total Area						6.0 acres = 29217 SY = 262950 SF = 263.0 MSF	31680 LF (6 Mi.) = total est'd perim fencing for eight (8) SLFs
Process Tank Parameters - Concrete Cover Area						1.6 acres = 7813 SY = 70317 SF = 70.3 MSF	
Process Tank Parameters - Grass/Soil Cover Area						1.7 acres = 8345.9 SY = 75113 SF = 75.1 MSF	
Process Tank Parameters - 80-mil HDPE Cover Area						0.2 acres = 855.56 SY = 7700 SF = 7.7 MSF	
Process Tank Parameters - Asphalt Cover Area						2.5 acres = 12202 SY = 109820 SF = 109.8 MSF	
Process Tank Parameters - Fencing							3960 LF = portion of perimeter fencing for Process Tank Area

PCC-8.1 Annual Visual Inspections						make visual inspections and log results; two persons required		
<i>Post-Closure</i>								
Technician - Landfill	8.0	hours	\$38.00	\$304	\$0	2 hrs/insp x 2.0 insp/year x 2 per crew =	8.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	0.0	hours	\$38.00	\$0	\$0	0 hrs/insp x 0.0 insp/year x 0 per crew =	0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.5	hours	\$38.00	\$57	\$0	3 hrs/insp x 2.0 insp/year x 2 per crew/	8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	8.0	hours	\$38.00	\$304	\$0	2 hrs/insp x 2.0 insp/year x 2 per crew =	8.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above		this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections				\$665	\$0	Process Tank Area post-closure inspections		
<i>Perpetual Care</i>								
Technician - Landfill	8.0	hours	\$38.00	\$0	\$304	2 hrs/insp x 2.0 insp/year x 2 per crew =	8.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	0.0	hours	\$38.00	\$0	\$0	0 hrs/insp x 0.0 insp/year x 0 per crew =	0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	1.5	hours	\$38.00	\$0	\$57	3 hrs/insp x 2.0 insp/year x 2 per crew/	8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	8.0	hours	\$38.00	\$0	\$304	2 hrs/insp x 2.0 insp/year x 2 per crew =	8.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above		this activity s/b included with annual storm water inspect'ns
Subtotal - Annual Inspections Perp-Care				\$0	\$665	Process Tank Area perpetual care inspections		
(Subt: Assemb PCC-8.1 thru 8.1)				\$665	\$665	Process Tank Area visual inspections		

PCC-8.2 Perimeter Fence Maint.						one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected		
Replacement of Fencing	79.2	LF	\$20.00	\$1,584	\$1,584	31680 LF div by 8 units x 2% per year =	79.2 LF	Site Experience 2010 Rate
Subt - Perimeter Fence Maint.				\$1,584	\$1,584	Process Tank Area share of perimeter fence inspection & replacement		
(Subt: Assemb PCC-8.2 thru 8.2)				\$1,584	\$1,584	Process Tank Area share of perimeter fence inspection & replacement: post-closure & perpetual care frequency are equal		

PCC-8.3 Groundwater Monitoring						not applicable - part of corrective measures activities		
<i>Monit'g Events & Samples/Event</i>								
						0.0 quart'ly + 0.0 semi-ann + 0.0 b-ann'l x 1.05 each =	0.0 samp	includes 5% QA sampling
<i>Post-Closure</i>								
Technician	0	hours	\$38.00	\$0	\$0	0.0 samps @ 1.0 hrs/samp x 2 per crew =	0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	0	samp	\$25.00	\$0	\$0	0.0 samps		bottles, shipping supplies
VOCs	0	samp	\$105.00	\$0	\$0	0.0 samps		Average of three quotes
Subt - GW Monitoring				\$0	\$0	not applicable		
<i>Monit'g Events & Samples/Event</i>								
						0.0 wells @ sample/5 years 1.05 each =	0.0 samp/yr	
<i>Perpetual Care</i>								
not applicable - part of corrective measures activities								
Technician	0	hours	\$38.00	\$0	\$0	0.0 samps @ 1.0 hrs/samp x 2 per crew =	0.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	0	samp	\$25.00	\$0	\$0	0.0 samples		bottles, shipping supplies
VOCs	0	samp	\$105.00	\$0	\$0	0.0 samples		Average of three quotes
Subt - GW Monitoring				\$0	\$0	not applicable		

PCC-8: Process Tank Area

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
						production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure	
PCC-8.4 Outfalls 002,003,004 SPDES Mon						12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples	sampling & analysis according to SPDES Permit
<i>Weekly Sampling Events</i>						39.0 hours	
Technician	39	hours	\$38.00	\$1,482	\$1,482	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	
Pickup Truck	39	hours	\$10.45	\$408	\$408		
Sampling Equipment	39	hours	\$5.00	\$195	\$195	156 samples 2.0 hrs/samp = 312.0 hours @ 1 units/crew/8 units = 39.0 hours	samplers, meters, etc.
Sampling Supplies	19.5	samp	\$5.00	\$98	\$98	19.5 samples	bottles, shipping supplies
pH	19.5	samp	\$10.67	\$208	\$208	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Specific Conductance	19.5	samp	\$13.33	\$260	\$260	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
Total Suspended Solids (TSS)	16.2	samp	\$13.33	\$216	\$216	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Total Dissolved Solids	16.2	samp	\$15.00	\$243	\$243	2 outfalls @ 1 samp/OF/week + 1 OF @ 2/month @ 52 weeks = 130 samp/8 units = 16.2 samp	weekly: Average of three quotes
Settleable Solids	76.1	samp	\$13.33	\$1,015	\$1,015	3 outfalls @ 3.9 samp/OF/week @ 52 weeks = 608.4 samples/8 units 76.1 samples	daily during flow assume 3.9/week: Average of three quotes
BOD-5	4.5	samp	\$31.67	\$143	\$143	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Dissolved Oxygen	4.5	samp	\$17.50	\$79	\$79	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Ammonia (NH3)	4.5	samp	\$22.67	\$102	\$102	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
VOCs (624)	9	samp	\$105.00	\$945	\$945	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Oil & Grease (1631)	9	samp	\$40.00	\$360	\$360	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Copper	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Zinc	4.5	samp	\$17.67	\$80	\$80	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Phenols	4.5	samp	\$26.67	\$120	\$120	3 outfalls @ 1 samp/OF/month @ 12 months = 36 samples/8 units = 4.5 samples	monthly: Average of three quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	19.5	samp	\$133.33	\$2,600	\$2,600	3 outfalls @ 1 samp/OF/week @ 52 weeks = 156 samples/8 units = 19.5 samples	weekly: Average of three quotes
2-Chloroethyl vinyl ether	0	samp	\$86.67	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Dichlorodifluoromethane	9	samp	\$75.00	\$675	\$675	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes
Methylene chloride	0	samp	\$75.00	\$0	\$0	3 outfalls @ 2 samp/OF/month @ 12 months = 72 samples/8 units = 9.0 samples	2/month: Average of three quotes (inc VOC 624 analysis)
Shipping	19.5	samp	\$5.00	\$98	\$98		
Subt - SPDES Outfall Sampling & Analysis				\$9,403	\$9,403	three outfalls requiring weekly sampling & analysis for each year during post-closure	
						Monthly Discharge Monitoring Reports	
PCC-8.4a Discharge Monitoring Report						12 months @ 2 hrs/event = 24.0 hours @ div by 8 units = 3.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Engineer (Report)	3	hours	\$130.00	\$390	\$390		
Clerical	6	hours	\$45.00	\$270	\$270	12 months @ 4 hrs/event = 48.0 hours @ div by 8 units = 6.0 hours	
Subt - Discharge Monitoring Report				\$660	\$660	submittal of SPDES Permit required Discharge Monitoring Report (DMR)	
(Subt: Assemb PCC-8.3 thru 8.4a)				\$10,063	\$10,063	Process Tank Area groundwater & stormwater monitoring activities	
PCC-8.5 Landfill Cover Maint.							
Grout Cracks/Joints - Conc Cover	351.6	SF	\$8.75	\$3,076	\$3,076	70317 SF @ 0.5% per year = 351.6 SF/yr	2004 DEC Rate * Implicit Deflator
Patch Concrete - Concrete Cover	1406.3	SF	\$2.49	\$3,506	\$3,506	70317 SF @ 2.0% per year = 1406.3 SF/yr	2004 DEC Rate * Implicit Deflator
Seal Cracks - Asphalt Cover	61.0	SY	\$6.40	\$391	\$391	109820 SF @ 0.5% per year = 549.1 SF/yr = 61.0 SY/year	2004 DEC Rate * Implicit Deflator
Replace Asphalt Cover	2196.4	SF	\$1.35	\$2,964	\$2,964	109820 SF @ 2.0% per year = 2196.4 SF/yr	2004 DEC Rate * Implicit Deflator
Replace 80-mil HDPE	154.0	SF	\$2.85	\$438	\$438	7700 SF @ 2.0% per year = 154.0 SF/yr	2004 DEC Rate * Implicit Deflator
Replace Soil/Grass Cover	0.017	acre	\$26,217.00	\$446	\$446	1.7 acres @ 1.0% per year = 0.017 acres/yr	unit price based upon vegetation, topsoil, from RMU-1
Subt - Cover Maintenance				\$10,820	\$10,820	Process Tank Area upper cap maintenance and replacement	
PCC-8.6 Mowing/Grooming							
Mowing	75.1	MSF	\$3.21	\$241	\$241	75.1 MSF @ 1.0 per year = 75.1 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	15.0	MSF	\$3.82	\$57	\$57	75.1 MSF @ 1.0 per 5.0 years = 15.0 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming				\$299	\$299	Process Tank Area mowing and fertilizing	
(Subt: Assemb PCC-8.5 thru 8.6)				\$11,118	\$11,118	Process Tank Area cap maintenance activities: post-closure & perpetual care frequency are equal	

PCC-8: Process Tank Area

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-8.7 Leachate System Mgmt							
Subt - Leachate Coll Syst Mgmt				\$0	\$0	not applicable	
PCC-8.7a AWTs Operation							
Subt - AWTs Operation				\$0	\$0		
(Subt: Assemb PCC-8.7 thru 8.7a)				\$0	\$0		
PCC-8.8 N/A							
Subt - N/A				\$0	\$0	not applicable	
PCC-8.9 N/A							
Subt - N/A				\$0	\$0	not applicable	
PCC-8.10 N/A							
Subt - N/A				\$0	\$0	not applicable	
(Subt: Assemb PCC-8.8 thru 8.10)				\$0	\$0		
PCC-8.11 Tank Assessments							
Subt - Tank Assessments				\$0	\$0	not applicable	
PCC-8.12 Tank Assessments							
Subt - Tank Assessments				\$0	\$0	not applicable	
(Subt: Assemb PCC-8.11 thru 8.12)				\$0	\$0		
PCC-8.13 Replace Mon Well Pump							
Subt - Replace Mon Well Pumps				\$0	\$0	not applicable	
(Subt: Assemb PCC-8.13 thru 8.13)				\$0	\$0		
PCC-8.14 Drainage Ditch Repair							
Process Tank Area Drainage Ditches						ditches estimated to be 10 feet in width	
Facility-wide Drainage Ditches						0 LF	drainage ditches specific to Process Tank Area
Drainage Ditch Repair	0.006	acre	\$5,698.00	\$34	\$34	22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Rip-Rap Downchute Channel Repair	0	SY	\$44.30	\$0	\$0	2,825 LF x 10 ft/LF = 0.649 acres @ 1.0% per year = 0.006 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Subt - Drainage Ditch Repair				\$34	\$34	0 LF x 0 FT/LF @ 9.0 SF/SY @ 5.0% per year = 0.0 SY	unit price based upon \$44.30/SY (RMU-1 Assembly 14.19)
						stormwater drainage ditch repair	
PCC-8.15 Drainage Ditch Cleaning							
Process Tank Area Drainage Ditches						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
Facility-wide Drainage Ditches						4000 LF	drainage ditches specific to Process Tank Area
Drainage Ditch Sediment Cleaning	8.4	CY	\$2.38	\$20	\$20	22600 LF div by 8 units = 2825 LF	drainage ditches in non-specific areas of facility
Transportation of Ditch Sediment	5	miles	\$3.25	\$16	\$16	6,825.0 LF x 10.0 ft/LF x 0.333 feet (4") = 1206 CY @ 1%/yr = 8.4 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Disposal of Ditch Sediment	11.3	ton	\$35.00	\$396	\$396	11.3 tons @ 20 tons/load = 0.6 loads @ 5 miles per load = 5.0 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Subt - Drainage Ditch Cleaning				\$432	\$432	8.4 CY @ 1.35 ton/CY = 11.3 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
						stormwater drainage ditch cleaning	

PCC-8: Process Tank Area

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-8.16 Basin Cleaning						sediment estimated to be 4 inches deep.	
<i>Basin No. 1</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin No. 2</i>						150000 SF div by 8 units = 18750 SF	
Basin Sediment Cleaning	89.6	CY	\$2.38	\$213	\$213	36,328 SF x 0.333 feet (4") = 448.0 CY @ 20% per year = 89.6 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Basin Sediment	30.0	miles	\$3.25	\$98	\$98	121.0 tons @ 20 tons/load = 6.0 loads @ 5 miles/load = 30 miles	unit price based upon FAC Ponds 1/2 excavation (6.13)
Disposal of Basin Sediment	121.0	ton	\$35.00	\$4,235	\$4,235	89.6 CY @ 1.35 ton/CY = 121.0 tons	unit price based upon FAC Ponds 1/2 excavation (6.14)
Subt--Basin Cleaning				\$4,546	\$4,546	facility stormwater basin cleaning	
PCC-8.17 Culvert Maint/Replace						avg culvert = 25' (SLF 11) & 40' (sitewide); various diameters	
<i>Process Tank Area Culverts</i>						0 culverts x 40 feet long = 120 LF	
<i>Facility-wide Culverts</i>						20 culverts x 40 feet long = 800 LF div by 8 units = 100 LF	
Culvert Cleaning - 18" diameter avg	100	LF	\$2.14	\$214	\$214	100.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 18" diam avg (Proc Tank)	0	LF	\$11.61	\$0	\$0	0.0 LF @ 0.0 pipe/yr = 0.0 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	40	LF	\$22.35	\$894	\$894	40.0 LF	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	30	CY	\$2.96	\$89	\$89	40.0 LF x 0.75 CY/LF = 30.0 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	30	CY	\$3.86	\$116	\$116	30.0 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$1,313	\$1,313	culvert maintenance and replacement	
(Subt: Assemb PCC-8.14 thru 8.17)				\$6,325	\$6,325	Process Tank Area storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal	

PCC-8.18 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
<i>Process Tank Area Gravel Roads</i>						0 LF x 15 feet wide = 1500 SY @ 5% per year = 0.0 SY	
<i>Facility-wide Asphalt Roads</i>						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 4224.0 SF	
Proc Tank Area Gravel Road Repair	0	SY	\$3.12	\$0	\$0	0.0 SY	asphalt roads in non-specific areas of facility
Facility-wide Asphalt Roads	528	SF	\$1.35	\$712	\$712	4,224.0 SF div by 8 units = 528.0 SF	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$712	\$712	road maintenance and replacement	
(Subt: Assemb PCC-8.18 thru 8.18)				\$712	\$712	Process Tank Area road maintenance & replacement	

Total Non-Super hours 56.5

PCC-8.19 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	5.3	days	\$0.00	\$0	\$0	56.5 hours @ 8 hr/day = 7.1 days @ 75% "D" days = 5.3 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	1.1	days	\$9.00	\$10	\$10	56.5 hours @ 8 hr/day = 7.1 days @ 15% "Mod C" days = 1.1 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	0.7	days	\$25.00	\$18	\$18	56.5 hours @ 8 hr/day = 7.1 days @ 10% "C" days = 0.7 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	1.4	hours	\$75.00	\$105	\$105	56.5 hours @ 2.5% hr/hr = 1.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$132	\$132		
PCC-8.20 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in AWTS Assemblies of PCC-1 through PCC-6 and CM-1	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
(Subt: Assemb PCC-8.19 thru 8.20)				\$132	\$132	supervision, health & safety, and certification	

PCC 8: Process Tank Area Direct Cost				\$30,600	\$30,600		
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PCC-8: Process Tank Area				
Total Cost Summary				
Cost Category	Proposed Percent of Direct Cost	Proposed Annual Cost Post - Closure Period	Proposed Cost - Annual Perpetual Care	Cost Range
Direct Costs		\$30,600	\$30,600	
Plus Indirect Costs/Profit:				
Site Activity Management Costs	3.00%	\$918	\$918.00	Included in Gen'l Contractor G&A/Home Office (note: DEC uses 3%)
Gen'l Contractor G&A/Home Office	4.00%	\$1,224	\$1,224	5% for post-closure. (note: DEC uses 4%)
Pre-Construction Design Costs	1.00%	\$306	\$306.00	For post-closure, design costs minimal and included in Assb 8.20. (note: DEC uses 1%)
Engineering During Construction	1.00%	\$306	\$306.00	For post-closure, design costs minimal and included in Assb 8.20. (note: DEC uses 1%)
General Contractor Profit	6.00%	\$1,836	\$1,836	Contractor Profit included in unit rates & Gen' Cont G&A/Home Office (Note DEC adds 6%)
Indirect Costs & Profit	15.00%	\$4,590	\$4,590	
Subtotal - Direct/Indirect Costs		\$35,190	\$35,190	
Plus Contingency	15.00%	\$5,279	\$5,279	DEC uses 15% applied to total cost
Total - PCC-8: Process Tank Area		\$40,469	\$40,469	

Process Tank Area Years of Post Closure

Years Since Closure

N/A

Post Closure Years Remaining

30

Post Closure Costs Remaining Years	\$1,214,055
Post Closure Costs 30-Years	\$1,214,055

NOTE: Sheet to be added.

PCC-9.01: RMU-2 (1-Cell)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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RMU-2 Parameters - Area				6.9 acres =	33,396 SY =	300,564 SF =	300.6 MSF	31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs
RMU-2 Parameters - Fencing								0 LF = portion of perimeter fencing for RMU-2

Perimeter Ditch	2,290 linear feet	585+585+560+560 = 2,290	
Drainage Tile System	2,939 linear feet	6.9 acres * 426 LF/acre = 2,939 LF	
MSE Wall	1,665 linear feet		

PCC-9.01.1 Annual Visual Inspections						make visual inspections and log results; two persons required				
<i>Post-Closure</i>										
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x	1.7 insp/year x	2 per crew =	6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x	1.7 insp/year x	2 per crew =	6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0	hours	\$38.00	\$0	\$0	3 hrs/insp x	2.0 insp/year x	2 per crew/	8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x	1.8 insp/year x	2 per crew =	7.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0	hours	\$38.00	\$0	\$0	included above				this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	8	hours	\$130.00	\$1,040	\$0	8 hrs/insp x	1.0 insp/year x	1 per crew =	8.0 hours	
Subtotal - Annual Inspections				\$1,830	\$0	RMU-2 post-closure inspections				
<i>Perpetual Care</i>										
Perpetual Care Frequencies according to Page 11 of Site-Wide and RMU-2 Post-Closure Plans										
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x	1.0 insp/year x	2 per crew =	4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x	1.0 insp/year x	2 per crew =	4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0.0	hours	\$38.00	\$0	\$0	4 hrs/insp x	1.0 insp/year x	2 per crew/	8 facility units = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x	1.04 insp/year x	2 per crew =	4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above				this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	8	hours	\$130.00	\$1,040	\$1,040	8 hrs/insp x	1.0 insp/year x	1 per crew =	8.0 hours	
Subtotal - Annual Inspections Perp-Care				\$0	\$1,504	RMU-2 perpetual care inspections				
(Subt: Assemb PCC-9.01.1)				\$1,830	\$1,504	RMU-2 visual inspections. The Cost for facility fence inspection is already provided in the post closure estimate for 8 other units				

PCC-9.01.2 Perimeter Fence Maint.						one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected				
Subt - Perimeter Fence Maint.				\$0	\$0	<i>The Cost for facility fence repair is already provided in the post closure estimate for 8 other units</i>				
(Subt: Assemb PCC-9.01.2)				\$0	\$0					

PCC-9.01.3 Maint. Benchmarks/Surv						Annual inspection only				
Maint of Benchmarks & Surveying	0	acres	\$0.00	\$0	\$0	Included in PCC-9.01.1				
Subt - Benchmarks & Surveying				\$0	\$0					
(Subt: Assemb PCC-9.01.3)				\$0	\$0					

NOTE: Sheet to be added.

PCC-9.01: RMU-2 (1-Cell)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.01.4 Groundwater Monitoring						<i>sampling crew composed of two technicians; 9 monitoring wells</i>	
<i>Monit'g Events & Samples/Event</i>						<i>0.0 quart'ly + 16.0 semi-ann + 1.0 b-ann'l x 1.05 each = 17.3 samp</i>	<i>includes 5% QA sampling</i>
<i>Post-Closure</i>							
Technician	34.6	hours	\$38.00	\$1,315	\$0	17.3 samps @ 1.0 hrs/samp x 2 per crew = 34.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	17.3	samp	\$25.00	\$433	\$0	17.3 samps	bottles, shipping supplies
VOCs	17.3	samp	\$105.00	\$1,817	\$0	17.3 samps	Average of three quotes
Subt - GW Monitoring				\$3,564	\$0	<i>post closure groundwater monitoring</i>	
PCC-9.01.5 Outfalls 002,003,004 SPDES Mon						<i>production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure</i>	
<i>Weekly Sampling Events</i>						<i>12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples</i>	<i>sampling & analysis according to SPDES Permit</i>
Subt - SPDES Outfall Sampling & Analysis				\$0	\$0	<i>The Cost for facility stormwater discharge is already provided in the post closure estimate for 8 other units</i>	
PCC-9.01.6 Discharge Monitoring Report						<i>Monthly Discharge Monitoring Reports</i>	
Subt - Discharge Monitoring Report				\$0	\$0	<i>submittal of SPDES Permit required Discharge Monitoring Report (DMR)</i>	
						<i>The Cost for facility stormwater discharge is already provided in the post closure estimate for 8 other units</i>	
(Subt: Assemb PCC-9.01.4 thru 9.01.6)				\$3,564	\$391	<i>RMU-2 groundwater & stormwater monitoring activities</i>	
PCC-9.01.7 Landfill Cover Maint.						<i>6.9 acre @ 0.5% per year = 0.0345 acres/yr</i>	
Replacement of Cover	0.0345	acre	\$20,973.33	\$724	\$724		unit price based upon vegetation, topsoil, from RMU-1, Assemblies 14.17 thru 14.18
Subt - Landfill Cover Maint.				\$724	\$724	<i>RMU-2 upper cap maintenance and replacement</i>	
PCC-9.01.8 Mowing/Grooming						<i>300.6 MSF @ 1.0 per year = 300.6 MSF</i>	
Mowing	300.6	MSF	\$3.21	\$966	\$966		DEC 2004 rate * deflator (2004-2010)
Fertilizing	60.1	MSF	\$3.82	\$230	\$230	<i>300.6 MSF @ 1.0 per 300.6 MSF 60.1 MSF</i>	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming				\$1,195	\$1,195	<i>RMU-2 mowing and fertilizing</i>	
(Subt: Assemb PCC-9.01.7 thru 9.01.8)				\$1,919	\$1,919	<i>RMU-2 cap maintenance activities: post-closure & perpetual care frequency are equal</i>	
PCC-9.01.9 MSE Wall Maint.						<i>\$3.03 based on 6,600 LF for 6-cell scenario.</i>	
MSE Wall Maint.	1665	LF	\$3.03	\$5,045	\$5,045	<i>1,665 LF of MSE wall</i>	WM/Golder Guidance Document (12-1-10)
Subt - MSE Wall Maint.				\$5,045	\$5,045	<i>RMU-2 MSE Wall maintenance</i>	
(Subt: Assemb PCC-9.01.9)				\$5,045	\$5,045		

NOTE: Sheet to be added.

PCC-9.01: RMU-2 (1-Cell)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.01.10 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment	26049	gal	\$0.0178	\$464	\$0	26,049 gals estimated annual leachate volume based average prediction 0-30 years post closure	unit price derived from AWTS O&M model
Leachate Treatment - Perpetual Care	5172	gal	\$0.0178	\$0	\$92	5,172 gallons perpetual care average years 31-60 Taken from RMU-2 2012 LeachGenMode	
Leach Treat Syst. Capital Repl Cost	0	LS	\$17,642.00	\$0	\$0	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each (costs allocated to other 7 units at	DEC estimate of AWTS capital replacement costs @ 25 yrs
						<i>The Cost for capital replacement of AWTS is already provided in the post closure estimate for 7 other units that generate leachate</i>	
Laborer	12	hours	\$39.00	\$468	\$468	1 hrs/mon x 12 mon/year = 12 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	12	hours	\$38.00	\$456	\$456	1 hrs/mon x 12 mon/year = 12 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Primary Leachate VOC Samp & Analysis	2.1	sample	\$105.00	\$221	\$221	1 sump x 1.05 per sump x 2.0 event/yr = 2.1 samples	Avg. of three lab quotes
Primary Leachate Metals Samp & Analysis	2.1	sample	\$188.00	\$395	\$395	1 sump x 1.05 per sump x 2.0 event/yr = 2.1 samples	Avg. of three lab quotes
Primary Leachate PCBs Samp & Anaylsis	2.1	sample	\$133.33	\$280	\$280	1 sump x 1.05 per sump x 2.0 event/yr = 2.1 samples	Avg. of three lab quotes
Secondary Leachate VOC Samp & Analysis	2.1	sample	\$105.00	\$221	\$221	1 sump x 1.05 per sump x 2.0 event/yr = 2.1 samples	Avg. of three lab quotes
Secondary Leachate Metals Samp & Analysis	1.1	sample	\$188.00	\$207	\$207	1 sump x 1.05 per sump = 1.0 event/yr = 1.1 samples	Avg. of three lab quotes
Secondary Leachate PP Organics Samp & Analysis	1.1	sample	\$633.33	\$697	\$697	1 sump x 1.05 per sump = 1.0 event/yr = 1.1 samples	Avg. of three lab quotes
Electrical Costs - Pumps	384.6	KWH	\$0.086	\$33	\$33	343.7 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 384.6 KWH	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-150	0.2	pump	\$14,425.00	\$2,885	\$2,885	1 pump per 5 years = 0.2 pumps	30 hp pump, site experience
Replacement of Secondary Pump T-150	0.0	pump	\$14,425.00	\$0	\$0	1 pump per 5 years = 0.2 pumps	Pump not necessary in post closure
Replace Primary Sump Pumps	0.2	pump	\$1,382.00	\$276	\$276	1 pumps x 20.0% pu/yr = 0.2 pumps	1.5 hp submersible pump, site experience
Replace Secondary Sump Pumps	0.15	pump	\$850.00	\$128	\$128	1 pumps x 15.0% pu/yr = 0.15 pumps	4" subm pump, 0.5 hp, , site experience
Replacement of Pump Dischg Hose	0.35	hose	\$211.54	\$74	\$74	0.35 pumps x 1 per pump = 0.35	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	3.5	CF	\$12.45	\$44	\$44	0.35 pu/hos @ 10 CF/pump = 3.5 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	0.8	LF	\$53.25	\$43	\$43	160 LF @ 0.5% per year = 0.8 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	0.26	CF	\$12.45	\$3	\$3	0.8 LF @ 0.33 CF/LF = 0.26 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	5.24	LF	\$73.50	\$385	\$385	1047 LF @ 0.5% per year = 5.24 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	2.62	CF	\$12.45	\$33	\$33	5.24 LF @ 0.50 LF/drum = 2.62 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Pipe Cleaning - 8" diameter	700.8	LF	\$2.14	\$1,500	\$1,500	700.8 LF @ 1.0 events/yr = 700.8 LF	DEC 2004 rate * deflator (2004-2010)
Subt - Leachate Coll Syst Mgmt				\$8,810	\$8,438	<i>annual O&M costs plus capital replacement of treatment system, pumps, and piping</i>	
PCC-9.01.11 AWTS Operation						Shift operation of the AWTS for 12 months	no DEC estimate for this activity: DEC Estimate included in unit rate
Subt - AWTS Operation				\$0	\$0	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
						<i>The Cost for operation of AWTS is already provided in the post closure estimate for 7 other units that generate leachate</i>	
PCC-9.01.12 Site Waters Treatment							
Subt - Site Waters Treatment				\$0	\$0	<i>The Cost for treatment of of site waters is already provided in the post closure estimate for 7 other units</i>	Labor included in PCC-1.7a
PCC-9.01.13 Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
Subt - Batch Tank Qualification				\$0	\$0	<i>The Cost for tank qualifications is already provided in the post closure estimate for 7 other units</i>	Samples collected by lab technician
PCC-9.01.14 Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/evnt= 3 samples	sampling & analysis prior to pond discharge
Subt - Pond Sampling & Analysis				\$0	\$0	<i>The Cost for pond qualifications is already provided in the post closure estimate for 7 other units</i>	

NOTE: Sheet to be added.

PCC-9.01: RMU-2 (1-Cell)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.01.15 Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one pre-discharge qualification report	
Subt - S&A Cert'n & Report				\$0	\$0	<i>diver(s) to check discharge pipe; also engineer's pre-discharge qualification report</i>	
						<i>The Cost for pond qualifications report and diver inspections of outfall is already provided in the post closure estimate for 7 other units</i>	
PCC-9.01.16 Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
<i>FAC Pond 1/2 Inventory in Gallons</i>		<i>gals</i>	<i>n/a</i>			<i>45.8 total hours req'd to pump</i>	& site waters
						<i>transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft). The Cost for discharge to outfall is</i>	
Subtotal - Pump FAC Pond 1/2				\$0	\$0	<i>already provided in the post closure estimate for 7 other units</i>	
(Subt: Assemb PCC-9.01.10 thru 9.01.16)				\$8,810	\$8,438	<i>RMU-2 share of annual O&M and capital costs for leachate collection & treatment: provided in post closure cost estimate for 7 other units at facility</i>	
PCC-9.01.17 N/A							
Subt - N/A				\$0	\$0		
PCC-9.01.18 N/A							
Subt - N/A				\$0	\$0		
PCC-9.01.19 N/A							
Subt - N/A				\$0	\$0		
(Subt: Assemb PCC-9.01.17 thru 9.01.19)				\$0	\$0	RMU-2 share of annual leachate transport costs - n/a, as leachate pumped directly to the AWTS	
PCC-9.01.20 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
<i>Internal & External Inspections</i>						<i>16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr</i>	
Subt - Tank Assessments				\$0	\$0	<i>inspection of 16 tanks</i>	
						<i>The Cost for tank assessment is already provided in the post closure estimate for 7 other units</i>	
PCC-9.01.21 Tank Assessments						thirty (32) tanks requiring only external inspections once every five years by 1 PE	
<i>External Only Inspections</i>						<i>30 tanks @ 5 yr inspect = 6.0 tnks/yr @ 7 areas = 0.9 tnks/yr</i>	
Subt - Tank Assessments				\$0	\$0	<i>inspection of 32 tanks</i>	
						<i>The Cost for tank assessment is already provided in the post closure estimate for 7 other units</i>	
(Subt: Assemb PCC-9.01.20 thru 9.01.21)				\$0	\$0	RMU-2 share of annual tank assessment costs: post-closure & perpetual care frequency are equal	
PCC-9.01.22 Replace Mon Well Pump							
Replace Mon Well Pumps	0.23	pump	\$900.00	\$207	\$207	9 pumps @ 2.5% per year = 0.23 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.23	CF	\$12.45	\$3	\$3	0.23 pumps @ 1.0 CF/pump = 0.23 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.23	pad	\$131.50	\$30	\$30	9 pads @ 2.5% per year = 0.23 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	0.46	CF	\$12.45	\$6	\$6	0.23 pads @ 2.0 CF/pad = 0.46 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.23	each	\$371.63	\$85	\$85	9 covers @ 2.5% per year = 0.23 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.12	CF	\$12.45	\$1	\$1	0.23 covers @ 0.5 CF/cover = 0.12 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$409	\$409	<i>monitoring well pump maintenance and replacement</i>	
(Subt: Assemb PCC-9.01.22)				\$409	\$409	<i>RMU-2 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equal</i>	

NOTE: Sheet to be added.

PCC-9.01: RMU-2 (1-Cell)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.01.23 Drainage Ditch Repair						ditches estimated to be 10 feet in width	
<i>RMU-2 Drainage Ditches</i>						Perimeter Ditch + Drainage Tile System = 2,290 + 2,939 = 5,229 LF	drainage ditches specific to RMU-2 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	drainage ditches in non-specific areas of facility
<i>RMU-2 Downchutes</i>						685 LF 26" pipe 266 LF 6" pipe	
Drainage Ditch Repair	0.012	acre	\$5,698.00	\$68	\$68	5,229 LF x 10 ft/LF = 1.2 acres @ 1.0% per year = 0.012 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Downchute Pipe Cleaning 26"	34.25	LF	\$2.14	\$73	\$73	685 LF x 5.0% per year = 34.25 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Downchute Pipe Cleaning 6"	13.3	LF	\$2.14	\$28	\$28	266 LF x 5.0% per year = 13.3 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Subt - Drainage Ditch Repair				\$170	\$170	stormwater drainage ditch repair	
						The cost of repair of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.01.24 Drainage Ditch Cleaning						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
<i>RMU-2 Drainage Ditches</i>						5,229 LF	drainage ditches specific to RMU-2 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	drainage ditches in non-specific areas of facility
Drainage Ditch Sediment Cleaning	6.45	CY	\$2.38	\$15	\$15	5,229 LF x 10.0 ft/LF x 0.333 feet (4")/27 = 645.5 CY @ 1%/yr = 6.45 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	2.2	miles	\$3.25	\$7	\$7	8.7 tons @ 20 tons/load = 0.435 loads @ 5 miles per load = 2.2 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	8.7	ton	\$35.00	\$305	\$305	6.45 CY @ 1.35 ton/CY = 8.7 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$327	\$327	stormwater drainage ditch cleaning	
						The cost of cleaning of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.01.25 Basin Cleaning						sediment estimated to be 4 inches deep.	
<i>Basin No. 1</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin No. 2</i>						150000 SF div by 8 units = 18750 SF	
Subt--Basin Cleaning				\$0	\$0	facility stormwater basin cleaning	
						The cost of cleaning of facility basins is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.01.26 Culvert Maint/Replace						average culvert = 40 feet in length and 18 inches in diameter; replace one 40-foot sections/year	
<i>RMU-2 Culverts</i>						1 culverts x 40 feet long = 40 LF	culverts specific to RMU-2 unit
<i>Facility-wide Culverts</i>						20 culverts x 40 feet long = 800 LF div by 8 units = 0 LF for RMU-2	culverts in non-specific areas of facility
Culvert Cleaning - 18" diameter avg	40	LF	\$2.14	\$86	\$86	40 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 18" diam avg (RMU-2)	40	LF	\$11.61	\$464	\$464	40.0 LF @ 1 culvert/yr = 40 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	0	LF	\$22.35	\$0	\$0	40.0 LF @ 1.00 culvert/yr = 40 LF 0 LF for RMU-2	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	30	CY	\$2.96	\$89	\$89	40.0 LF x 0.75 CY/LF = 30 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	30	CY	\$3.86	\$116	\$116	30 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$755	\$755	culvert maintenance and replacement	
						The cost of cleaning of maintaining facility-wide drainage is provided in post-closure estimate for 8 other units at the facility.	
(Subt: Assemb PCC-9.01.23 thru 9.01.26)				\$1,252	\$1,252	RMU-2 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal	

NOTE: Sheet to be added.

PCC-9.01: RMU-2 (1-Cell)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.01.27 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
RMU-2 Gravel Roads						2290 LF x 15 feet wide/9 SF/SY = 3,817 SY @ 2% per year = 76.3 SY	
Facility-wide Asphalt Roads						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 0 SF for RMU-2	asphalt roads in non-specific areas of facility
RMU-2 Gravel Road Repair	76.3	SY	\$3.12	\$238	\$238	16.5 SY	DEC 2004 rate * deflator (2004-2010)
Facility-wide Asphalt Roads	0	SF	\$1.35	\$0	\$0	4,224.0 SF div by 8 units = 528.0 SF 0 SF for RMU-2	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$238	\$238	road maintenance and replacement	
						The cost of cleaning of maintaining facility-wide roads is provided in post-closure estimate for 8 other units at the facility.	
(Subt: Assemb PCC-9.01.27)				\$238	\$238	RMU-2 road maintenance & replacement	

Total Non-Super hours 89.4

PCC-9.01.28 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	8.4	days	\$0.00	\$0	\$0	89.4 hours @ 8 hr/day = 11.2 days @ 75% "D" days = 8.4 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	1.7	days	\$9.00	\$15	\$15	89.4 hours @ 8 hr/day = 11.2 days @ 15% "C" days = 1.7 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	1.1	days	\$25.00	\$28	\$28	89.4 hours @ 8 hr/day = 11.2 days @ 10% "C" days = 1.1 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	2.2	hours	\$75.00	\$165	\$165	89.4 hours @ 2.5% hr/hr = 2.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$208	\$208		
PCC-9.01.29 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in Post-Closure cost estimates for other 7-units at the facility that generate leachate	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
(Subt: Assemb PCC-9.01.28 thru 9.01.29)				\$208	\$208	supervision, health & safety, and certification	

PCC 9.01 (1-Cell): RMU-2 Direct Cost				\$23,274	\$19,404		
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NOTE: Sheet to be added.

PCC-9.02: RMU-2 (2-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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RMU-2 Parameters - Area 13.1 acres = 6,404 SY = 570,636 SF = 570.6 MSF 31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs

RMU-2 Parameters - Fencing 0 LF = portion of perimeter fencing for RMU-2

Perimeter Ditch 3,700 linear feet (710+560)+585+560+300+710+275 = 3,700

Drainage Tile System 5,580 linear feet 13.1 acres * 426 LF/acre = 5,580 LF

MSE Wall 2095 linear feet

PCC-9.02.1 Annual Visual Inspections						make visual inspections and log results; two persons required		
<i>Post-Closure</i>								
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew =	6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew =	6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0	hours	\$38.00	\$0	\$0	3 hrs/insp x 2.0 insp/year x 2 per crew/	8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x 1.8 insp/year x 2 per crew =	7.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0	hours	\$38.00	\$0	\$0	included above		this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	10	hours	\$130.00	\$1,300	\$0	10 hrs/insp x 1.0 insp/year x 1 per crew =	10.0 hours	
Subtotal - Annual Inspections				\$2,090	\$0	RMU-2 post-closure inspections		
<i>Perpetual Care</i>						Perpetual Care Frequencies according to Page 11 of Site-Wide and RMU-2 Post-Closure Plans		
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew =	4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew =	4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0.0	hours	\$38.00	\$0	\$0	4 hrs/insp x 1.0 insp/year x 2 per crew/	8 facility units = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x 1.04 insp/year x 2 per crew =	4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above		this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	10	hours	\$130.00	\$0	\$1,300	10 hrs/insp x 1.0 insp/year x 1 per crew =	10.0 hours	
Subtotal - Annual Inspections Perp-Care				\$0	\$1,764	RMU-2 perpetual care inspections		
(Subt: Assemb PCC-9.02.1)				\$2,090	\$1,764	RMU-2 visual inspections. The Cost for facility fence inspection is already provided in the post closure estimate for 8 other units		

PCC-9.02.2 Perimeter Fence Maint.						one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected		
Subt - Perimeter Fence Maint.				\$0	\$0	The Cost for facility fence repair is already provided in the post closure estimate for 8 other units		
(Subt: Assemb PCC-9.02.2)				\$0	\$0			

PCC-9.02.3 Maint. Benchmarks/Surv						Annual inspection only		
Maint of Benchmarks & Surveying	0	acres	\$0.00	\$0	\$0	Included in PCC-9.02.1		
Subt - Benchmarks & Surveying				\$0	\$0			
(Subt: Assemb PCC-9.02.3)				\$0	\$0			

NOTE: Sheet to be added.

PCC-9.02: RMU-2 (2-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.02.4 Groundwater Monitoring						sampling crew composed of two technicians; 21 monitoring wells	
<i>Monit'g Events & Samples/Event</i>						0.0 quart'ly + 40 semi-ann + 1.0 b-ann'l x 1.05 each = 42.5 samp	
<i>Post-Closure</i>							
Technician	85	hours	\$38.00	\$3,230	\$0	42.5 samps @ 1.0 hrs/samp x 2 per crew = 85 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	42.5	samp	\$25.00	\$1,063	\$0	42.5 samps	bottles, shipping supplies
VOCs	42.5	samp	\$105.00	\$4,463	\$0	42.5 samps	Average of three quotes
Subt - GW Monitoring				\$8,755	\$0	post closure groundwater monitoring	
<i>Monit'g Events & Samples/Event</i>						21 wells @ sample/5 years 1.05 each = 4.4 samp/yr	
<i>Perpetual Care</i>						Perpetual care groundwater monitoring once every five years	
Technician	8.8	hours	\$38.00	\$0	\$334	4.4 samps @ 1.0 hrs/samp x 2 per crew = 8.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	4.4	samp	\$25.00	\$0	\$110	4.4 samples	bottles, shipping supplies
VOCs	4.4	samp	\$105.00	\$0	\$462	4.4 samples	Average of three quotes
Subt - GW Monitoring				\$0	\$906	perpetual care groundwater monitoring	
PCC-9.02.5 Outfalls 002,003,004 SPDES Mon						production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure	
<i>Weekly Sampling Events</i>						12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples	
Subt - SPDES Outfall Sampling & Analysis						\$0 \$0 The Cost for facility stormwater discharge is already provided in the post closure estimate for 8 other units	
PCC-9.02.6 Discharge Monitoring Report						Monthly Discharge Monitoring Reports	
Subt - Discharge Monitoring Report						\$0 \$0 submittal of SPDES Permit required Discharge Monitoring Report (DMR)	
(Subt: Assemb PCC-9.02.4 thru 9.02.6)						\$8,755 \$906 RMU-2 groundwater & stormwater monitoring activities	

PCC-9.02.7 Landfill Cover Maint.							
Replacement of Cover	0.0655	acre	\$20,973.33	\$1,374	\$1,374	13.1 acre @ 0.5% per year = 0.0655 acres/yr	unit price based upon vegetation, topsoil, from RMU-1, Assemblies 14.17 thru 14.18
Subt - Landfill Cover Maint.						\$1,374 \$1,374 RMU-2 upper cap maintenance and replacement	
PCC-9.02.8 Mowing/Grooming							
Mowing	570.6	MSF	\$3.21	\$1,833	\$1,833	570.6 MSF @ 1.0 per year = 570.6 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	114.1	MSF	\$3.82	\$436	\$436	570.6 MSF @ 1.0 per 5.0 years = 114.1 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming						\$2,269 \$2,269 RMU-2 mowing and fertilizing	
(Subt: Assemb PCC-9.02.7 thru 9.02.8)						\$3,643 \$3,643 RMU-2 cap maintenance activities: post-closure & perpetual care frequency are equal	

PCC-9.02.9 MSE Wall Maint.						\$3.03 based on 6,600 LF for 6-cell scenario.	
MSE Wall Maint.	2095	LF	\$3.03	\$6,348	\$6,348	2,095 LF of MSE wall	WM/Golder Guidance Document (12-1-10)
Subt - MSE Wall Maint.						\$6,348 \$6,348 RMU-2 MSE Wall maintenance	
(Subt: Assemb PCC-9.02.9)						\$6,348 \$6,348	

NOTE: Sheet to be added.

PCC-9.02: RMU-2 (2-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.02.10 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment	49454	gal	\$0.0178	\$880	\$0	49,454 gals estimated annual leachate volume based average prediction 0-30 years post closure	unit price derived from AWTS O&M model
Leachate Treatment - Perpetual Care	9819	gal	\$0.0178	\$0	\$175	9,819 gals perpetual care average years 31-60	Taken from RMU-2 2012 LeachGenMode
Leach Treat Syst. Capital Repl Cost	0	LS	\$17,642.00	\$0	\$0	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each (costs allocated to other 7 units at t	DEC estimate of AWTS capital replacement costs @ 25 yrs
						<i>The Cost for capital replacement of AWTS is already provided in the post closure estimate for 7 other units that generate leachate</i>	
Laborer	12	hours	\$39.00	\$468	\$468	1 hrs/mon x 12 mon/year = 12 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	12	hours	\$38.00	\$456	\$456	1 hrs/mon x 12 mon/year = 12 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Primary Leachate VOC Samp & Analysis	4.2	sample	\$105.00	\$441	\$441	2 sumps x 1.05 per sump x 2.0 event/yr = 4.2 samples	Avg. of three lab quotes
Primary Leachate Metals Samp & Analysis	4.2	sample	\$188.00	\$790	\$790	2 sumps x 1.05 per sump x 2.0 event/yr = 4.2 samples	Avg. of three lab quotes
Primary Leachate PCBs Samp & Analysis	4.2	sample	\$133.33	\$560	\$560	2 sumps x 1.05 per sump x 2.0 event/yr = 4.2 samples	Avg. of three lab quotes
Secondary Leachate VOC Samp & Analysis	4.2	sample	\$105.00	\$441	\$441	2 sumps x 1.05 per sump x 2.0 event/yr = 4.2 samples	Avg. of three lab quotes
Secondary Leachate Metals Samp & Analysis	2.1	sample	\$188.00	\$395	\$395	2 sumps x 1.05 per sump = 1.0 event/yr = 2.1 samples	Avg. of three lab quotes
Secondary Leachate PP Organics Samp & Analysis	2.1	sample	\$633.33	\$1,330	\$1,330	2 sumps x 1.05 per sump = 1.0 event/yr = 2.1 samples	Avg. of three lab quotes
Electrical Costs - Pumps	384.6	KWH	\$0.086	\$33	\$33	343.7 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 384.6 KWH	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-150	0.2	pump	\$14,425.00	\$2,885	\$2,885	1 pump per 5 years = 0.2 pumps	30 hp pump, site experience
Replacement of Secondary Pump T-150	0.0	pump	\$14,425.00	\$0	\$0	1 pump per 5 years = 0.2 pumps	Pump not necessary in post closure
Replace Primary Sump Pumps	0.4	pump	\$1,382.00	\$553	\$553	2 pumps x 20.0% pu/yr = 0.4 pumps	1.5 hp submersible pump, site experience
Replace Secondary Sump Pumps	0.3	pump	\$850.00	\$255	\$255	2 pumps x 15.0% pu/yr = 0.3 pumps	4" subm pump, 0.5 hp, , site experience
Replacement of Pump Dischg Hose	0.7	hose	\$211.54	\$148	\$148	0.7 pumps x 1 per pump = 0.7	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	7	CF	\$12.45	\$87	\$87	0.7 pu/hos @ 10 CF/pump = 7 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	1.6	LF	\$53.25	\$85	\$85	320 LF @ 0.5% per year = 1.6 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	0.53	CF	\$12.45	\$7	\$7	1.6 LF @ 0.33 CF/LF = 0.53 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	10.5	LF	\$73.50	\$772	\$772	2,094 LF @ 0.5% per year = 10.5 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	5.3	CF	\$12.45	\$66	\$66	10.5 LF @ 0.50 LF/drum = 5.3 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Pipe Cleaning - 8" diameter	1402	LF	\$2.14	\$3,000	\$3,000	1,402 LF @ 1.0 events/yr = 1,402 LF	DEC 2004 rate * deflator (2004-2010)
Subt - Leachate Coll Syst Mgmt				\$13,652	\$12,946	<i>annual O&M costs plus capital replacement of treatment system, pumps, and piping</i>	
PCC-9.02.11 AWTS Operation						Shift operation of the AWTS for 12 months	no DEC estimate for this activity: DEC Estimate included in unit rate
Subt - AWTS Operation				\$0	\$0	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
						<i>The Cost for operation of AWTS is already provided in the post closure estimate for 7 other units that generate leachate</i>	
PCC-9.02.12 Site Waters Treatment							
Subt - Site Waters Treatment				\$0	\$0	<i>The Cost for treatment of of site waters is already provided in the post closure estimate for 7 other units</i>	Labor included in PCC-1.7a
PCC-9.02.13 Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
Subt - Batch Tank Qualification				\$0	\$0	<i>The Cost for tank qualifications is already provided in the post closure estimate for 7 other units</i>	Samples collected by lab technician
PCC-9.02.14 Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/evnt= 3 samples	sampling & analysis prior to pond discharge
Subt - Pond Sampling & Analysis				\$0	\$0	<i>The Cost for pond qualifications is already provided in the post closure estimate for 7 other units</i>	

NOTE: Sheet to be added.

PCC-9.02: RMU-2 (2-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.02.15 Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischarge qualification report	
Subt - S&A Cert'n & Report				\$0	\$0	diver(s) to check discharge pipe; also engineer's predischarge qualification report	
						The Cost for pond qualifications report and diver inspections of outfall is already provided in the post closure estimate for 7 other units	
PCC-9.02.16 Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
FAC Pond 1/2 Inventory in Gallons		gals	n/a			45.8 total hours req'd to pump	& site waters
						transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft). The Cost for discharge to outfall is already provided in the post closure estimate for 7 other units	
Subtotal - Pump FAC Pond 1/2				\$0	\$0		
(Subt: Assemb PCC-9.02.10 thru 9.02.16)				\$13,652	\$12,946	RMU-2 share of annual O&M and capital costs for leachate collection & treatment: provided in post closure cost estimate for 7 other units at facility	

PCC-9.02.17 N/A							
Subt - N/A				\$0	\$0		
PCC-9.02.18 N/A							
Subt - N/A				\$0	\$0		
PCC-9.02.19 N/A							
Subt - N/A				\$0	\$0		
(Subt: Assemb PCC-9.02.17 thru 9.02.19)				\$0	\$0	RMU-2 share of annual leachate transport costs - n/a, as leachate pumped directly to the AWTS	

PCC-9.02.20 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
Internal & External Inspections						16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr	
Subt - Tank Assessments				\$0	\$0	inspection of 16 tanks	
						The Cost for tank assessment is already provided in the post closure estimate for 7 other units	
PCC-9.02.21 Tank Assessments						thirty (32) tanks requiring only external inspections once every five years by 1 PE	
External Only Inspections						30 tanks @ 5 yr inspect = 6.0 tnks/yr @ 7 areas = 0.9 tnks/yr	
Subt - Tank Assessments				\$0	\$0	inspection of 32 tanks	
						The Cost for tank assessment is already provided in the post closure estimate for 7 other units	
(Subt: Assemb PCC-9.02.20 thru 9.02.21)				\$0	\$0	RMU-2 share of annual tank assessment costs: post-closure & perpetual care frequency are equal	

PCC-9.02.22 Replace Mon Well Pump							
Replace Mon Well Pumps	0.53	pump	\$900.00	\$477	\$477	21 pumps @ 2.5% per year = 0.53 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.53	CF	\$12.45	\$7	\$7	0.53 pumps @ 1.0 CF/pump = 0.53 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.53	pad	\$131.50	\$70	\$70	21 pads @ 2.5% per year = 0.53 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	1.1	CF	\$12.45	\$14	\$14	0.53 pads @ 2.0 CF/pad = 1.1 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.53	each	\$371.63	\$197	\$197	21 covers @ 2.5% per year = 0.53 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.27	CF	\$12.45	\$3	\$3	0.53 covers @ 0.5 CF/cover = 0.27 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$843	\$843	monitoring well pump maintenance and replacement	
(Subt: Assemb PCC-9.02.22)				\$843	\$843	RMU-2 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equal	

NOTE: Sheet to be added.

PCC-9.02: RMU-2 (2-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.02.23 Drainage Ditch Repair						ditches estimated to be 10 feet in width	
RMU-2 Drainage Ditches						Perimeter Ditch + Drainage Tile System = 3,700 + 5,580 = 9,280 LF	drainage ditches specific to RMU-2 unit
Facility-wide Drainage Ditches						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	drainage ditches in non-specific areas of facility
RMU-2 Downchutes						685 LF 26" pipe 266 LF 6" pipe	
Drainage Ditch Repair	0.021	acre	\$5,698.00	\$120	\$120	9,280 LF x 10 ft/LF = 2.13 acres @ 1.0% per year = 0.021 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Downchute Pipe Cleaning 26"	34.25	LF	\$2.14	\$73	\$73	685 LF x 5.0% per year = 34.25 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Downchute Pipe Cleaning 6"	13.3	LF	\$2.14	\$28	\$28	266 LF x 5.0% per year = 13.3 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Subt - Drainage Ditch Repair				\$221	\$221	stormwater drainage ditch repair	
						The cost of repair of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.02.24 Drainage Ditch Cleaning						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
RMU-2 Drainage Ditches						9,280 LF	drainage ditches specific to RMU-2 unit
Facility-wide Drainage Ditches						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	drainage ditches in non-specific areas of facility
Drainage Ditch Sediment Cleaning	8.24	CY	\$2.38	\$20	\$20	9,280 LF x 10.0 ft/LF x 0.333 feet (4")/27 = 1,145 CY @ 1%/yr = 11.46 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	3.9	miles	\$3.25	\$13	\$13	15.5 tons @ 20 tons/load = 0.77 loads @ 5 miles per load = 3.9 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	15.5	ton	\$35.00	\$543	\$543	11.46 CY @ 1.35 ton/CY = 15.5 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$575	\$575	stormwater drainage ditch cleaning	
						The cost of cleaning of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.02.25 Basin Cleaning						sediment estimated to be 4 inches deep.	
Basin No. 1						140625 SF div by 8 units = 17578 SF	
Basin No. 2						150000 SF div by 8 units = 18750 SF	
Subt--Basin Cleaning				\$0	\$0	facility stormwater basin cleaning	
						The cost of cleaning of facility basins is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.02.26 Culvert Maint/Replace						average culvert = 40 feet in length and 18 inches in diameter; replace one 40-foot sections/year	
RMU-2 Culverts						2 culverts x 40 feet long = 80 LF	culverts specific to RMU-2 unit
Facility-wide Culverts						20 culverts x 40 feet long = 800 LF div by 8 units = 0 LF for RMU-2	culverts in non-specific areas of facility
Culvert Cleaning - 18" diameter avg	80	LF	\$2.14	\$171	\$171	80 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 18" diam avg (RMU-2)	40	LF	\$11.61	\$464	\$464	80 LF @ 1 culvert/yr = 40 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	0	LF	\$22.35	\$0	\$0	40.0 LF @ 1.00 culvert/yr = 40 LF 0 LF for RMU-2	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	30	CY	\$2.96	\$89	\$89	40.0 LF x 0.75 CY/LF = 30 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	30	CY	\$3.86	\$116	\$116	30 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$840	\$840	culvert maintenance and replacement	
						The cost of cleaning of maintaining facility-wide drainage is provided in post-closure estimate for 8 other units at the facility.	
(Subt: Assemb PCC-9.02.23 thru 9.02.26)				\$1,636	\$1,636	RMU-2 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal	

NOTE: Sheet to be added.

PCC-9.02: RMU-2 (2-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.02.27 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
RMU-2 Gravel Roads						3700 LF x 15 feet wide/ 9 SF/SY = 6167 SY @ 2% per year = 123.3 SY	
Facility-wide Asphalt Roads						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 0 SF for RMU-2	asphalt roads in non-specific areas of facility
RMU-2 Gravel Road Repair	123.3	SY	\$3.12	\$385	\$385	123.3 SY	DEC 2004 rate * deflator (2004-2010)
Facility-wide Asphalt Roads	0	SF	\$1.35	\$0	\$0	4,224.0 SF div by 8 units = 528.0 SF 0 SF for RMU-2	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$385	\$385	road maintenance and replacement	
						The cost of cleaning of maintaining facility-wide roads is provided in post-closure estimate for 8 other units at the facility.	
(Subt: Assemb PCC-9.02.27)				\$385	\$385	RMU-2 road maintenance & replacement	

Total Non-Super hours 141.8

PCC-9.02.28 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	13.1	days	\$0.00	\$0	\$0	141.8 hours @ 8 hr/day = 17.7 days @ 75% "D" days = 13.3 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	2.6	days	\$9.00	\$23	\$23	141.8 hours @ 8 hr/day = 17.7 days @ 15% "C" days = 2.6 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	1.8	days	\$25.00	\$45	\$45	141.8 hours @ 8 hr/day = 17.7 days @ 10% "C" days = 1.8 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	3.5	hours	\$75.00	\$263	\$263	141.8 hours @ 2.5% hr/hr = 3.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$331	\$331		
PCC-9.02.29 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in Post-Closure cost estimates for other 7-units at the facility that generate leachate	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
(Subt: Assemb PCC-9.02.28 thru 9.02.29)				\$331	\$331	supervision, health & safety, and certification	

PCC-9.02 (2-Cells): RMU-2 Direct Cost				\$37,683	\$28,802		
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NOTE: Sheet to be added.

PCC-9.03: RMU-2 (3-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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RMU-2 Parameters - Area	19.5 acres =	94,380 SY =	849,420 SF =	849.4 MSF	31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs
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RMU-2 Parameters - Fencing	0 LF = portion of perimeter fencing for RMU-2
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Perimeter Ditch	4,700 linear feet	560+585+670+500+600+775+710+300 = 4,700
Drainage Tile System	4,405 linear feet	19.5 acres * 426 LF/acre = 8,307 LF
MSE Wall	3,815 linear feet	

PCC-9.03.1 Annual Visual Inspections	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
						make visual inspections and log results; two persons required	
<i>Post-Closure</i>							
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0	hours	\$38.00	\$0	\$0	3 hrs/insp x 2.0 insp/year x 2 per crew/ 8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x 1.8 insp/year x 2 per crew = 7.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0	hours	\$38.00	\$0	\$0	included above	this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	12	hours	\$130.00	\$1,560	\$0	12 hrs/insp x 1.0 insp/year x 1 per crew = 12.0 hours	
Subtotal - Annual Inspections				\$2,350	\$0	RMU-2 post-closure inspections	
<i>Perpetual Care</i>							
Perpetual Care Frequencies according to Page 11 of Site-Wide and RMU-2 Post-Closure Plans							
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0.0	hours	\$38.00	\$0	\$0	4 hrs/insp x 1.0 insp/year x 2 per crew/ 8 facility units = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x 1.04 insp/year x 2 per crew = 4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above	this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	12	hours	\$130.00	\$0	\$1,560	12 hrs/insp x 1.0 insp/year x 1 per crew = 12.0 hours	
Subtotal - Annual Inspections Perp-Care				\$0	\$2,024	RMU-2 perpetual care inspections	
(Subt: Assemb PCC-9.03.1)				\$2,350	\$2,024	RMU-2 visual inspections. The Cost for facility fence inspection is already provided in the post closure estimate for 8 other units	

PCC-9.03.2 Perimeter Fence Maint.	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
						one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected	
Subt - Perimeter Fence Maint.				\$0	\$0	<i>The Cost for facility fence repair is already provided in the post closure estimate for 8 other units</i>	
(Subt: Assemb PCC-9.03.2)				\$0	\$0		

PCC-9.03.3 Maint. Benchmarks/Surv	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
						Annual inspection only	
Maint of Benchmarks & Surveying	0	acres	\$0.00	\$0	\$0	Included in PCC-9.03.1	
Subt - Benchmarks & Surveying				\$0	\$0		
(Subt: Assemb PCC-9.03.3)				\$0	\$0		

NOTE: Sheet to be added.

PCC-9.03: RMU-2 (3-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.03.4 Groundwater Monitoring						<i>sampling crew composed of two technicians; 21 monitoring wells</i>	
<i>Monit'g Events & Samples/Event</i>						<i>0.0 quart'ly + 40 semi-ann + 1.0 b-ann'l x 1.05 each = 42.5 samp</i>	<i>includes 5% QA sampling</i>
<i>Post-Closure</i>							
Technician	85	hours	\$38.00	\$3,230	\$0	42.5 samps @ 1.0 hrs/samp x 2 per crew = 85 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	42.5	samp	\$25.00	\$1,063	\$0	42.5 samps	bottles, shipping supplies
VOCs	42.5	samp	\$105.00	\$4,463	\$0	42.5 samps	Average of three quotes
Subt - GW Monitoring				\$8,755	\$0	<i>post closure groundwater monitoring</i>	
<i>Monit'g Events & Samples/Event</i>						<i>21 wells @ sample/5 years 1.05 each = 4.4 samp/yr</i>	
<i>Perpetual Care</i>						<i>Perpetual care groundwater monitoring once every five years</i>	
Technician	8.8	hours	\$38.00	\$0	\$334	4.4 samps @ 1.0 hrs/samp x 2 per crew = 8.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	4.4	samp	\$25.00	\$0	\$110	4.4 samples	bottles, shipping supplies
VOCs	4.4	samp	\$105.00	\$0	\$462	4.4 samples	Average of three quotes
Subt - GW Monitoring				\$0	\$906	<i>perpetual care groundwater monitoring</i>	
PCC-9.03.5 Outfalls 002,003,004 SPDES Mon						<i>production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure</i>	
<i>Weekly Sampling Events</i>						<i>12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples</i>	<i>sampling & analysis according to SPDES Permit</i>
Subt - SPDES Outfall Sampling & Analysis				\$0	\$0	<i>The Cost for facility stormwater discharge is already provided in the post closure estimate for 8 other units</i>	
PCC-9.03.6 Discharge Monitoring Report						<i>Monthly Discharge Monitoring Reports</i>	
Subt - Discharge Monitoring Report				\$0	\$0	<i>submittal of SPDES Permit required Discharge Monitoring Report (DMR)</i>	
						<i>The Cost for facility stormwater discharge is already provided in the post closure estimate for 8 other units</i>	
(Subt: Assemb PCC-9.03.4 thru 9.03.6)				\$8,755	\$906	<i>RMU-2 groundwater & stormwater monitoring activities</i>	

PCC-9.03.7 Landfill Cover Maint.							
Replacement of Cover	0.0975	acre	\$20,973.33	\$2,045	\$2,045	19.5 acre @ 0.5% per year = 0.0975 acres/yr	unit price based upon vegetation, topsoil, from RMU-1, Assemblies 14.17 thru 14.18
Subt - Landfill Cover Maint.				\$2,045	\$2,045	<i>RMU-2 upper cap maintenance and replacement</i>	
PCC-9.03.8 Mowing/Grooming							
Mowing	849.4	MSF	\$3.21	\$2,729	\$2,729	849.4 MSF @ 1.0 per year = 849.4 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	169.9	MSF	\$3.82	\$649	\$649	849.4 MSF @ 1.0 per 5.0 years = 169.9 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming				\$3,378	\$3,378	<i>RMU-2 mowing and fertilizing</i>	
(Subt: Assemb PCC-9.03.7 thru 9.03.8)				\$5,423	\$5,423	<i>RMU-2 cap maintenance activities: post-closure & perpetual care frequency are equal</i>	

PCC-9.03.9 MSE Wall Maint.						\$3.03 based on 6,600 LF for 6-cell scenario.	
MSE Wall Maint.	3815	LF	\$3.03	\$11,559	\$11,559	3,815 LF of MSE wall	WM/Golder Guidance Document (12-1-10)
Subt - MSE Wall Maint.				\$11,559	\$11,559	<i>RMU-2 MSE Wall maintenance</i>	
(Subt: Assemb PCC-9.03.9)				\$11,559	\$11,559		

NOTE: Sheet to be added.

PCC-9.03: RMU-2 (3-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.03.10 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment	73615	gal	\$0.0178	\$1,310	\$0	73,615 gals estimated annual leachate volume based average prediction 0-30 years post closure	unit price derived from AWTS O&M model
Leachate Treatment - Perpetual Care	14617	gal	\$0.0178	\$0	\$260	14,617 perpetual care average years 31-60	Taken from RMU-2 2012 LeachGenMode
Leach Treat Syst. Capital Repl Cost	0	LS	\$17,642.00	\$0	\$0	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each (costs allocated to other 7 units at	DEC estimate of AWTS capital replacement costs @ 25 yrs
						<i>The Cost for capital replacement of AWTS is already provided in the post closure estimate for 7 other units that generate leachate</i>	
Laborer	24	hours	\$39.00	\$936	\$936	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	24	hours	\$38.00	\$912	\$912	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Primary Leachate VOC Samp & Analysis	6.3	sample	\$105.00	\$662	\$662	3 sumps x 1.05 per sump x 2.0 event/yr = 6.3 samples	Avg. of three lab quotes
Primary Leachate Metals Samp & Analysis	6.3	sample	\$188.00	\$1,184	\$1,184	3 sumps x 1.05 per sump x 2.0 event/yr = 6.3 samples	Avg. of three lab quotes
Primary Leachate PCBs Samp & Analysis	6.3	sample	\$133.33	\$840	\$840	3 sumps x 1.05 per sump x 2.0 event/yr = 6.3 samples	Avg. of three lab quotes
Secondary Leachate VOC Samp & Analysis	6.3	sample	\$105.00	\$662	\$662	3 sumps x 1.05 per sump x 2.0 event/yr = 6.3 samples	Avg. of three lab quotes
Secondary Leachate Metals Samp & Analysis	3.2	sample	\$188.00	\$602	\$602	3 sumps x 1.05 per sump = 1.0 event/yr = 3.2 samples	Avg. of three lab quotes
Secondary Leachate PP Organics Samp & Analysis	3.2	sample	\$633.33	\$2,027	\$2,027	3 sumps x 1.05 per sump = 1.0 event/yr = 3.2 samples	Avg. of three lab quotes
Electrical Costs - Pumps	384.6	KWH	\$0.086	\$33	\$33	343.7 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 384.6 KWH	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-150	0.2	pump	\$14,425.00	\$2,885	\$2,885	1 pump per 5 years = 0.2 pumps	30 hp pump, site experience
Replacement of Secondary Pump T-150	0.0	pump	\$14,425.00	\$0	\$0	1 pump per 5 years = 0.2 pumps	Pump not necessary in post closure
Replace Primary Sump Pumps	0.6	pump	\$1,382.00	\$829	\$829	3 pumps x 20.0% pu/yr = 0.6 pumps	1.5 hp submersible pump, site experience
Replace Secondary Sump Pumps	0.45	pump	\$850.00	\$383	\$383	3 pumps x 15.0% pu/yr = 0.45 pumps	4" subm pump, 0.5 hp, , site experience
Replacement of Pump Dischg Hose	1.1	hose	\$211.54	\$233	\$233	1.1 pumps x 1 per pump = 1.1	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	11	CF	\$12.45	\$137	\$137	1.1 pu/hos @ 10 CF/pump = 11 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	2.4	LF	\$53.25	\$128	\$128	480 LF @ 0.5% per year = 2.4 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	0.8	CF	\$12.45	\$10	\$10	2.4 LF @ 0.33 CF/LF = 0.8 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	15.7	LF	\$73.50	\$1,154	\$1,154	3,140 LF @ 0.5% per year = 15.7 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	7.9	CF	\$12.45	\$98	\$98	15.7 LF @ 0.50 LF/drum = 7.9 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Pipe Cleaning - 8" diameter	2103	LF	\$2.14	\$4,500	\$4,500	2,103 LF @ 1.0 events/yr = 2,103 LF	DEC 2004 rate * deflator (2004-2010)
Subt - Leachate Coll Syst Mgmt				\$19,524	\$18,474	<i>annual O&M costs plus capital replacement of treatment system, pumps, and piping</i>	
PCC-9.03.11 AWTS Operation						Shift operation of the AWTS for 12 months	no DEC estimate for this activity: DEC Estimate included in unit rate
Subt - AWTS Operation				\$0	\$0	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
						<i>The Cost for operation of AWTS is already provided in the post closure estimate for 7 other units that generate leachate</i>	
PCC-9.03.12 Site Waters Treatment							
Subt - Site Waters Treatment				\$0	\$0	<i>The Cost for treatment of of site waters is already provided in the post closure estimate for 7 other units</i>	Labor included in PCC-1.7a
PCC-9.03.13 Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
Subt - Batch Tank Qualification				\$0	\$0	<i>The Cost for tank qualifications is already provided in the post closure estimate for 7 other units</i>	Samples collected by lab technician
PCC-9.03.14 Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/evnt= 3 samples	sampling & analysis prior to pond discharge
Subt - Pond Sampling & Analysis				\$0	\$0	<i>The Cost for pond qualifications is already provided in the post closure estimate for 7 other units</i>	

NOTE: Sheet to be added.

PCC-9.03: RMU-2 (3-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.03.15 Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischarge qualification report	
Subt - S&A Cert'n & Report				\$0	\$0	<i>diver(s) to check discharge pipe; also engineer's predischarge qualification report</i>	
						<i>The Cost for pond qualifications report and diver inspections of outfall is already provided in the post closure estimate for 7 other units</i>	
PCC-9.03.16 Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
<i>FAC Pond 1/2 Inventory in Gallons</i>		<i>gals</i>	<i>n/a</i>			<i>45.8 total hours req'd to pump</i>	& site waters
Subtotal - Pump FAC Pond 1/2				\$0	\$0	<i>transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft). The Cost for discharge to outfall is already provided in the post closure estimate for 7 other units</i>	
(Subt: Assemb PCC-9.03.10 thru 9.03.16)				\$19,524	\$18,474	<i>RMU-2 share of annual O&M and capital costs for leachate collection & treatment: provided in post closure cost estimate for 7 other units at facility</i>	
PCC-9.03.17 N/A							
Subt - N/A				\$0	\$0		
PCC-9.03.18 N/A							
Subt - N/A				\$0	\$0		
PCC-9.03.19 N/A							
Subt - N/A				\$0	\$0		
(Subt: Assemb PCC-9.03.17 thru 9.03.19)				\$0	\$0	<i>RMU-2 share of annual leachate transport costs - n/a, as leachate pumped directly to the AWTS</i>	
PCC-9.03.20 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
<i>Internal & External Inspections</i>						<i>16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr</i>	
Subt - Tank Assessments				\$0	\$0	<i>inspection of 16 tanks</i>	
						<i>The Cost for tank assessment is already provided in the post closure estimate for 7 other units</i>	
PCC-9.03.21 Tank Assessments						thirty (32) tanks requiring only external inspections once every five years by 1 PE	
<i>External Only Inspections</i>						<i>30 tanks @ 5 yr inspect = 6.0 tnks/yr @ 7 areas = 0.9 tnks/yr</i>	
Subt - Tank Assessments				\$0	\$0	<i>inspection of 32 tanks</i>	
						<i>The Cost for tank assessment is already provided in the post closure estimate for 7 other units</i>	
(Subt: Assemb PCC-9.03.20 thru 9.03.21)				\$0	\$0	<i>RMU-2 share of annual tank assessment costs: post-closure & perpetual care frequency are equal</i>	
PCC-9.03.22 Replace Mon Well Pump							
Replace Mon Well Pumps	0.53	pump	\$900.00	\$477	\$477	21 pumps @ 2.5% per year = 0.53 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.53	CF	\$12.45	\$7	\$7	0.53 pumps @ 1.0 CF/pump = 0.53 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.53	pad	\$131.50	\$70	\$70	21 pads @ 2.5% per year = 0.53 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	1.1	CF	\$12.45	\$14	\$14	0.53 pads @ 2.0 CF/pad = 1.1 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.53	each	\$371.63	\$197	\$197	21 covers @ 2.5% per year = 0.53 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.27	CF	\$12.45	\$3	\$3	0.53 covers @ 0.5 CF/cover = 0.27 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$843	\$843	<i>monitoring well pump maintenance and replacement</i>	
(Subt: Assemb PCC-9.03.22)				\$843	\$843	<i>RMU-2 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equal</i>	

NOTE: Sheet to be added.

PCC-9.03: RMU-2 (3-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.03.23 Drainage Ditch Repair						ditches estimated to be 10 feet in width	
<i>RMU-2 Drainage Ditches</i>						Perimeter Ditch + Drainage Tile System = 4,700 + 8,307 = 13,007 LF	drainage ditches specific to RMU-2 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	drainage ditches in non-specific areas of facility
<i>RMU-2 Downchutes</i>						685 LF 26" pipe 266 LF 6" pipe	
Drainage Ditch Repair	0.03	acre	\$5,698.00	\$171	\$171	13,007 LF x 10 ft/LF = 3.0 acres @ 1.0% per year = 0.03 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Downchute Pipe Cleaning 26"	34.25	LF	\$2.14	\$73	\$73	685 LF x 5.0% per year = 34.25 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Downchute Pipe Cleaning 6"	13.3	LF	\$2.14	\$28	\$28	266 LF x 5.0% per year = 13.3 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Subt - Drainage Ditch Repair				\$273	\$273	<i>stormwater drainage ditch repair</i>	
						The cost of repair of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.03.24 Drainage Ditch Cleaning						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
<i>RMU-2 Drainage Ditches</i>						13,007 LF	drainage ditches specific to RMU-2 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	drainage ditches in non-specific areas of facility
Drainage Ditch Sediment Cleaning	16.1	CY	\$2.38	\$38	\$38	13,007 LF x 10.0 ft/LF x 0.333 feet (4")/27 = 1,606 CY @ 1%/yr = 16.1 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	5.4	miles	\$3.25	\$18	\$18	21.7 tons @ 20 tons/load = 1.1 loads @ 5 miles per load = 5.4 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	21.7	ton	\$35.00	\$760	\$760	16.1 CY @ 1.35 ton/CY = 21.7 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$815	\$815	<i>stormwater drainage ditch cleaning</i>	
						The cost of cleaning of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.03.25 Basin Cleaning						sediment estimated to be 4 inches deep.	
<i>Basin No. 1</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin No. 2</i>						150000 SF div by 8 units = 18750 SF	
Subt--Basin Cleaning				\$0	\$0	<i>facility stormwater basin cleaning</i>	
						The cost of cleaning of facility basins is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.03.26 Culvert Maint/Replace						average culvert = 40 feet in length and 18 inches in diameter; replace one 40-foot sections/year	
<i>RMU-2 Culverts</i>						3 culverts x 40 feet long = 120 LF	culverts specific to RMU-2 unit
<i>Facility-wide Culverts</i>						20 culverts x 40 feet long = 800 LF div by 8 units = 0 LF for RMU-2	culverts in non-specific areas of facility
Culvert Cleaning - 18" diameter avg	120	LF	\$2.14	\$257	\$257	120 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 18" diam avg (RMU-2)	40	LF	\$11.61	\$464	\$464	120 LF @ 1 culvert/yr = 40 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	0	LF	\$22.35	\$0	\$0	40.0 LF @ 1.00 culvert/yr = 40 LF 0 LF for RMU-2	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	30	CY	\$2.96	\$89	\$89	40.0 LF x 0.75 CY/LF = 30 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	30	CY	\$3.86	\$116	\$116	30 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$926	\$926	<i>culvert maintenance and replacement</i>	
						The cost of cleaning of maintaining facility-wide drainage is provided in post-closure estimate for 8 other units at the facility.	
(Subt: Assemb PCC-9.03.23 thru 9.03.26)				\$2,014	\$2,014	<i>RMU-2 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal</i>	

NOTE: Sheet to be added.

PCC-9.03: RMU-2 (3-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.03.27 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
RMU-2 Gravel Roads						4700 LF x 15 feet wide/ 9 SF/SY = 7833 SY @ 2% per year = 157 SY	
Facility-wide Asphalt Roads						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 0 SF for RMU-2	
RMU-2 Gravel Road Repair	157	SY	\$3.12	\$490	\$490	157 SY	asphalt roads in non-specific areas of facility
Facility-wide Asphalt Roads	0	SF	\$1.35	\$0	\$0	4,224.0 SF div by 8 units = 528.0 SF	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$490	\$490	road maintenance and replacement	DEC 2004 rate * deflator (2004-2010)
(Subt: Assemb PCC-9.03.27)						The cost of cleaning of maintaining facility-wide roads is provided in post-closure estimate for 8 other units at the facility.	
						RMU-2 road maintenance & replacement	

Total Non-Super hours 167.8

PCC-9.03.28 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	13.4	days	\$0.00	\$0	\$0	167.8 hours @ 8 hr/day = 21.0 days @ 75% "D" days = 15.8 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	3.1	days	\$9.00	\$28	\$28	167.8 hours @ 8 hr/day = 21.0 days @ 15% "C" days = 3.1 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	2	days	\$25.00	\$50	\$50	167.8 hours @ 8 hr/day = 21.0 days @ 10% "C" days = 2.1 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	4.2	hours	\$75.00	\$315	\$315	167.8 hours @ 2.5% hr/hr = 4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$393	\$393		
PCC-9.03.29 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in Post-Closure cost estimates for other 7-units at the facility that generate leachate	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
(Subt: Assemb PCC-9.03.28 thru 9.03.29)						supervision, health & safety, and certification	

PCC 9.03 (1-Cell): RMU-2 Direct Cost				\$51,352	\$42,126		
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NOTE: Sheet to be added.

PCC-9.04: RMU-2 (4-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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RMU-2 Parameters - Area	25.4 acres =	122,936 SY =	1,106,424 SF =	1,106.4 MSF	31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs
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RMU-2 Parameters - Fencing					0 LF = portion of perimeter fencing for RMU-2
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Perimeter Ditch	4,825 linear feet	1270+1200+600+500+670+585 = 4,825
Drainage Tile System	5,847 linear feet	25.4 acres * 426 LF/acre = 10,820 LF
MSE Wall	4,200 linear feet	

PCC-9.04.1 Annual Visual Inspections	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
<i>Post-Closure</i>							
make visual inspections and log results; two persons required							
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x 1.7 insp/year x 2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0	hours	\$38.00	\$0	\$0	3 hrs/insp x 2.0 insp/year x 2 per crew/ 8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x 1.8 insp/year x 2 per crew = 7.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0	hours	\$38.00	\$0	\$0	included above	this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	14	hours	\$130.00	\$1,820	\$0	14 hrs/insp x 1.0 insp/year x 1 per crew = 14.0 hours	
Subtotal - Annual Inspections				\$2,610	\$0	RMU-2 post-closure inspections	
<i>Perpetual Care</i>							
Perpetual Care Frequencies according to Page 11 of Site-Wide and RMU-2 Post-Closure Plans							
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x 1.0 insp/year x 2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0.0	hours	\$38.00	\$0	\$0	4 hrs/insp x 1.0 insp/year x 2 per crew/ 8 facility units = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x 1.04 insp/year x 2 per crew = 4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above	this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	14	hours	\$130.00	\$0	\$1,820	14 hrs/insp x 1.0 insp/year x 1 per crew = 14.0 hours	
Subtotal - Annual Inspections Perp-Care				\$0	\$2,284	RMU-2 perpetual care inspections	
(Subt: Assemb PCC-9.04.1)				\$2,610	\$2,284	RMU-2 visual inspections. The Cost for facility fence inspection is already provided in the post closure estimate for 8 other units	

PCC-9.04.2 Perimeter Fence Maint.	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected							
Subt - Perimeter Fence Maint.				\$0	\$0	<i>The Cost for facility fence repair is already provided in the post closure estimate for 8 other units</i>	
(Subt: Assemb PCC-9.04.2)				\$0	\$0		

PCC-9.04.3 Maint. Benchmarks/Surv	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
Annual inspection only							
Maint of Benchmarks & Surveying	0	acres	\$0.00	\$0	\$0	Included in PCC-9.04.1	
Subt - Benchmarks & Surveying				\$0	\$0		
(Subt: Assemb PCC-9.04.3)				\$0	\$0		

NOTE: Sheet to be added.

PCC-9.04: RMU-2 (4-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.04.4 Groundwater Monitoring						sampling crew composed of two technicians; 21 monitoring wells	
Monit'g Events & Samples/Event						0.0 quart'ly + 40 semi-ann + 1.0 b-ann'l x 1.05 each = 42.5 samp	includes 5% QA sampling
<i>Post-Closure</i>							
Technician	85	hours	\$38.00	\$3,230	\$0	42.5 samps @ 1.0 hrs/samp x 2 per crew = 85 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	42.5	samp	\$25.00	\$1,063	\$0	42.5 samps	bottles, shipping supplies
VOCs	42.5	samp	\$105.00	\$4,463	\$0	42.5 samps	Average of three quotes
Subt - GW Monitoring				\$8,755	\$0	post closure groundwater monitoring	
<i>Perpetual Care</i>							
<i>Monit'g Events & Samples/Event</i>						21 wells @ sample/5 years 1.05 each = 4.4 samp/yr	
<i>Perpetual Care</i>							
Perpetual care groundwater monitoring once every five years							
Technician	8.8	hours	\$38.00	\$0	\$334	4.4 samps @ 1.0 hrs/samp x 2 per crew = 8.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	4.4	samp	\$25.00	\$0	\$110	4.4 samples	bottles, shipping supplies
VOCs	4.4	samp	\$105.00	\$0	\$462	4.4 samples	Average of three quotes
Subt - GW Monitoring				\$0	\$906	perpetual care groundwater monitoring	
PCC-9.04.5 Outfalls 002,003,004 SPDES Mon							
<i>Weekly Sampling Events</i>						production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure	
<i>Weekly Sampling Events</i>						12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples	
Subt - SPDES Outfall Sampling & Analysis				\$0	\$0	The Cost for facility stormwater discharge is already provided in the post closure estimate for 8 other units	
PCC-9.04.6 Discharge Monitoring Report							
<i>Subt - Discharge Monitoring Report</i>						Monthly Discharge Monitoring Reports	
<i>Subt - Discharge Monitoring Report</i>						submittal of SPDES Permit required Discharge Monitoring Report (DMR)	
<i>Subt - Discharge Monitoring Report</i>						The Cost for facility stormwater discharge is already provided in the post closure estimate for 8 other units	
<i>(Subt: Assemb PCC-9.04.4 thru 9.04.6)</i>				\$8,755	\$906	RMU-2 groundwater & stormwater monitoring activities	

PCC-9.04.7 Landfill Cover Maint.							
Replacement of Cover	0.127	acre	\$20,973.33	\$2,664	\$2,664	25.4 acre @ 0.5% per year = 0.127 acres/yr	unit price based upon vegetation, topsoil, from RMU-1, Assemblies 14.17 thru 14.18
Subt - Landfill Cover Maint.				\$2,664	\$2,664	RMU-2 upper cap maintenance and replacement	
PCC-9.04.8 Mowing/Grooming							
Mowing	1106.4	MSF	\$3.21	\$3,555	\$3,555	1,106.4 MSF @ 1.0 per year = 1,106.4 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	221.3	MSF	\$3.82	\$845	\$845	1,106.4 MSF @ 1.0 per 5.0 years = 221.3 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming				\$4,400	\$4,400	RMU-2 mowing and fertilizing	
<i>(Subt: Assemb PCC-9.04.7 thru 9.04.8)</i>				\$7,064	\$7,064	RMU-2 cap maintenance activities: post-closure & perpetual care frequency are equal	

PCC-9.04.9 MSE Wall Maint.							
MSE Wall Maint.	4200	LF	\$3.03	\$12,726	\$12,726	\$3.03 based on 6,600 LF for 6-cell scenario. 4,200 LF of MSE wall	WM/Golder Guidance Document (12-1-10)
Subt - MSE Wall Maint.				\$12,726	\$12,726	RMU-2 MSE Wall maintenance	
<i>(Subt: Assemb PCC-9.04.9)</i>				\$12,726	\$12,726		

NOTE: Sheet to be added.

PCC-9.04: RMU-2 (4-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.04.10 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment	95889	gal	\$0.0178	\$1,707	\$0	95,889 gals estimated annual leachate volume based average prediction 0-30 years post closure	unit price derived from AWTS O&M model
Leachate Treatment - Perpetual Care	19039	gal	\$0.0178	\$0	\$339	19,039 perpetual care average years 31-60	Taken from RMU-2 2012 LeachGenMode
Leach Treat Syst. Capital Repl Cost	0	LS	\$17,642.00	\$0	\$0	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each (costs allocated to other 7 units at the f	DEC estimate of AWTS capital replacement costs @ 25 yrs
						<i>The Cost for capital replacement of AWTS is already provided in the post closure estimate for 7 other units that generate leachate</i>	
Laborer	24	hours	\$39.00	\$936	\$936	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	24	hours	\$38.00	\$912	\$912	2 hrs/mon x 12 mon/year = 24 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Primary Leachate VOC Samp & Analysis	8.4	sample	\$105.00	\$882	\$882	4 sumps x 1.05 per sump x 2.0 event/yr = 8.4 samples	Avg. of three lab quotes
Primary Leachate Metals Samp & Analysis	8.4	sample	\$188.00	\$1,579	\$1,579	4 sumps x 1.05 per sump x 2.0 event/yr = 8.4 samples	Avg. of three lab quotes
Primary Leachate PCBs Samp & Analysis	8.4	sample	\$133.33	\$1,120	\$1,120	4 sumps x 1.05 per sump x 2.0 event/yr = 8.4 samples	Avg. of three lab quotes
Secondary Leachate VOC Samp & Analysis	8.4	sample	\$105.00	\$882	\$882	4 sumps x 1.05 per sump x 2.0 event/yr = 8.4 samples	Avg. of three lab quotes
Secondary Leachate Metals Samp & Analysis	4.2	sample	\$188.00	\$790	\$790	4 sumps x 1.05 per sump = 1.0 event/yr = 4.2 samples	Avg. of three lab quotes
Secondary Leachate PP Organics Samp & Analysis	4.2	sample	\$633.33	\$2,660	\$2,660	4 sumps x 1.05 per sump = 1.0 event/yr = 4.2 samples	Avg. of three lab quotes
Electrical Costs - Pumps	384.6	KWH	\$0.086	\$33	\$33	343.7 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 384.6 KWH	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-150	0.2	pump	\$14,425.00	\$2,885	\$2,885	1 pump per 5 years = 0.2 pumps	30 hp pump, site experience
Replacement of Secondary Pump T-150	0.0	pump	\$14,425.00	\$0	\$0	1 pump per 5 years = 0.2 pumps	Pump not necessary in post closure
Replace Primary Sump Pumps	0.8	pump	\$1,382.00	\$1,106	\$1,106	4 pumps x 20.0% pu/yr = 0.8 pumps	1.5 hp submersible pump, site experience
Replace Secondary Sump Pumps	0.6	pump	\$850.00	\$510	\$510	4 pumps x 15.0% pu/yr = 0.6 pumps	4" subm pump, 0.5 hp, , site experience
Replacement of Pump Dischg Hose	1.4	hose	\$211.54	\$296	\$296	1.4 pumps x 1 per pump = 1.4	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	14	CF	\$12.45	\$174	\$174	1.4 pu/hos @ 10 CF/pump = 14 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	3.2	LF	\$53.25	\$170	\$170	640 LF @ 0.5% per year = 3.2 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	1.1	CF	\$12.45	\$14	\$14	3.2 LF @ 0.33 CF/LF = 1.1 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	21	LF	\$73.50	\$1,544	\$1,544	4187 LF @ 0.5% per year = 21 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	10.5	CF	\$12.45	\$131	\$131	21 LF @ 0.50 LF/drum = 10.5 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Pipe Cleaning - 8" diameter	2804	LF	\$2.14	\$6,001	\$6,001	2,804 LF @ 1.0 events/yr = 2,804 LF	DEC 2004 rate * deflator (2004-2010)
Subt - Leachate Coll Syst Mgmt				\$24,331	\$22,963	<i>annual O&M costs plus capital replacement of treatment system, pumps, and piping</i>	
PCC-9.04.11 AWTS Operation						Shift operation of the AWTS for 12 months	no DEC estimate for this activity: DEC Estimate included in unit r
Subt - AWTS Operation				\$0	\$0	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
						<i>The Cost for operation of AWTS is already provided in the post closure estimate for 7 other units that generate leachate</i>	
PCC-9.04.12 Site Waters Treatment							
Subt - Site Waters Treatment				\$0	\$0	<i>The Cost for treatment of of site waters is already provided in the post closure estimate for 7 other units</i>	Labor included in PCC-1.7a
PCC-9.04.13 Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
Subt - Batch Tank Qualification				\$0	\$0	<i>The Cost for tank qualifications is already provided in the post closure estimate for 7 other units</i>	Samples collected by lab technician
PCC-9.04.14 Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/evnt= 3 samples	sampling & analysis prior to pond discharge
Subt - Pond Sampling & Analysis				\$0	\$0	<i>The Cost for pond qualifications is already provided in the post closure estimate for 7 other units</i>	

NOTE: Sheet to be added.

PCC-9.04: RMU-2 (4-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.04.15 Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischage qualification report	
Subt - S&A Cert'n & Report				\$0	\$0	diver(s) to check discharge pipe; also engineer's predischage qualification report	
						The Cost for pond qualifications report and diver inspections of outfall is already provided in the post closure estimate for 7 other units	
PCC-9.04.16 Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
FAC Pond 1/2 Inventory in Gallons		gals	n/a			45.8 total hours req'd to pump	& site waters
						transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft). The Cost for discharge to outfall is	
Subtotal - Pump FAC Pond 1/2				\$0	\$0	already provided in the post closure estimate for 7 other units	
(Subt: Assemb PCC-9.04.10 thru 9.04.16)				\$24,331	\$22,963	RMU-2 share of annual O&M and capital costs for leachate collection & treatment: provided in post closure cost estimate for 7 other units at facility	

PCC-9.04.17 N/A							
Subt - N/A				\$0	\$0		
PCC-9.04.18 N/A							
Subt - N/A				\$0	\$0		
PCC-9.04.19 N/A							
Subt - N/A				\$0	\$0		
(Subt: Assemb PCC-9.04.17 thru 9.04.19)				\$0	\$0	RMU-2 share of annual leachate transport costs - n/a, as leachate pumped directly to the AWTS	

PCC-9.04.20 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
Internal & External Inspections						16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr	
Subt - Tank Assessments				\$0	\$0	inspection of 16 tanks	
						The Cost for tank assessment is already provided in the post closure estimate for 7 other units	
PCC-9.04.21 Tank Assessments						thirty (32) tanks requiring only external inspections once every five years by 1 PE	
External Only Inspections						30 tanks @ 5 yr inspect = 6.0 tnks/yr @ 7 areas = 0.9 tnks/yr	
Subt - Tank Assessments				\$0	\$0	inspection of 32 tanks	
						The Cost for tank assessment is already provided in the post closure estimate for 7 other units	
(Subt: Assemb PCC-9.04.20 thru 9.04.21)				\$0	\$0	RMU-2 share of annual tank assessment costs: post-closure & perpetual care frequency are equal	

PCC-9.04.22 Replace Mon Well Pump							
Replace Mon Well Pumps	0.53	pump	\$900.00	\$477	\$477	21 pumps @ 2.5% per year = 0.53 pumps/yr	Site experiance third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.53	CF	\$12.45	\$7	\$7	0.53 pumps @ 1.0 CF/pump = 0.53 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.53	pad	\$131.50	\$70	\$70	21 pads @ 2.5% per year = 0.53 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	1.1	CF	\$12.45	\$14	\$14	0.53 pads @ 2.0 CF/pad = 1.1 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.53	each	\$371.63	\$197	\$197	21 covers @ 2.5% per year = 0.53 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.27	CF	\$12.45	\$3	\$3	0.53 covers @ 0.5 CF/cover = 0.27 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$843	\$843	monitoring well pump maintenance and replacement	
(Subt: Assemb PCC-9.04.22)				\$843	\$843	RMU-2 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equal	

NOTE: Sheet to be added.

PCC-9.04: RMU-2 (4-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.04.23 Drainage Ditch Repair						ditches estimated to be 10 feet in width	
<i>RMU-2 Drainage Ditches</i>						Perimeter Ditch + Drainage Tile System = 4,825 + 10,820 = 15,645 LF	<i>drainage ditches specific to RMU-2 unit</i>
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	<i>drainage ditches in non-specific areas of facility</i>
<i>RMU-2 Downchutes</i>						685 LF 26" pipe 266 LF 6" pipe	
Drainage Ditch Repair	0.025	acre	\$5,698.00	\$142	\$142	15,645 LF x 10 ft/LF = 2.45 acres @ 1.0% per year = 0.025 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Downchute Pipe Cleaning 26"	34.25	LF	\$2.14	\$73	\$73	685 LF x 5.0% per year = 34.25 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Downchute Pipe Cleaning 6"	13.3	LF	\$2.14	\$28	\$28	266 LF x 5.0% per year = 13.3 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Subt - Drainage Ditch Repair				\$244	\$244	<i>stormwater drainage ditch repair</i>	
						The cost of repair of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.04.24 Drainage Ditch Cleaning						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
<i>RMU-2 Drainage Ditches</i>						10,672 LF	<i>drainage ditches specific to RMU-2 unit</i>
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	<i>drainage ditches in non-specific areas of facility</i>
Drainage Ditch Sediment Cleaning	19.3	CY	\$2.38	\$46	\$46	15,645 LF x 10.0 ft/LF x 0.333 feet (4")/27 = 1,931 CY @ 1%/yr = 19.3 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	6.5	miles	\$3.25	\$21	\$21	26.1 tons @ 20 tons/load = 1.3 loads @ 5 miles per load = 6.5 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	26.1	ton	\$35.00	\$914	\$914	19.3 CY @ 1.35 ton/CY = 26.1 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$981	\$981	<i>stormwater drainage ditch cleaning</i>	
						The cost of cleaning of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.04.25 Basin Cleaning						sediment estimated to be 4 inches deep.	
<i>Basin No. 1</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin No. 2</i>						150000 SF div by 8 units = 18750 SF	
Subt--Basin Cleaning				\$0	\$0	<i>facility stormwater basin cleaning</i>	
						The cost of cleaning of facility basins is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.04.26 Culvert Maint/Replace						average culvert = 40 feet in length and 18 inches in diameter; replace one 40-foot sections/year	
<i>RMU-2 Culverts</i>						4 culverts x 40 feet long = 160 LF	<i>culverts specific to RMU-2 unit</i>
<i>Facility-wide Culverts</i>						20 culverts x 40 feet long = 800 LF div by 8 units = 0 LF for RMU-2	<i>culverts in non-specific areas of facility</i>
Culvert Cleaning - 18" diameter avg	160	LF	\$2.14	\$342	\$342	160 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 18" diam avg (RMU-2)	40	LF	\$11.61	\$464	\$464	160 LF @ 1 culvert/yr = 40 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	0	LF	\$22.35	\$0	\$0	40.0 LF @ 1.00 culvert/yr = 40 LF 0 LF for RMU-2	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	30	CY	\$2.96	\$89	\$89	40.0 LF x 0.75 CY/LF = 30 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	30	CY	\$3.86	\$116	\$116	30 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$1,011	\$1,011	<i>culvert maintenance and replacement</i>	
						The cost of cleaning of maintaining facility-wide drainage is provided in post-closure estimate for 8 other units at the facility.	
(Subt: Assemb PCC-9.04.23 thru 9.04.26)				\$2,236	\$2,236	<i>RMU-2 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal</i>	

NOTE: Sheet to be added.

PCC-9.04: RMU-2 (4-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.04.27 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
RMU-2 Gravel Roads						48425 LF x 15 feet wide/ 9 SF/SY = 8042 SY @ 2% per year = 160.8 SY	
Facility-wide Asphalt Roads						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 0 SF for RMU-2	asphalt roads in non-specific areas of facility
RMU-2 Gravel Road Repair	160.8	SY	\$3.12	\$502	\$502	160.8 SY	DEC 2004 rate * deflator (2004-2010)
Facility-wide Asphalt Roads	0	SF	\$1.35	\$0	\$0	4,224.0 SF div by 8 units = 528.0 SF 0 SF for RMU-2	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$502	\$502	road maintenance and replacement	
						The cost of cleaning of maintaining facility-wide roads is provided in post-closure estimate for 8 other units at the facility.	
(Subt: Assemb PCC-9.04.27)				\$502	\$502	RMU-2 road maintenance & replacement	

Total Non-Super hours 169.8

PCC-9.04.28 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	15.4	days	\$0.00	\$0	\$0	169.8 hours @ 8 hr/day = 21.2 days @ 75% "D" days = 15.9 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	3.1	days	\$9.00	\$28	\$28	169.8 hours @ 8 hr/day = 21.2 days @ 15% "C" days = 3.2 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	2	days	\$25.00	\$50	\$50	169.8 hours @ 8 hr/day = 21.2 days @ 10% "C" days = 2.1 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	4.2	hours	\$75.00	\$315	\$315	169.8 hours @ 2.5% hr/hr = 4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$393	\$393		
PCC-9.04.29 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in Post-Closure cost estimates for other 7-units at the facility that generate leachate	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
(Subt: Assemb PCC-9.04.28 thru 9.04.29)				\$393	\$393	supervision, health & safety, and certification	

PCC 9.04 (4-Cells): RMU-2 Direct Cost				\$59,460	\$49,917		
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NOTE: Sheet to be added.

PCC-9.05: RMU-2 (5-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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RMU-2 Parameters - Area	31.9 acres =	154,396 SY =	1,389,546 SF =	1,389.5 MSF	31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs
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RMU-2 Parameters - Fencing					0 LF = portion of perimeter fencing for RMU-2
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Perimeter Ditch	6,035 linear feet	1200+600+500+670+585+560+560+500+600+260 = 6,035
Drainage Tile System	7,728 linear feet	31.9 acres * 426 LF/acre = 13,589 LF
MSE Wall	5,230 linear feet	

PCC-9.05.1 Annual Visual Inspections						make visual inspections and log results; two persons required				
<i>Post-Closure</i>										
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x	1.7 insp/year x	2 per crew =	6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x	1.7 insp/year x	2 per crew =	6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0	hours	\$38.00	\$0	\$0	3 hrs/insp x	2.0 insp/year x	2 per crew/	8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x	1.8 insp/year x	2 per crew =	7.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0	hours	\$38.00	\$0	\$0	included above				this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	16	hours	\$130.00	\$2,080	\$0	16 hrs/insp x	1.0 insp/year x	1 per crew =	16.0 hours	
Subtotal - Annual Inspections				\$2,870	\$0	RMU-2 post-closure inspections				
<i>Perpetual Care</i>										
Perpetual Care Frequencies according to Page 11 of Site-Wide and RMU-2 Post-Closure Plans										
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x	1.0 insp/year x	2 per crew =	4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x	1.0 insp/year x	2 per crew =	4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0.0	hours	\$38.00	\$0	\$0	4 hrs/insp x	1.0 insp/year x	2 per crew/	8 facility units = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x	1.04 insp/year x	2 per crew =	4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above				this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	16	hours	\$130.00	\$0	\$2,080	16 hrs/insp x	1.0 insp/year x	1 per crew =	16.0 hours	
Subtotal - Annual Inspections Perp-Care				\$0	\$2,544	RMU-2 perpetual care inspections				
(Subt: Assemb PCC-9.05.1)				\$2,870	\$2,544	RMU-2 visual inspections. The Cost for facility fence inspection is already provided in the post closure estimate for 8 other units				

PCC-9.05.2 Perimeter Fence Maint.						one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected				
<i>Subt - Perimeter Fence Maint.</i>										
				\$0	\$0	The Cost for facility fence repair is already provided in the post closure estimate for 8 other units				
(Subt: Assemb PCC-9.05.2)				\$0	\$0					

PCC-9.05.3 Maint. Benchmarks/Surv						Annual inspection only				
Maint of Benchmarks & Surveying	0	acres	\$0.00	\$0	\$0	Included in PCC-9.05.1				
Subt - Benchmarks & Surveying				\$0	\$0					
(Subt: Assemb PCC-9.05.3)				\$0	\$0					

NOTE: Sheet to be added.

PCC-9.05: RMU-2 (5-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.05.4 Groundwater Monitoring						<i>sampling crew composed of two technicians; 21 monitoring wells</i>	
<i>Monit'g Events & Samples/Event</i>						<i>0.0 quart'ly + 40 semi-ann + 1.0 b-ann'l x 1.05 each = 42.5 samp</i>	<i>includes 5% QA sampling</i>
<i>Post-Closure</i>							
Technician	85	hours	\$38.00	\$3,230	\$0	42.5 samps @ 1.0 hrs/samp x 2 per crew = 85 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	42.5	samp	\$25.00	\$1,063	\$0	42.5 samps	bottles, shipping supplies
VOCs	42.5	samp	\$105.00	\$4,463	\$0	42.5 samps	Average of three quotes
Subt - GW Monitoring				\$8,755	\$0	<i>post closure groundwater monitoring</i>	
<i>Monit'g Events & Samples/Event</i>						<i>21 wells @ sample/5 years 1.05 each = 4.4 samp/yr</i>	
<i>Perpetual Care</i>						<i>Perpetual care groundwater monitoring once every five years</i>	
Technician	8.8	hours	\$38.00	\$0	\$334	4.4 samps @ 1.0 hrs/samp x 2 per crew = 8.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	4.4	samp	\$25.00	\$0	\$110	4.4 samples	bottles, shipping supplies
VOCs	4.4	samp	\$105.00	\$0	\$462	4.4 samples	Average of three quotes
Subt - GW Monitoring				\$0	\$906	<i>perpetual care groundwater monitoring</i>	
PCC-9.05.5 Outfalls 002,003,004 SPDES Mon						<i>production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure</i>	
<i>Weekly Sampling Events</i>						<i>12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples</i>	<i>sampling & analysis according to SPDES Permit</i>
Subt - SPDES Outfall Sampling & Analysis				\$0	\$0	<i>The Cost for facility stormwater discharge is already provided in the post closure estimate for 8 other units</i>	
PCC-9.05.6 Discharge Monitoring Report						<i>Monthly Discharge Monitoring Reports</i>	
Subt - Discharge Monitoring Report				\$0	\$0	<i>submittal of SPDES Permit required Discharge Monitoring Report (DMR)</i>	
						<i>The Cost for facility stormwater discharge is already provided in the post closure estimate for 8 other units</i>	
(Subt: Assemb PCC-9.05.4 thru 9.05.6)				\$8,755	\$906	<i>RMU-2 groundwater & stormwater monitoring activities</i>	

PCC-9.05.7 Landfill Cover Maint.							
Replacement of Cover	0.1595	acre	\$20,973.33	\$3,345	\$3,345	31.9 acre @ 0.5% per year = 0.1595 acres/yr	unit price based upon vegetation, topsoil, from RMU-1, Assemblies 14.17 thru 14.18
Subt - Landfill Cover Maint.				\$3,345	\$3,345	<i>RMU-2 upper cap maintenance and replacement</i>	
PCC-9.05.8 Mowing/Grooming							
Mowing	1389.5	MSF	\$3.21	\$4,465	\$4,465	1389.5 MSF @ 1.0 per year = 1389.5 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	277.9	MSF	\$3.82	\$1,061	\$1,061	1389.5 MSF @ 1.0 per 5.0 years = 277.9 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming				\$5,526	\$5,526	<i>RMU-2 mowing and fertilizing</i>	
(Subt: Assemb PCC-9.05.7 thru 9.05.8)				\$8,871	\$8,871	<i>RMU-2 cap maintenance activities: post-closure & perpetual care frequency are equal</i>	

PCC-9.05.9 MSE Wall Maint.						<i>\$3.03 based on 6,600 LF for 6-cell scenario.</i>	
MSE Wall Maint.	5230	LF	\$3.03	\$15,847	\$15,847	4,200 LF of MSE wall	WM/Golder Guidance Document (12-1-10)
Subt - MSE Wall Maint.				\$15,847	\$15,847	<i>RMU-2 MSE Wall maintenance</i>	
(Subt: Assemb PCC-9.05.9)				\$15,847	\$15,847		

NOTE: Sheet to be added.

PCC-9.05: RMU-2 (5-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.05.10 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment	120427	gal	\$0.0178	\$2,144	\$0	120,427 gals estimated annual leachate volume based average prediction 0-30 years post closure	unit price derived from AWTs O&M model
Leachate Treatment - Perpetual Care	23911	gal	\$0.0178	\$0	\$426	23,911 perpetual care average years 31-60	Taken from RMU-2 2012 LeachGenMode
Leach Treat Syst. Capital Repl Cost	0	LS	\$17,642.00	\$0	\$0	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each (costs allocated to other 7 units at the fac	DEC estimate of AWTs capital replacement costs @ 25 yrs
						<i>The Cost for capital replacement of AWTs is already provided in the post closure estimate for 7 other units that generate leachate</i>	
Laborer	48	hours	\$39.00	\$1,872	\$1,872	4 hrs/mon x 12 mon/year = 48 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	48	hours	\$38.00	\$1,824	\$1,824	4 hrs/mon x 12 mon/year = 48 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Primary Leachate VOC Samp & Analysis	10.5	sample	\$105.00	\$1,103	\$1,103	5 sumps x 1.05 per sump x 2.0 event/yr = 10.5 samples	Avg. of three lab quotes
Primary Leachate Metals Samp & Analysis	10.5	sample	\$188.00	\$1,974	\$1,974	5 sumps x 1.05 per sump x 2.0 event/yr = 10.5 samples	Avg. of three lab quotes
Primary Leachate PCBs Samp & Analysis	10.5	sample	\$133.33	\$1,400	\$1,400	5 sumps x 1.05 per sump x 2.0 event/yr = 10.5 samples	Avg. of three lab quotes
Secondary Leachate VOC Samp & Analysis	10.5	sample	\$105.00	\$1,103	\$1,103	5 sumps x 1.05 per sump x 2.0 event/yr = 10.5 samples	Avg. of three lab quotes
Secondary Leachate Metals Samp & Analysis	5.3	sample	\$188.00	\$996	\$996	5 sumps x 1.05 per sump = 1.0 event/yr = 5.3 samples	Avg. of three lab quotes
Secondary Leachate PP Organics Samp & Analysis	5.3	sample	\$633.33	\$3,357	\$3,357	5 sumps x 1.05 per sump = 1.0 event/yr = 5.3 samples	Avg. of three lab quotes
Electrical Costs - Pumps	384.6	KWH	\$0.086	\$33	\$33	343.7 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 384.6 KWH	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-150	0.2	pump	\$14,425.00	\$2,885	\$2,885	1 pump per 5 years = 0.2 pumps	30 hp pump, site experience
Replacement of Secondary Pump T-150	0.0	pump	\$14,425.00	\$0	\$0	1 pump per 5 years = 0.2 pumps	Pump not necessary in post closure
Replace Primary Sump Pumps	1	pump	\$1,382.00	\$1,382	\$1,382	5 pumps x 20.0% pu/yr = 1 pumps	1.5 hp submersible pump, site experience
Replace Secondary Sump Pumps	0.75	pump	\$850.00	\$638	\$638	5 pumps x 15.0% pu/yr = 0.75 pumps	4" subm pump, 0.5 hp, , site experience
Replacement of Pump Dischg Hose	1.75	hose	\$211.54	\$370	\$370	1.75 pumps x 1 per pump = 1.75	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	17.5	CF	\$12.45	\$218	\$218	1.75 pu/hos @ 10 CF/pump = 17.5 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	4	LF	\$53.25	\$213	\$213	800 LF @ 0.5% per year = 4 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	1.34	CF	\$12.45	\$17	\$17	4 LF @ 0.33 CF/LF = 1.34 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	26.2	LF	\$73.50	\$1,926	\$1,926	5,234 LF @ 0.5% per year = 26.2 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	13.1	CF	\$12.45	\$163	\$163	26.2 LF @ 0.50 LF/drum = 13.1 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Pipe Cleaning - 8" diameter	3504.2	LF	\$2.14	\$7,499	\$7,499	3,504.2 LF @ 1.0 events/yr = 3,504.2 LF	DEC 2004 rate * deflator (2004-2010)
Subt - Leachate Coll Syst Mgmt				\$31,115	\$29,397	<i>annual O&M costs plus capital replacement of treatment system, pumps, and piping</i>	
PCC-9.05.11 AWTs Operation						Shift operation of the AWTs for 12 months	no DEC estimate for this activity: DEC Estimate included in un
Subt - AWTs Operation				\$0	\$0	AWTs Operation - operation of AWTs for twelve (12) months during post closure or perpetual care of the site	
						<i>The Cost for operation of AWTs is already provided in the post closure estimate for 7 other units that generate leachate</i>	
PCC-9.05.12 Site Waters Treatment							
Subt - Site Waters Treatment				\$0	\$0	<i>The Cost for treatment of of site waters is already provided in the post closure estimate for 7 other units</i>	Labor included in PCC-1.7a
PCC-9.05.13 Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
Subt - Batch Tank Qualification				\$0	\$0	<i>The Cost for tank qualifications is already provided in the post closure estimate for 7 other units</i>	Samples collected by lab technician
PCC-9.05.14 Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Subt - Pond Sampling & Analysis				\$0	\$0	<i>The Cost for pond qualifications is already provided in the post closure estimate for 7 other units</i>	

NOTE: Sheet to be added.

PCC-9.05: RMU-2 (5-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.05.15 Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischage qualification report	
Subt - S&A Cert'n & Report				\$0	\$0	diver(s) to check discharge pipe; also engineer's predischage qualification report	Fac Pond 8 out of service empty
						The Cost for pond qualifications report and diver inspections of outfall is already provided in the post closure estimate for 7 other units	
PCC-9.05.16 Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
FAC Pond 1/2 Inventory in Gallons		gals	n/a			45.8 total hours req'd to pump	& site waters
						transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft). The Cost for discharge to outfall is already provided in the post closure estimate for 7 other units	
Subtotal - Pump FAC Pond 1/2				\$0	\$0		
(Subt: Assemb PCC-9.05.10 thru 9.05.16)				\$31,115	\$29,397	RMU-2 share of annual O&M and capital costs for leachate collection & treatment: provided in post closure cost estimate for 7 other units at facility	

PCC-9.05.17 N/A							
Subt - N/A				\$0	\$0		
PCC-9.05.18 N/A							
Subt - N/A				\$0	\$0		
PCC-9.05.19 N/A							
Subt - N/A				\$0	\$0		
(Subt: Assemb PCC-9.05.17 thru 9.05.19)				\$0	\$0	RMU-2 share of annual leachate transport costs - n/a, as leachate pumped directly to the AWTS	

PCC-9.05.20 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
Internal & External Inspections						16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr	
Subt - Tank Assessments				\$0	\$0	inspection of 16 tanks	
						The Cost for tank assessment is already provided in the post closure estimate for 7 other units	
PCC-9.05.21 Tank Assessments						thirty (32) tanks requiring only external inspections once every five years by 1 PE	
External Only Inspections						30 tanks @ 5 yr inspect = 6.0 tnks/yr @ 7 areas = 0.9 tnks/yr	
Subt - Tank Assessments				\$0	\$0	inspection of 32 tanks	
						The Cost for tank assessment is already provided in the post closure estimate for 7 other units	
(Subt: Assemb PCC-9.05.20 thru 9.05.21)				\$0	\$0	RMU-2 share of annual tank assessment costs: post-closure & perpetual care frequency are equal	

PCC-9.05.22 Replace Mon Well Pump							
Replace Mon Well Pumps	0.53	pump	\$900.00	\$477	\$477	21 pumps @ 2.5% per year = 0.53 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.53	CF	\$12.45	\$7	\$7	0.53 pumps @ 1.0 CF/pump = 0.53 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.53	pad	\$131.50	\$70	\$70	21 pads @ 2.5% per year = 0.53 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	1.1	CF	\$12.45	\$14	\$14	0.53 pads @ 2.0 CF/pad = 1.1 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.53	each	\$371.63	\$197	\$197	21 covers @ 2.5% per year = 0.53 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.27	CF	\$12.45	\$3	\$3	0.53 covers @ 0.5 CF/cover = 0.27 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$843	\$843	monitoring well pump maintenance and replacement	
(Subt: Assemb PCC-9.05.22)				\$843	\$843	RMU-2 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equal	

NOTE: Sheet to be added.

PCC-9.05: RMU-2 (5-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.05.23 Drainage Ditch Repair						ditches estimated to be 10 feet in width	
<i>RMU-2 Drainage Ditches</i>						Perimeter Ditch + Drainage Tile System = 6,035 + 13,589 = 19,624 LF	drainage ditches specific to RMU-2 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	drainage ditches in non-specific areas of facility
<i>RMU-2 Downchutes</i>						685 LF 26" pipe 266 LF 6" pipe	
Drainage Ditch Repair	0.045	acre	\$5,698.00	\$256	\$256	19,624 LF x 10 ft/LF = 4.5 acres @ 1.0% per year = 0.045 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Downchute Pipe Cleaning 26"	34.25	LF	\$2.14	\$73	\$73	685 LF x 5.0% per year = 34.25 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Downchute Pipe Cleaning 6"	13.3	LF	\$2.14	\$28	\$28	266 LF x 5.0% per year = 13.3 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Subt - Drainage Ditch Repair				\$358	\$358	<i>stormwater drainage ditch repair</i>	
						The cost of repair of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.05.24 Drainage Ditch Cleaning						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
<i>RMU-2 Drainage Ditches</i>						13,763 LF	drainage ditches specific to RMU-2 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	drainage ditches in non-specific areas of facility
Drainage Ditch Sediment Cleaning	24.2	CY	\$2.38	\$58	\$58	19,624 LF x 10.0 ft/LF x 0.333 feet (4")/27 = 2,422 CY @ 1%/yr = 24.2 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	8.2	miles	\$3.25	\$27	\$27	32.7 tons @ 20 tons/load = 1.63 loads @ 5 miles per load = 8.2 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	32.7	ton	\$35.00	\$1,145	\$1,145	24.2 CY @ 1.35 ton/CY = 32.7 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$1,229	\$1,229	<i>stormwater drainage ditch cleaning</i>	
						The cost of cleaning of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.05.25 Basin Cleaning						sediment estimated to be 4 inches deep.	
<i>Basin No. 1</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin No. 2</i>						150000 SF div by 8 units = 18750 SF	
Subt--Basin Cleaning				\$0	\$0	<i>facility stormwater basin cleaning</i>	
						The cost of cleaning of facility basins is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.05.26 Culvert Maint/Replace						average culvert = 40 feet in length and 18 inches in diameter; replace one 40-foot sections/year	
<i>RMU-2 Culverts</i>						5 culverts x 40 feet long = 200 LF	culverts specific to RMU-2 unit
<i>Facility-wide Culverts</i>						20 culverts x 40 feet long = 800 LF div by 8 units = 0 LF for RMU-2	culverts in non-specific areas of facility
Culvert Cleaning - 18" diameter avg	200	LF	\$2.14	\$428	\$428	200 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 18" diam avg (RMU-2)	40	LF	\$11.61	\$464	\$464	200 LF @ 1 culvert/yr = 40 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)	0	LF	\$22.35	\$0	\$0	40.0 LF @ 1.00 culvert/yr = 40 LF 0 LF for RMU-2	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	30	CY	\$2.96	\$89	\$89	40.0 LF x 0.75 CY/LF = 30 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	30	CY	\$3.86	\$116	\$116	30 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$1,097	\$1,097	<i>culvert maintenance and replacement</i>	
						The cost of cleaning of maintaining facility-wide drainage is provided in post-closure estimate for 8 other units at the facility.	
(Subt: Assemb PCC-9.05.23 thru 9.05.26)				\$2,684	\$2,684	RMU-2 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal	

NOTE: Sheet to be added.

PCC-9.05: RMU-2 (5-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.05.27 Road Maint/Replace						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
RMU-2 Gravel Roads						6035 LF x 15 feet wide/ 9 SF/SY = 10058 SY @ 2% per year = 201.2 SY	
Facility-wide Asphalt Roads						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 0 SF for RMU-2	asphalt roads in non-specific areas of facility
RMU-2 Gravel Road Repair	201.2	SY	\$3.12	\$628	\$628	201.2 SY	DEC 2004 rate * deflator (2004-2010)
Facility-wide Asphalt Roads	0	SF	\$1.35	\$0	\$0	4,224.0 SF div by 8 units = 528.0 SF 0 SF for RMU-2	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$628	\$628	road maintenance and replacement	
						The cost of cleaning of maintaining facility-wide roads is provided in post-closure estimate for 8 other units at the facility.	
(Subt: Assemb PCC-9.05.27)				\$628	\$628	RMU-2 road maintenance & replacement	

Total Non-Super hours 219.8

PCC-9.05.28 PPE Use/H&S Planning						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	20.6	days	\$0.00	\$0	\$0	219.8 hours @ 8 hr/day = 27.5 days @ 75% "D" days = 20.6 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	4.1	days	\$9.00	\$37	\$37	219.8 hours @ 8 hr/day = 27.5 days @ 15% "C" days = 4.1 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	2.8	days	\$25.00	\$70	\$70	219.8 hours @ 8 hr/day = 27.5 days @ 10% "C" days = 2.8 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	5.5	hours	\$75.00	\$413	\$413	219.8 hours @ 2.5% hr/hr = 5.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$519	\$519		
PCC-9.05.29 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in Post-Closure cost estimates for other 7-units at the facility that generate leachate	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
(Subt: Assemb PCC-9.05.28 thru 9.05.29)				\$519	\$519	supervision, health & safety, and certification	

PCC 9.05 (5-Cells): RMU-2 Direct Cost				\$72,133	\$62,239		
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NOTE: Sheet to be added.

PCC-9.06: RMU-2 (6-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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RMU-2 Parameters - Area 38.5 acres = 186,340 SY = 1,677,060 SF = 1677 MSF 31680 LF (6 Mi.) = total est'd perimeter fencing for eight (8) SLFs

RMU-2 Parameters - Fencing 0 LF = portion of perimeter fencing for RMU-2

Perimeter Ditch 6,500 linear feet
 Drainage Tile System 16,400 linear feet 16,400/38.5 = 426 LF/acre
 MSE Wall 6,600 linear feet

PCC-9.06.1 Annual Visual Inspections						make visual inspections and log results; two persons required			
<i>Post-Closure</i>									
Technician - Landfill	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x	1.7 insp/year x	2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	6.8	hours	\$38.00	\$258	\$0	2 hrs/insp x	1.7 insp/year x	2 per crew = 6.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0	hours	\$38.00	\$0	\$0	3 hrs/insp x	2.0 insp/year x	2 per crew/ 8 facility units = 1.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	7.2	hours	\$38.00	\$274	\$0	2 hrs/insp x	1.8 insp/year x	2 per crew = 7.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0	hours	\$38.00	\$0	\$0	included above			this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	18	hours	\$130.00	\$2,340	\$0	18 hrs/insp x	1.0 insp/year x	1 per crew = 18.0 hours	
Subtotal - Annual Inspections				\$3,130	\$0	RMU-2 post-closure inspections			
<i>Perpetual Care</i>									
Perpetual Care Frequencies according to Page 11 of Site-Wide and RMU-2 Post-Closure Plans									
Technician - Landfill	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x	1.0 insp/year x	2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Landfill Leachate Syst	4.0	hours	\$38.00	\$0	\$152	2 hrs/insp x	1.0 insp/year x	2 per crew = 4.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Perimeter Fencing	0.0	hours	\$38.00	\$0	\$0	4 hrs/insp x	1.0 insp/year x	2 per crew/ 8 facility units = 1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - Storm Water Mgt Syst	4.2	hours	\$38.00	\$0	\$160	2 hrs/insp x	1.04 insp/year x	2 per crew = 4.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician - 25-Yr Storm Event	0.0	hours	\$38.00	\$0	\$0	included above			this activity s/b included with annual storm water inspect'ns
Engineer - MSE Wall Inspection	18	hours	\$130.00	\$0	\$2,340	18 hrs/insp x	1.0 insp/year x	1 per crew = 18.0 hours	
Subtotal - Annual Inspections Perp-Care				\$0	\$2,804	RMU-2 perpetual care inspections			
<i>(Subt: Assemb PCC-9.06.1)</i>				\$3,130	\$2,804	RMU-2 visual inspections. The Cost for facility fence inspection is already provided in the post closure estimate for 8 other units			

PCC-9.06.2 Perimeter Fence Maint.						one-eighth of total perimeter fencing allocated per SLF unit; 2% annual replacement projected		
Subt - Perimeter Fence Maint.				\$0	\$0	The Cost for facility fence repair is already provided in the post closure estimate for 8 other units		
<i>(Subt: Assemb PCC-9.06.2)</i>				\$0	\$0			

PCC-9.06.3 Maint. Benchmarks/Surv						Annual inspection only		
Subt - Benchmarks & Surveying				\$0	\$0			
<i>(Subt: Assemb PCC-9.06.3)</i>				\$0	\$0			

NOTE: Sheet to be added.

PCC-9.06: RMU-2 (6-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.06.4 Groundwater Monitoring							
<i>Monit'g Events & Samples/Event</i>						<i>sampling crew composed of two technicians; 29 monitoring wells</i>	
<i>Post-Closure</i>						<i>0.0 quart'ly + 58.0 semi-ann + 1.0 b-ann'l x 1.05 each = 61.4 samp</i>	<i>includes 5% QA sampling</i>
Technician	122.8	hours	\$38.00	\$4,666	\$0	61.4 samps @ 1.0 hrs/samp x 2 per crew = 122.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	61.4	samp	\$25.00	\$1,535	\$0	61.4 samps	bottles, shipping supplies
VOCs	61.4	samp	\$105.00	\$6,447	\$0	61.4 samps	Average of three quotes
Subt - GW Monitoring				\$12,648	\$0	<i>post closure groundwater monitoring</i>	
PCC-9.06.5 Outfalls 002,003,004 SPDES Mon							
<i>Monit'g Events & Samples/Event</i>						<i>29.0 wells @ sample/5 years 1.05 each = 6.1 samp/yr</i>	
<i>Perpetual Care</i>						<i>Perpetual care groundwater monitoring once every five years</i>	
Technician	12.2	hours	\$38.00	\$0	\$464	6.1 samps @ 1.0 hrs/samp x 2 per crew = 12.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Sampling Supplies	6.1	samp	\$25.00	\$0	\$153	6.1 samples	bottles, shipping supplies
VOCs	6.1	samp	\$105.00	\$0	\$641	6.1 samples	Average of three quotes
Subt - GW Monitoring				\$0	\$1,257	<i>perpetual care groundwater monitoring</i>	
PCC-9.06.6 Discharge Monitoring Report							
<i>Weekly Sampling Events</i>						<i>production rate = 2 hours per sample for a one-person crew: each year of monitoring during closure</i>	
Subt - SPDES Outfall Sampling & Analysis				\$0	\$0	<i>12 months = 52 weeks @ 3 outfalls @ 1 sample/OF = 156 samples</i>	<i>sampling & analysis according to SPDES Permit</i>
						<i>The Cost for facility stormwater discharge is already provided in the post closure estimate for 8 other units</i>	
PCC-9.06.7 Landfill Cover Maint.							
Replacement of Cover	0.1925	acre	\$20,973.33	\$4,037	\$4,037	38.5 acre @ 0.5% per year = 0.1925 acres/yr	unit price based upon vegetation, topsoil, from RMU-1, Assemblies 14.17 thru 14.18
Subt - Landfill Cover Maint.				\$4,037	\$4,037	<i>RMU-2 upper cap maintenance and replacement</i>	
PCC-9.06.8 Mowing/Grooming							
Mowing	1677.0	MSF	\$3.21	\$5,388	\$5,388	1,677 MSF @ 1.0 per year = 1,677 MSF	DEC 2004 rate * deflator (2004-2010)
Fertilizing	335.4	MSF	\$3.82	\$1,281	\$1,281	1,677 MSF @ 1.0 per 5.0 years = 335.4 MSF	DEC 2004 rate * deflator (2004-2010)
Subt - Mowing/Grooming				\$6,669	\$6,669	<i>RMU-2 mowing and fertilizing</i>	
(Subt: Assemb PCC-9.06.7 thru 9.06.8)				\$10,707	\$10,707	<i>RMU-2 cap maintenance activities: post-closure & perpetual care frequency are equal</i>	
PCC-9.06.9 MSE Wall Maint.							
MSE Wall Maint.	6600	LF	\$3.03	\$19,998	\$19,998	Annual Inspections and annual repair and maintenance = \$3.03/LF. 6,600 LF of MSE wall	WM/Golder Guidance Document (12-1-10)
Subt - MSE Wall Maint.				\$19,998	\$19,998	<i>RMU-2 MSE Wall maintenance</i>	
(Subt: Assemb PCC-9.06.9)				\$19,998	\$19,998		

NOTE: Sheet to be added.

PCC-9.06: RMU-2 (6-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.06.10 Leachate System Mgmt						operation time = 8 hours/day x 5 days/week x 50 weeks/year = 2,000 hours	
Leachate Treatment	140624.2	gal	\$0.0178	\$2,503	\$0	140,624.2 gals estimated annual leachate volume based average prediction 0-30 years post closure	unit price derived from AWTS O&M model
Leachate Treatment - Perpetual Care	27921.3	gal	\$0.0178	\$0	\$497	27,921.3 perpetual care average years 31-60	Taken from RMU-2 2012 LeachGenModel
Leach Treat Syst. Capital Repl Cost	0	LS	\$17,642.00	\$0	\$0	\$3,087 K div by 25 year life = \$123,495/yr div by 7 facility units = \$17,642 each (costs allocated to other 7 units at the facility)	DEC estimate of AWTS capital replacement costs @ 25 yrs
						<i>The Cost for capital replacement of AWTS is already provided in the post closure estimate for 7 other units that generate leachate</i>	
Laborer	48.0	hours	\$39.00	\$1,872	\$1,872	4 hrs/mon x 12 mon/year = 48 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Technician	48.0	hours	\$38.00	\$1,824	\$1,824	4 hrs/mon x 12 mon/year = 48 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Primary Leachate VOC Samp & Analysis	21.0	sample	\$105.00	\$2,205	\$2,205	6 sumps x 1.05 per sump x 2.0 event/yr = 12.6 samples	Avg. of three lab quotes
Primary Leachate Metals Samp & Analysis	21.0	sample	\$188.00	\$3,948	\$3,948	6 sumps x 1.05 per sump x 2.0 event/yr = 12.6 samples	Avg. of three lab quotes
Primary Leachate PCBs Samp & Analysis	21.0	sample	\$133.33	\$2,800	\$2,800	6 sumps x 1.05 per sump x 2.0 event/yr = 12.6 samples	Avg. of three lab quotes
Secondary Leachate VOC Samp & Analysis	21.0	sample	\$105.00	\$2,205	\$2,205	6 sumps x 1.05 per sump x 2.0 event/yr = 12.6 samples	Avg. of three lab quotes
Secondary Leachate Metals Samp & Analysis	10.5	sample	\$188.00	\$1,974	\$1,974	6 sumps x 1.05 per sump = 1.0 event/yr = 6.3 samples	Avg. of three lab quotes
Secondary Leachate PP Organics Samp & Analysis	10.5	sample	\$633.33	\$6,650	\$6,650	6 sumps x 1.05 per sump = 1.0 event/yr = 6.3 samples	Avg. of three lab quotes
Electrical Costs - Pumps	384.6	KWH	\$0.086	\$33	\$33	343.7 hr/yr x 1.5 hp/hr x 0.746 kw/hp = 384.6 KWH	2004 DEC Rate * Implicit Deflator
Replacement of Main Pump T-150	0.2	pump	\$14,425.00	\$2,885	\$2,885	1 pump per 5 years = 0.2 pumps	30 hp pump, site experience
Replacement of Secondary Pump T-150	0.0	pump	\$14,425.00	\$0	\$0	1 pump per 5 years = 0.2 pumps	Pump not necessary in post closure
Replace Primary Sump Pumps	1.2	pump	\$1,382.00	\$1,658	\$1,658	6 pumps x 20.0% pu/yr = 1.2 pumps	1.5 hp submersible pump, site experience
Replace Secondary Sump Pumps	0.9	pump	\$850.00	\$765	\$765	6 pumps x 15.0% pu/yr = 0.9 pumps	4" subm pump, 0.5 hp, , site experience
Replacement of Pump Dischg Hose	2.1	hose	\$211.54	\$444	\$444	2.1 pumps x 1 per pump = 2.1 hoses	DEC 2004 rate * deflator (2004-2010)
Disposal of Pumps/Hoses	21.0	CF	\$12.45	\$261	\$261	2.1 pu/hos @ 10 CF/pump = 21 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replacement of Piping - 2"/4"	4.8	LF	\$53.25	\$256	\$256	960 LF @ 0.5% per year = 4.8 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 2"/4"	1.6	CF	\$12.45	\$20	\$20	4.8 LF @ 0.33 CF/LF = 1.6 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Replace Piping - 4"/8" & 6"/10"	31.4	LF	\$73.50	\$2,308	\$2,308	6,280 LF @ 0.5% per year = 31.4 LF/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Piping - 4"/8" & 6"/10"	15.7	CF	\$12.45	\$195	\$195	31.4 LF @ 0.50 LF/drum = 15.7 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Pipe Cleaning - 8" diameter	4205.0	LF diameter	\$2.14	\$8,999	\$8,999	4,205 LF @ 1.0 events/yr = 4,205 LF	DEC 2004 rate * deflator (2004-2010)
Subt - Leachate Coll Syst Mgmt				\$43,806	\$41,800	<i>annual O&M costs plus capital replacement of treatment system, pumps, and piping</i>	
PCC-9.06.11 AWTS Operation						Shift operation of the AWTS for 12 months	no DEC estimate for this activity: DEC Estimate included in unit rat
Subt - AWTS Operation				\$0	\$0	AWTS Operation - operation of AWTS for twelve (12) months during post closure or perpetual care of the site	
						<i>The Cost for operation of AWTS is already provided in the post closure estimate for 7 other units that generate leachate</i>	
PCC-9.06.12 Site Waters Treatment							
Subt - Site Waters Treatment				\$0	\$0	<i>The Cost for treatment of of site waters is already provided in the post closure estimate for 7 other units</i>	Labor included in PCC-1.7a
PCC-9.06.13 Batch Tank Qualification						2 Batch Qualification tanks prior to discharge to facultative ponds	To Meet LDR requirements
Subt - Batch Tank Qualification				\$0	\$0	<i>The Cost for tank qualifications is already provided in the post closure estimate for 7 other units</i>	Samples collected by lab technician
PCC-9.06.14 Pond Sampling & Analysis (Outfall 001)						production rate = 2.0 hours per composite sample for a three-person crew	SPDES PreQual Sampling of Outfall 001 prior to discharge
Batch Sampling Events						1 events @ 3 samp/evnt= 3 samples	sampling & analysis prior to pond discharge
Subt - Pond Sampling & Analysis				\$0	\$0	<i>The Cost for pond qualifications is already provided in the post closure estimate for 7 other units</i>	
PCC-9.06.15 Pond S&A Certification & Report						one event per year for divers to check discharge pipe; one predischarge qualification report	
Subt - S&A Cert'n & Report				\$0	\$0	<i>diver(s) to check discharge pipe; also engineer's predischarge qualification report</i>	Fac Pond 8 out of service empty

NOTE: Sheet to be added.

PCC-9.06: RMU-2 (6-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.06.16 Empty (Pump) FAC Pond to Outfall 001						prod'n rate = 960,000 gals/day = 60,000 gals/hr = 1,000 gals/min per facility est @ 16 hrs/day O&M	Treated wastewater from all 7 units
<i>FAC Pond 1/2 Inventory in Gallons</i>		<i>gals</i>	<i>n/a</i>			<i>45.8 total hours req'd to pump</i>	<i>& site waters</i>
Subtotal - Pump FAC Pond 1/2				\$0	\$0	<i>transfer contents of FAC Pond to discharge pipe to Niagara River (3,000 ft). The Cost for discharge to outfall is already provided in the post closure estimate for 7 other units</i>	
<i>(Subt: Assemb PCC-9.06.10 thru 9.06.16)</i>				\$43,806	\$41,800	<i>RMU-2 share of annual O&M and capital costs for leachate collection & treatment: provided in post closure cost estimate for 7 other units at facility</i>	

PCC-9.06.17 N/A							
Subt - N/A				\$0	\$0		
PCC-9.06.18 N/A							
Subt - N/A				\$0	\$0		
PCC-9.06.19 N/A							
Subt - N/A				\$0	\$0		
<i>(Subt: Assemb PCC-9.06.17 thru 9.06.19)</i>				\$0	\$0	<i>RMU-2 share of annual leachate transport costs - n/a, as leachate pumped directly to the AWTS</i>	

PCC-9.06.20 Tank Assessments						sixteen (16) tanks requiring internal & external inspections once every five years by 1 PE + 2 Techs	
<i>Internal & External Inspections</i>						<i>16 tanks @ 5 yr inspect = 3.2 tnks/yr @ 7 areas = 0.5 tnks/yr</i>	
Subt - Tank Assessments				\$0	\$0	<i>inspection of 16 tanks</i>	
						<i>The Cost for tank assessment is already provided in the post closure estimate for 7 other units</i>	
PCC-9.06.21 Tank Assessments						thirty (32) tanks requiring only external inspections once every five years by 1 PE	
<i>External Only Inspections</i>						<i>30 tanks @ 5 yr inspect = 6.0 tnks/yr @ 7 areas = 0.9 tnks/yr</i>	
Subt - Tank Assessments				\$0	\$0	<i>inspection of 32 tanks</i>	
						<i>The Cost for tank assessment is already provided in the post closure estimate for 7 other units</i>	
<i>(Subt: Assemb PCC-9.06.20 thru 9.06.21)</i>				\$0	\$0	<i>RMU-2 share of annual tank assessment costs: post-closure & perpetual care frequency are equal</i>	

PCC-9.06.22 Replace Mon Well Pump							
Replace Mon Well Pumps	0.725	pump	\$900.00	\$653	\$653	29 pumps @ 2.5% per year = 0.725 pumps/yr	Site experience third party costs
Technician	2.0	Hour	\$38.00	\$76	\$76	2 hours per year	third party labor costs
Disposal of Pumps	0.725	CF	\$12.45	\$9	\$9	0.725 pumps @ 1.0 CF/pump = 0.725 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Concrete Pads	0.725	pad	\$131.50	\$95	\$95	29 pads @ 2.5% per year = 0.725 pads/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Well Surface Concrete	1.45	CF	\$12.45	\$18	\$18	0.725 pads @ 2.0 CF/pad = 1.45 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Repair Mon Well Covers	0.725	each	\$371.63	\$269	\$269	29 covers @ 2.5% per year = 0.725 covers/yr	DEC 2004 rate * deflator (2004-2010)
Disposal of Mon Well Covers	0.3625	CF	\$12.45	\$5	\$5	0.725 covers @ 0.5 CF/cover = 0.3625 CF	DEC 2004 closure rate for large debris * deflator (2004-2010)
Subt - Replace Mon Well Pumps				\$1,125	\$1,125	<i>monitoring well pump maintenance and replacement</i>	
<i>(Subt: Assemb PCC-9.06.22)</i>				\$1,125	\$1,125	<i>RMU-2 mon well pump maintenance & replacement: post-closure & perpetual care frequency are equal</i>	

NOTE: Sheet to be added.

PCC-9.06: RMU-2 (6-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
PCC-9.06.23 Drainage Ditch Repair						ditches estimated to be 10 feet in width	
<i>RMU-2 Drainage Ditches</i>						Perimeter Ditch + Drainage Tile System = 6,500 + 16,400 = 22,900 LF	drainage ditches specific to RMU-2 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	drainage ditches in non-specific areas of facility
<i>RMU-2 Downchutes</i>						1370 LF 26" pipe 800 LF 6" pipe	
Drainage Ditch Repair	0.053	acre	\$5,698.00	\$302	\$302	22,900 LF x 10 ft/LF = 5.3 acres @ 1.0% per year = 0.053 acres	unit price based upon \$5,698/acre (RMU-1 Assembly 14.20)
Downchute Pipe Cleaning 26"	68.5	LF	\$2.14	\$147	\$147	1,370 LF x 5.0% per year = 68.5 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Downchute Pipe Cleaning 6"	40	LF	\$2.14	\$86	\$86	800 LF x 5.0% per year = 40 LF	DEC 2004 rate * deflator (2004-2010) for cleaning 8" dia pipe
Subt - Drainage Ditch Repair				\$534	\$534	stormwater drainage ditch repair	
						The cost of repair of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.06.24 Drainage Ditch Cleaning						ditches estimated to be 10 feet wide; sediment estimated to be 4 inches deep.	
<i>RMU-2 Drainage Ditches</i>						15500 LF	drainage ditches specific to RMU-2 unit
<i>Facility-wide Drainage Ditches</i>						22600 LF div by 8 units = 2825 LF 0 LF for RMU-2	drainage ditches in non-specific areas of facility
Drainage Ditch Sediment Cleaning	28.3	CY	\$2.38	\$67	\$67	22,900 LF x 10.0 ft/LF x 0.333 feet (4") = 2827 CY @ 1%/yr = 28.3 CY	unit price based upon FAC Ponds 1/2 excavation (6.11)
Transportation of Ditch Sediment	9.6	miles	\$3.25	\$31	\$31	38.2 tons @ 20 tons/load = 1.9 loads @ 5 miles per load = 9.6 miles	unit price based upon FAC Ponds 1/2 transportation (6.13)
Disposal of Ditch Sediment	38.2	ton	\$35.00	\$1,337	\$1,337	28.3 CY @ 1.35 ton/CY = 38.2 tons	unit price based upon FAC Ponds 1/2 disposal (6.14)
Subt - Drainage Ditch Cleaning				\$1,436	\$1,436	stormwater drainage ditch cleaning	
						The cost of cleaning of facility-wide ditches is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.06.25 Basin Cleaning						sediment estimated to be 4 inches deep.	
<i>Basin No. 1</i>						140625 SF div by 8 units = 17578 SF	
<i>Basin No. 2</i>						150000 SF div by 8 units = 18750 SF	
Subt--Basin Cleaning				\$0	\$0	facility stormwater basin cleaning	
						The cost of cleaning of facility basins is provided in post-closure estimate for 8 other units at the facility.	
PCC-9.06.26 Culvert Maint/Replace						avg culvert = 25' (SLF 11) & 40' (sitewide); various diameters	
<i>RMU-2 Culverts</i>						6 culverts x 40 feet long = 240 LF	culverts specific to RMU-2 unit
<i>Facility-wide Culverts</i>						20 culverts x 40 feet long = 800 LF div by 8 units = 0 LF for RMU-2	culverts in non-specific areas of facility
Culvert Cleaning - 18" diameter avg	240	LF	\$2.14	\$513	\$513	240 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culvert - 18" diam avg (RMU-2)	80	LF	\$11.61	\$929	\$929	240.0 LF @ 2 culvert/yr = 80 LF	DEC 2004 rate * deflator (2004-2010)
Repl Culv't - 18" diam avg (sitewide)		LF	\$22.35	\$0	\$0	40.0 LF @ 1.00 culvert/yr = 40 LF 0 LF for RMU-2	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Ditch Excavation	60	CY	\$2.96	\$178	\$178	80.0 LF x 0.75 CY/LF = 60 CY	DEC 2004 rate * deflator (2004-2010)
Replace Culvert - Bkfill/Compaction	60	CY	\$3.86	\$232	\$232	60 CY	DEC 2004 rate * deflator (2004-2010)
Subt - Culvert Maint/Replacement				\$1,851	\$1,851	culvert maintenance and replacement	
						The cost of cleaning of maintaining facility-wide drainage is provided in post-closure estimate for 8 other units at the facility.	
(Subt: Assemb PCC-9.06.23 thru 9.06.26)				\$3,821	\$3,821	RMU-2 storm drainage maintenance & replacement: post-closure & perpetual care frequency are equal	

NOTE: Sheet to be added.

PCC-9.06: RMU-2 (6-Cells)

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Annual Cost Post Closure Period	2011 CWM Extended Price - Annual Cost Perpetual Care	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
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PCC-9.06.27 Road Maint/Replace							
						gravel roads = 15 feet wide; asphalt roads = 20 feet wide	
RMU-2 Gravel Roads						6500 LF x 15 feet wide/9 SF/SY = 10,833 SY @ 2% per year = 216.6 SY	
Facility-wide Asphalt Roads						21120 LF x 20 feet wide = 422400 SF @ 1% per year = 0 SF for RMU-2	asphalt roads in non-specific areas of facility
RMU-2 Gravel Road Repair	216.6	SY	\$3.12	\$676	\$676	216.6 SY	DEC 2004 rate * deflator (2004-2010)
Facility-wide Asphalt Roads		SF	\$1.35	\$0	\$0	4,224.0 SF div by 8 units = 528.0 SF 0 SF for RMU-2	DEC 2004 rate * deflator (2004-2010)
Subt - Road Maint/Replacement				\$676	\$676	road maintenance and replacement	
						The cost of cleaning of maintaining facility-wide roads is provided in post-closure estimate for 8 other units at the facility.	
(Subt: Assemb PCC-9.06.27)				\$676	\$676	RMU-2 road maintenance & replacement	

Total Non-Super hours 259.6

PCC-9.06.28 PPE Use/H&S Planning							
						Level C @ 10%; Mod Level C @ 15%; Level D @ 75% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	24.4	days	\$0.00	\$0	\$0	259.6 hours @ 8 hr/day = 32.5 days @ 75% "D" days = 24.4 days	75% of non-supv hrs in Level D (used facility price: \$0/day)
PPE Usage - Mod Level C	4.9	days	\$9.00	\$44	\$44	259.6 hours @ 8 hr/day = 32.5 days @ 15% "C" days = 4.9 days	15% of non-supv hrs in Mod Level C (used facility price: \$9/day)
PPE Usage - Level C	3.2	days	\$25.00	\$80	\$80	259.6 hours @ 8 hr/day = 32.5 days @ 10% "C" days = 3.2 days	10% of non-supv hrs in Level C (used facility price: \$25/day)
Health & Safety Officer	6.5	hours	\$75.00	\$488	\$488	259.6 hours @ 2.5% hr/hr = 6.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				\$612	\$612		
PCC-9.06.29 Supervision							
Foreman	0	hours	\$65.00	\$0	\$0	Included in Post-Closure cost estimates for other 7-units at the facility that generate leachate	loaded labor rate: loaded labor rate 2011 3rd party quote
Site Project Manager	0	hours	\$75.00	\$0	\$0	Included in Gen'l Contractor G&A/Home Office indirect costs	loaded labor rate: loaded labor rate 2011 3rd party quote
Subtotal - Supervision				\$0	\$0		
(Subt: Assemb PCC-9.06.28 thru 9.06.29)				\$612	\$612	supervision, health & safety, and certification	

PCC 9.06 (6-Cells): RMU-2 Direct Cost				\$96,523	\$82,798		
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CLOSURE & POST-CLOSURE COST ESTIMATE
UNIT RATES

Unit Rates

Closure & Post-Closure Cost Estimates

CWM Chemical Services, LLC, Model City, New York

Labor	DEC - 2004		CWM 2011		Reference
	UOM	Price	UOM	Price	
Laborer	hours	\$39.30	hours	\$39.00	ESG, Inc. quote
Maintenance Laborer			hours	\$45.00	ESG, Inc. quote
Driver	hours	\$40.30	hours	\$45.00	ESG, Inc. quote
Equipment Operator - Medium	hours	\$50.70	hours	\$45.00	ESG, Inc. quote
Equipment Operator - Heavy (crane)	hours	\$52.40	hours	\$50.00	ESG, Inc. quote
Technician/Sampler	hours	\$37.20	hours	\$38.00	ESG, Inc. quote
Sr. Technician/Sampler	hours	\$42.50	hours	\$50.00	ESG, Inc. quote
Chemist	hours	\$42.21	hours	\$75.00	ESG, Inc. quote
AWTS Technician			hours	\$65.00	ESG, Inc. quote
AWTS Supervisor			hours	\$85.00	ESG, Inc. quote
Foreman	hours	\$55.45	hours	\$65.00	ESG, Inc. quote
Site Project Manager	hours	\$59.72	hours	\$75.00	ESG, Inc. quote
AWTS Engineer			hours	\$90.00	ESG, Inc. quote
Safety Engineer	hours	\$57.82	hours	\$75.00	ESG, Inc. quote
Certification Engineer	hours	\$91.55	hours	\$130.00	ESG, Inc. quote
Certification Clerical	hours	\$33.65	hours	\$45.00	ESG, Inc. quote

Equipment Units	DEC - 2004		CWM 2011		Reference
	UOM	Price	UOM	Price	
Forklift (12' lift, 2WD, gas)	hours	\$17.30	hour	\$22.21	RSM/HC p. 470 (line item 01 54 33 40 2020)
Road Tractor (330 HP)	hours	\$30.05	hour	\$32.45	RSM/HC p. 472 (line item 01 54 33 40 7410)
Flatbed Trailer (40 ton)	hours	\$17.85	hour	\$6.26	RSM/HC p. 472 (line item 01 54 33 40 6600)
Tank Trailer (5K gal - 6K gal)	hours	\$18.00	hour	\$6.31	RSM/HC p. 472 (line item 01 54 33 40 6900)
Rolloff (30 CY)	hours	\$16.63	hour	\$19.02	dumpster RSM/BC p. 42 (02225-730-0800)
Dump Trailer (20 CY)	hours	\$14.95	hour	\$5.20	RSM/HC p. 469 (line item 01 54 33 20 5400)
Small Loader (shovel/backhoe bucket 0.5 CY)	hours	\$19.10	hour	\$2.12	RSM/HC p. 468 (line item 01 54 33 20 3860)
Medium Loader (1 CY articulated, 70 HP)	hours	\$25.28	hour	\$14.39	RSM/HC p. 468 (line item 01 54 33 20 4610)
Large Loader (articulated, 185HP)	hours	\$39.12	hour	\$30.03	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane (80-ton Truck mounted, hydraulic)	hours	\$81.80	hour	\$86.31	RSM/HC p. 474 (line item 01 54 33 60 2700)
Excavator (3/4 CY bucket)	hours	\$65.50	hour	\$29.98	RSM/HC p. 466 (line item 01 54 33 20 0140)
Medium Excavator (2.5 CY bucket)			hour	\$84.09	RSM/HC p. 467 (line item 01 54 33 20 0320)
Large Excavator (4.5 CY bucket)			hour	\$135.93	RSM/HC p. 477 (line item 01 54 33 20 0330)
Hydraulic Hammer (11000 ft-lb)	hours	\$18.15	hour	\$20.59	RSM/HC p. 467 (line item 01 54 33 20 0349)
Claw Attachment	hours	\$16.15	hour	\$2.47	RSM/HC p. 477 (line item 01 54 33 20 0345)
Shears Attachment	hours	\$30.00	hour	\$34.40	2004 DEC Rate * Implicit Deflator
Welding Equipment (electric, 300 amp)	hours	\$8.04	hour	\$5.41	RSM/HC p. 473 (line item 01 54 33 40 7800)
Roadway Sweeper	hours	\$55.63	hour	\$32.25	RSM/HC p. 473 (line item 01 54 33 50 3400)
Grader (40,000lb Grader)	hours	\$50.00	hour	\$45.93	RSM/HC p. 467 (line item 01 54 33 20 1920)
Dozer (200 hp)	hours	\$110.00	hour	\$56.38	RSM/HC p. 468 (line item 01 54 33 20 4260)
Backhoe (1 CY)	hours	\$30.50	hour	\$19.18	RSM/HC p. 467 (line item 01 54 33 20 0460)
Skid-steer Loader, Wheeled (30 hp loader)	hours	\$19.10	hour	\$8.23	RSM/HC p. 469 (line item 01 54 33 20 4880)

Unit Rates

Closure & Post-Closure Cost Estimates

CWM Chemical Services, LLC, Model City, New York

Sheepsfoot Vibratory Roller (340 hp)	hours	\$126.50	hour	\$75.60	RSM/HC p. 468 (line item 01 54 33 20 3300)
Smooth Drum Roller (125 hp)	hours	\$41.65	hour	\$25.70	RSM/HC p. 468 (line item 01 54 33 20 3320)
Dump Truck (12-ton load)	hours	\$38.25	hour	\$24.78	RSM/HC p. 469 (line item 01 54 33 20 5250)
Pickup Truck (3/4 ton, 2WD)	hours	\$9.25	hour	\$10.45	RSM/HC p. 472 (line item 01 54 33 40 7100)
Tool Van	hours	\$14.25	hour	\$0.00	Not Used
Pumps 6" (Fac Pond discharge) (6" dia, 30HP)	hours	\$8.50	hour	\$12.34	RSM/HC p. 475 (line item 01 54 33 70 1300)
Discharge Piping (8" dia) (Fac Pond discharge)	LF	\$0.015	LF	\$0.01100	RSM/HC p. 475 (line item 01 54 33 70 0300)
Pumping Equipment (bulk load to tankers)	hours	\$62.50	hour	\$71.67	2004 DEC Rate * Implicit Deflator
Drum Shredder	hours	\$287.50	hour	\$329.70	2004 DEC Rate * Implicit Deflator
Mixing Equipment (Stabilization)	hours	\$118.85	hour	\$136.29	2004 DEC Rate * Implicit Deflator
Pressure Washer	hours	\$8.60	hour	\$4.04	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum (55-gal wet/dry)	hours	\$18.75	hour	\$3.41	RSM/HC p. 473 (line item 01 54 33 40 7800)
Pressure/Vacuum Sweeper			hour	\$22.94	2001 Rate * Implicit Deflator
Steam Cleaner (200 gpm) w/ FUEL			hour	\$18.92	RSM/HC p. 472 (line item 01 54 33 40 6310)
Air Compressor (sampling)			hour	\$2.40	RSM/HC p. 469 (line item 01 54 33 40 0196)
Sampling Supplies	hours	\$25.00		\$25.00	DEC 2004 estimate
Reconditioned drums (lab pack w/ packing)	each	\$100.00		\$114.68	2004 DEC Rate * Implicit Deflator
Replacement of Pump Dischg Hose	hose	\$185.00	hose	\$212.15	2004 DEC Rate * Implicit Deflator
Replace Piping - 6" Steel	LF	\$78.23	LF	\$89.71	2004 DEC Rate * Implicit Deflator
Pipe Cleaning - 8" diameter	LF	\$1.87	LF	\$2.14	2004 DEC Rate * Implicit Deflator
Replace Piping - 3"	LF	\$11.73	LF	\$13.45	2004 DEC Rate * Implicit Deflator
Goulds Submersible SLF-11, 12, RMU1 Secondary (0.5 hp)			each	\$850.00	CWM actual 2011 costs
Goulds Submersible SLF1-6, SLF7, 10, 11, 12, RMU-1 (1.5 hp)			each	\$1,382.40	CWM actual 2011 costs
Goulds Submersible SLF 1-6 (2.0 hp)			each	\$1,490.00	CWM actual 2011 costs
Godwin Submersible RMU-1 active cells (6.0 hp)			each	\$5,400.00	CWM actual 2011 costs
Godwin Submersible T-160 (30.0 hp)			each	\$14,425.00	CWM actual 2011 costs
QED SLF 1-6 (air operated)			each	\$2,950.00	CWM actual 2011 costs
Grunfos GWES & SLF 1-6 (2.0 hp)			each	\$1,490.00	CWM actual 2011 costs
IR Centrifugal SLF 12 OWS (15 hp)			each	\$12,000.00	CWM actual 2011 costs
IR Centrifugal SLF 12 (20 hp)			each	\$12,000.00	CWM actual 2011 costs
QED Air Lift (gw mon wells)			each	\$900.00	CWM actual 2011 costs

Kiln Dust/Additives/Encap Cont'rs	DEC		CWM 2011		Reference
	UOM	Price	UOM	Price	
Cement Kiln Dust (not inc. delivery)	tons	\$6.85			Included in combined rate
Cement Kiln Dust - Delivery Cost	loads	\$300.00			for cost of material & delivery below
Portland cement	tons	\$82.00			
Cement Kiln Dust - Inc. Delivery			tons	\$48.00	CWM actual 2011 costs
Stabilization Costs			tons	\$25.00	CWM actual 2011 costs inc. labor & equipment
Absorbent Additive	CY	\$33.75		\$38.70	2004 DEC Rate * Implicit Deflator
Encapsulation Container - Macro Box	units	\$850.00	units	\$1,000.00	CWM actual 2011 costs
Dismantle/Cut/Load Ductwork	LF	\$1.87	LF	\$2.14	2004 DEC Rate * Implicit Deflator
Dismantle/Cut/Load Baghouses	Each	\$6,156.00	Each	\$7,340.17	2001 Rate * Implicit Deflator
Grout Cracks/Joints - Conc Cover	SF	\$7.65	SF	\$8.77	2004 DEC Rate * Implicit Deflator
Patch Concrete - Concrete Cover	SF	\$2.18	SF	\$2.50	2004 DEC Rate * Implicit Deflator
Seal Cracks - Asphalt Cover	SY	\$5.60	SY	\$6.42	2004 DEC Rate * Implicit Deflator
Replace Asphalt Cover	SF	\$1.18	SF	\$1.35	2004 DEC Rate * Implicit Deflator

Unit Rates

**Closure & Post-Closure Cost Estimates
CWM Chemical Services, LLC, Model City, New York**

Replace 80-mil HDPE	SF	\$2.49	SF	\$2.86	2004 DEC Rate * Implicit Deflator
Perimeter Fence	LF	\$38.00	LF	\$20.000	Site Experience 2010 Rate
Electrical Costs - Pumps	KWH	\$0.075		\$0.086	2004 DEC Rate * Implicit Deflator

Other Direct Costs	DEC		CWM 2011		Reference
	UOM	Price	UOM	Price	
PPE Usage - Level D			days	\$0.00	Standard Work Clothes - Site Experience
PPE Usage - Modified Level C	days	\$9.00	days	\$9.00	Tyvek, gloves, overboots - Site Experience
PPE Usage - Level C	days	\$25.00	days	\$25.00	Respirator, Tyvek, gloves, overboots - Site Experience
Decon Equipment (52 SF/hr)	hours	\$105.95	hours	\$121.50	2004 DEC Rate * Implicit Deflator
Decon Water Disposal - Onsite	gals	\$0.1042			See AWT-2010 table
Aqueous Treatment - Onsite - Mild - DMB	gals	\$0.1042			See AWT-2010 table
Aq Treatment - Onsite-Highly contaminated	gals	\$1.3930			See AWT-2010 table
Diver Inspection SPDES			each	\$4,000.00	Based on 2010 site rate of \$3,500
Lab'r/EO/loader to handle bio-media	hours	\$115.25	hours	\$132.17	2004 DEC Rate * Implicit Deflator
Dismantle Tank/Return to Manuf. Fac Tank 3	each	\$5,500.00	each	\$6,307.28	2004 DEC Rate * Implicit Deflator
Labpacks (55-gal recond. steel)	each	\$100.00	each	\$114.68	2004 DEC Rate * Implicit Deflator

Soil Borrow - Material & Delivery - Fac Ponds	DEC		CWM 2011		Reference
	UOM	Price	UOM	Price	
Soil Borrow - Material & delivery	CY	\$8.85			See RMU-1 Closure Unit Rates
Offsite Borrow - Transportation Cost	miles	\$1.60			See RMU-1 Closure Unit Rates
Offsite Borrow - Material Cost	CY	\$6.85			See RMU-1 Closure Unit Rates

Fac Ponds	DEC		CWM 2011		Reference
	UOM	Price	UOM	Price	
Seed/Fertilize	MSF	\$64.50	MSF	\$73.97	2004 DEC Rate * Implicit Deflator
Seed/Vegetation					Included above
Fertilize					Included above

Cost References:

"RSM/HC" refers to the RSMMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
 "RSM/UP" refers to the RSMMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
 "RSM/BC" refers to the RSMMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

Rate Adjustment for inflation:

2011 Rate = 110.992 (2010 GDP) ÷ 96.786 (2004 GDP) = 1.147
 2011 Rate = 110.992 (2010 GDP) ÷ 90.727 (2001 GDP) = 1.223
 Last Revised on January 23, 2012

**Analytical Cost Unit Rates
Closure & Post-Closure Cost Estimates
CWM Chemical Services, LLC, Model City, New York**

Outfall 001	DEC 2004		CWM 2001		CWM 2011 (2)		Frequency	Reference
	UOM	Price	UOM	Price	UOM	Price		
Laboratory - SPDES Prequalification								
Surfactants (MBAS)	samp	\$36.50			samp	\$28.33	3/event	Avg. of three lab quotes
BOD-5	samp	\$30.00	samp	\$14.00	samp	\$30.00	3/event	Avg. of three lab quotes
Total Suspended Solids (TSS)	samp	\$10.35	samp	\$9.00	samp	\$13.33	3/event	Avg. of three lab quotes
Settleable Solids	samp	\$13.10	samp	\$5.00	samp	\$13.33	3/event	Avg. of three lab quotes
Ammonia (NH ₃)	samp	\$27.00	samp	\$9.00	samp	\$22.67	3/event	Avg. of three lab quotes
Phosphorous					samp	\$20.00	3/event	Avg. of three lab quotes
TON (TKN-NH3)					samp	\$41.67	3/event	Avg. of three lab quotes
Cyanide			samp	\$139.00	samp	\$35.00	3/event	Avg. of three lab quotes
Alkalinity as CaCO ₃					samp	\$15.33	3/event	Avg. of three lab quotes
TOC	samp	\$23.50			samp	\$31.67	3/event	Avg. of three lab quotes
Semi-volatile organics (625)	samp	\$472.50	samp	\$193.00	samp	\$208.33	3/event	Avg. of three lab quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))	samp	\$224.66	samp	\$65.00	samp	\$133.33	3/event	Avg. of three lab quotes
VOCs (624)	samp	\$203.56	samp	\$96.00	samp	\$105.00	3/event	Avg. of three lab quotes
Oil & Grease (1631)			samp	\$38.00	samp	\$21.67	3/event	Avg. of three lab quotes
Sulfates	samp	\$17.40			samp	\$21.00	3/event	Avg. of three lab quotes
Sulfides					samp	\$25.00	3/event	Avg. of three lab quotes
total Phenols			samp	\$139.00	samp	\$26.67	3/event	Avg. of three lab quotes
Priority Pollutant Metals (200.7) *	samp	\$307.99			samp	\$188.00	3/event	Avg. of three lab quotes
Mercury (245.1)					samp	\$25.00	3/event	Avg. of three lab quotes
Mercury (1631B)					samp	\$111.67	3/event	Avg. of three lab quotes
Ca/Mg Hardness (200.7)					samp	\$24.33	3/event	Avg. of three lab quotes
Specific Conductance	samp	\$11.23	samp	\$10.00	samp	\$13.33	3/event	Avg. of three lab quotes
pH	samp	\$6.15	samp	\$10.00	samp	\$10.67	3/event	Avg. of three lab quotes
Total Dissolved solids (TDS)			samp	\$9.00	samp	\$15.00	3/event	Avg. of three lab quotes
TDVS (total dissolved volatile solids)					samp	\$23.33	3/event	Avg. of three lab quotes
Fluoride					samp	\$19.33	3/event	Avg. of three lab quotes
Chlorine					samp	\$19.33	3/event	Avg. of three lab quotes
Residual Chlorine					samp	\$15.00	3/event	Avg. of two lab quotes
NO ₂					samp	\$21.00	3/event	Avg. of three lab quotes
NO ₃					samp	\$19.33	3/event	Avg. of three lab quotes
Temperature	samp	\$10.87			samp	field **	3/event	Avg. of three lab quotes
Dissolved Oxygen	samp	\$25.72	samp	\$10.00	samp	field **	3/event	Avg. of three lab quotes
Sampling Equipment	hours	\$25.00			samp	\$25.00		
Sampling Supplies	samp	\$25.00			samp	\$25.00		
Acute Toxicity/Bioassay	samp	\$2,000.00	samp	\$2,000.00		\$3,800.00	one/event	Actual 2010 costs

Note: Analyses based on current approved SPDES Permit

**Analytical Cost Unit Rates
Closure & Post-Closure Cost Estimates
CWM Chemical Services, LLC, Model City, New York**

* Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, Ag, Sn, Ti, V, Zn, Se, Sr

** Field measurement

(1) Third Part Contract laboratory rates for 2011. Average of 3 quotes.

OUTFALLS 002, 003, 004	DEC		CWM 2001		CWM 2011 (2)		Frequency	Reference
	UOM	Price	UOM	Price	UOM	Price		
Laboratory - SPDES								
pH			samp	\$10.00	samp	\$10.67	weekly	Avg. of three lab quotes
Specific Conductance			samp	\$10.00	samp	\$13.33	weekly	Avg. of three lab quotes
Total Suspended Solids (TSS)			samp		samp	\$13.33	weekly	Avg. of three lab quotes
Total Dissolved solids			samp	\$9.00	samp	\$15.00	weekly	Avg. of three lab quotes
Settleable Solids			samp	\$5.00	samp	\$13.33	daily	Avg. of three lab quotes
BOD-5			samp	\$14.00	samp	\$31.67	monthly	Avg. of three lab quotes
Dissolved Oxygen			samp	\$10.00	samp	\$17.50	monthly	Avg. of two lab quotes
Ammonia (NH ₃)			samp	\$9.00	samp	\$22.67	monthly	Avg. of three lab quotes
VOCs (624)			samp	\$96.00	samp	\$105.00	2/month	Avg. of three lab quotes
Oil & Grease (1631)			samp	\$38.00	samp	\$40.00	2/month	Avg. of three lab quotes
Copper			samp	\$5.00	samp	\$17.67	monthly	Avg. of three lab quotes
Zinc			samp	\$5.00	samp	\$17.67	monthly	Avg. of three lab quotes
Phenols			samp	\$12.00	samp	\$26.67	monthly	Avg. of three lab quotes
Pesticides/PCBs (608) (MDL 65 PPT (ng/l))			samp	\$56.00	samp	\$133.33	weekly	Avg. of three lab quotes
2-Chloroethyl vinyl ether					samp	\$86.67	2/month	Avg. of three lab quotes
Dichlorodifluoromethane					samp	\$75.00	2/month	Avg. of two lab quotes ****
Methylene chloride					samp	\$75.00	2/month	Avg. of two lab quotes ****

Note: Analyses based on current approved SPDES Permit

Laboratory- Other	DEC		CWM 2001		CWM 2011 (2)		Reference
	UOM	Price	UOM	Price	UOM	Price	
Chemical Characterization (for leachate primaries)**			samp	\$1,200.00	samp	\$181.67	Avg. of three lab quotes
Priority Poll'nt Organics soil/Organic Priority Pollutants (OPP)*	samp	\$472.50	samp	\$345.00	samp	\$615.00	Avg. of three lab quotes
Pest/PCBs Soil	samp	\$224.66	samp	\$56.00	samp	\$131.67	Avg. of three lab quotes
PCB Analysis/Wipe Test (SW 8081/8082)	samp	\$167.13	samp	\$70.00	samp	\$83.33	Avg. of three lab quotes
Priority Pollutant Acid Extractable (Base Neutral)			samp	\$193.00	samp	\$195.00	Avg. of three lab quotes
Priority Pollutant VOCs	samp	\$203.56	samp	\$96.00	samp	\$105.00	Avg. of three lab quotes
VOC Analysis (EPA 624)	samp	\$203.56	samp	\$96.00	samp	\$105.00	Avg. of three lab quotes
VOC Site Specific (VOCs)			samp	\$96.00	samp	\$105.00	Avg. of three lab quotes
TCLP/Priority Pollutant Metals ***			samp	\$108.00	samp	\$160.00	Avg. of three lab quotes
TCLP (Metals/VOCs/Semi-VOCs)	samp	\$661.00	samp	\$239.00	samp	\$446.67	Avg. of three lab quotes

**Analytical Cost Unit Rates
 Closure & Post-Closure Cost Estimates
 CWM Chemical Services, LLC, Model City, New York**

TCLP (RCRA EPA 1311)	samp	\$585.00	samp	\$239.00	samp	\$348.33	Avg. of three lab quotes
TCLP VOCs			samp	\$131.00	samp	\$145.00	Avg. of three lab quotes
Total Priority Pollutants (TPP)			samp	\$472.00	samp	\$633.33	Avg. of three lab quotes
Priority Pollutant Metals soil	samp	\$307.99	samp	\$108.00	samp	\$158.33	Avg. of three lab quotes
Toxic Metals, Cyanide, Phenols (Metals)			samp	\$139.00	samp	\$155.00	Avg. of three lab quotes
6NYCRR Part 371, Appendix 33 Constituents/USEPA 40CFR Part 264 Append IX (soil)	samp	\$1,200.00	samp	\$1,200.00	samp	\$1,226.67	Avg. of three lab quotes

* OPP analysis includes Priority Pollutant Volatile Organic, PCB, Pesticides, SVOCs, and Priority Pollutant metals, cyanide.

** Chemical Characterization includes, but is not limited to, analysis for PCBs and VOCs.

*** Ag, As, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Tl, Zn

**** - Tested in one 624 run.

**Transportation & Disposal Unit Rates
Closure & Post-Closure Cost Estimates
CWM Chemical Services, LLC, Model City, New York**

Waste Type	Disposal Method	CWM Assumed Disposal Site	UOM	DEC Estimate				CWM Estimate			
				2004 Per Unit Cost	NYS Deflator: 2010	2010 Per Unit Cost	Reference	2001 Per unit cost	2011 Per unit cost	Reference	
Lab Packs (<55 gal)	Incineration	WTI, OH	pound	\$2.43	1.147	\$2.79	avg of 3 unit prices	\$1.50	\$1.91	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing	
Misc. Labpacks - Landfill off-site	Landfill		Lab Pack	\$292.00	1.147	\$334.92	avg of 3 unit prices		\$341.00	DEC 2004 Estimate accounting for inflation & CWM 2011 cost comparison industry pricing based on current market conditions	
Bulk Non-PCB Org Liquids	Incineration	Veolia ES Technical Solutions (Veolia) Port Arthur, TX Treatment Complex	pound		1.147	\$0.00			\$0.35	HWC/ETC 2004 & Current third party rate	
			gal	\$3.55	1.147	\$4.07	avg of 3 unit prices	\$2.80	\$3.15	HWC/ETC 2004 & Current third party rate	
PCB organic phase liquids	Incineration	Veolia ES Technical Solutions (Veolia) Port Arthur, TX Treatment Complex	pound		1.147	\$0.00			\$0.28	\$0.52	HWC/ETC 2004 & Current third party rate
			gal	\$4.88	1.147	\$5.60	avg of 5 unit prices	\$2.80	\$4.68	HWC/ETC 2004 & Current third party rate	
PCB water phase liquids	Incineration	Veolia Port Arthur, TX	pound	n/c	1.147				\$0.28	\$0.52	HWC/ETC 2004 & Current third party rate
			gal	n/c	1.147				\$3.30	\$4.33	HWC/ETC 2004 & Current third party rate
SLF-7 Leachate	Deep Well Injection	WM Vickery	pound	n/c	1.147				\$0.25		
			gal	n/c	1.147				\$0.03		
Bulk PCB solids/sludges	Incineration	Veolia Port Arthur, TX	pound	\$0.73	1.147	\$0.84	avg of 3 unit prices	\$0.60	\$0.64	Current CWM 2011 third party rate	
Bulk PCB Solids	Landfill		ton	\$86.25	1.147	\$98.93	avg of 2 unit prices		\$90.00	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions	
Bulk RCRA Solids	Landfill-w/treatment	Michigan	ton	\$130.00	1.147	\$149.11	HWRC '03 for landfill bulk haz waste w/o treatment		\$133.00	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions	Stab Waste/Fac Pond Sediment/Hazardous Waste Resource Center/Environmental Technology Council (ETC)
	Landfill-w/o treatment	Michigan	ton	\$86.25	1.147	\$98.93	avg of 2 unit prices		\$90.00	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions	
Tanks/Tank System Debris/Macro-Box/RCRA Debris	Landfill	Michigan	CF	\$10.90	1.147	\$12.50	RS Means		\$12.50	DEC 2004 Estimate accounting for inflation	material placed in macro-box onsite
			CY		1.147	\$0.00			\$337.50	DEC 2004 Estimate accounting for inflation	
Large PCB Transformer	Landfill	Michigan	CY	\$294.00	1.147	\$337.22	RS Means		\$12.50	DEC 2004 Estimate accounting for inflation	
			CF		1.147	\$0.00			\$337.50	DEC 2004 Estimate accounting for inflation	
Offsite Disposal - Concrete Debris/Non-Haz	Landfill	New York State 'D' Landfill	tons	\$27.00	1.147	\$30.97	EPA Data		\$35.00	Non-Haz Disposal/Site Experience	
Drum PCB Solids	Landfill	Michigan	drum	\$98.75	1.147	\$113.27	avg of 2 unit prices		\$100.00	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions	
Drum RCRA Solids	Landfill	Michigan	drum	\$98.75	1.147	\$113.27	avg of 2 unit prices		\$100.00	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions	
Carbon Regeneration	n/a	Siemans	pound	\$0.265	1.147	\$0.30	avg of 2 unit prices	\$0.2813	\$0.37	Current third party rate (Seimans) - Actual Cost Site Experience	CWM rate includes transport

2010 Rate = 110.654 (2010 GDP) ÷ 96.77 (2004 GDP)

HWC/ETC 2004 = Hazardous Waste Resource Center/Environmental Technology Council (ETC)

**Transportation & Disposal Unit Rates
Closure & Post-Closure Cost Estimates
CWM Chemical Services, LLC, Model City, New York**

TRANSPORTATION COSTS (add to facility list as per above)

Facility	UOM	Distance to Facility from Model City Facility
CWM Port Arthur, TX	miles	1529
Resource Recovery	miles	440
WTI, OH	miles	255
WM Vickery	miles	295
Wayne Disposal, MI	miles	385
Siemans	miles	232
Modern	miles	5

2004-2009	1.134
2004-2010	1.147
2001-2010	1.223
2009-2010	1.012

Equipment Type	UOM	2001 Cost per loaded mile	2011 Cost per loaded mile
Van Trailer	mile	\$2.70	\$3.25
Dump Trailer	mile	\$3.25	\$2.70
Flatbed	mile	\$3.50	\$3.50
Tanker truck	mile	\$3.50	\$3.50
Roll-off Transporter	mile	\$3.25	\$3.25

Leachate and Site Waters Treatment Costs

Summary costs (without labor and maintenance):	Treatment \$/Gal.
SLF 1-6	\$1.8244
SLF 7	\$0.2195
SLF 10	\$0.2195
SLF 11	\$0.3532
SLF 12	\$0.1526
RMU-1	\$0.0178
Site Waters	\$0.0313
Groundwater	\$0.1526
OTHER	\$0.1526
Total	\$0.0453

Note: Leachate treatment costs from unit costs table

AWTS Labor in Assembly 13.0 - third Party leachate treatment costs to operate facility

**Leachate Treatment Unit Rates
Closure & Post-Closure Cost Estimates
CWM Chemical Services, LLC, Model City, New York**

AQUEOUS WASTEWATER TREATMENT (AWT): Variable Cost

Assume fixed cost = 0; labor/maintenance excluded and separately estimated.

Variable cost = oil and filter cake disposal, reagents.

Based upon actual 2010 volumes, actual treatment and disposal costs as invoiced.

2010 cost for transportation and disposal of leachate oil and filter cake
(Leachate oil to Port Arthur; 100% of filter cake to Port Arthur, 0% of filter cake to Stablex):

	Leachate Oil (lb.)	Filter Cake (lb.) to Port Arthur	Filter Cake (lb.) to Stablex	Filter Cake (lb.) Overall
Disposal	\$ 0.52	\$ 0.34		\$ 0.34
Transportation	\$ 0.24	\$ 0.13		\$ 0.13
Total	\$ 0.76	\$ 0.47		\$ 0.47

Total 2010 gallons generated:

	Total Gallons	% Oil *	Gallons Oil	% Aqueous	Gallons Aqueous
SLF 1-6	114,110	25	28,528	75	85,583
SLF 7	51,800	1	518	99	51,282
SLF 10	61,325	1	613	99	60,712
SLF 11	143,283	3	4,298	97	138,985
SLF 12	37,765	0	-	100	37,765
RMU-1	14,666,777	0	-	100	14,666,777
Site Waters	1,445,496	0	-	100	1,445,496
Groundwater	616,760	0	-	100	616,760
OTHER	814,435	0	-	100	814,435
Total	17,951,751	-	33,957	-	17,917,794

* = Based on outbound shipments of profile X0024 to Port Arthur, TX

2010 reagent cost: Carbon = \$318,400 Carbon + treatment chemicals = \$398,000

Reagent cost includes carbon, sulfuric acid, hydrochloric acid, ferrous sulfate and lime.

RMU-1 = **\$0.0178 /gal.**

Site Waters (90% carbon only) =

\$0.0219 /gal.

SLF 1-6, 7, 10, 11, 12, groundwater + other =

\$0.0586 /gal.

Assume 1 lb. of filter cake generated for every 5 gallons of leachate treated.

Disposal of leachate oils:

Leachate oil is 9 lb./gallon.

	Gallons Oil	Disposal Cost/lb.	Density lb./gal.	Total Cost
SLF 1-6	28,528	0.76	9	\$ 195,128
SLF 7	518	0.76	9	\$ 3,543
SLF 10	613	0.76	9	\$ 4,195
SLF 11	4,298	0.76	9	\$ 29,402
Total	33,957	-	-	\$ 232,268

**Leachate Treatment Unit Rates
Closure & Post-Closure Cost Estimates
CWM Chemical Services, LLC, Model City, New York**

Disposal of filter cake:

	Gallons Aqueous	Filter Cake (1 lb/5 gal)	Disposal Cost/lb.	Total Cost
SLF 1-6	85,583	17,117	\$ 0.47	\$ 8,045
SLF 7	51,282	10,256	\$ 0.47	\$ 4,821
SLF 10	60,712	12,142	\$ 0.47	\$ 5,707
SLF 11	138,985	27,797	\$ 0.47	\$ 13,065
SLF 12	37,765	7,553	\$ 0.47	\$ 3,550
RMU-1	14,666,777	-	\$ 0.47	\$ -
10% Site Waters	144,550	28,910	\$ 0.47	\$ 13,588
Groundwater	616,760	123,352	\$ 0.47	\$ 57,975
OTHER	814,435	162,887	\$ 0.47	\$ 76,557
Total	16,616,847	390,014	\$ 0.47	\$ 183,307

Reagent Cost:

	Gallons Aqueous	Reagent Cost/gal	Total Cost
SLF 1-6	85,583	\$ 0.0586	\$ 5,014
SLF 7	51,282	\$ 0.0586	\$ 3,005
SLF 10	60,712	\$ 0.0586	\$ 3,557
SLF 11	138,985	\$ 0.0586	\$ 8,143
SLF 12	37,765	\$ 0.0586	\$ 2,213
RMU-1	14,666,777	\$ 0.0178	\$ 260,629
Site Waters	1,445,496	\$ 0.0219	\$ 31,587
Groundwater	616,760	\$ 0.0586	\$ 36,135
OTHER	814,435	\$ 0.0586	\$ 47,717
Total	17,917,794		\$ 398,000

Summary costs (without labor and maintenance):

	Oil (\$)	Filter Cake (\$)	Reagents (\$)	Total Cost (\$)	Gallons	Treatment \$/Gal.
SLF 1-6	\$ 195,128	\$ 8,045	\$ 5,014	\$ 208,187	114,110	\$1.8244
SLF 7	\$ 3,543	\$ 4,821	\$ 3,005	\$ 11,368	51,800	\$0.2195
SLF 10	\$ 4,195	\$ 5,707	\$ 3,557	\$ 13,459	61,325	\$0.2195
SLF 11	\$ 29,402	\$ 13,065	\$ 8,143	\$ 50,609	143,283	\$0.3532
SLF 12	\$ -	\$ 3,550	\$ 2,213	\$ 5,763	37,765	\$0.1526
RMU-1	\$ -	\$ -	\$ 260,629	\$ 260,629	14,666,777	\$0.0178
Site Waters	\$ -	\$ 13,588	\$ 31,587	\$ 45,175	1,445,496	\$0.0313
Groundwater	\$ -	\$ 57,975	\$ 36,135	\$ 94,111	616,760	\$0.1526
OTHER	\$ -	\$ 76,557	\$ 47,717	\$ 124,274	814,435	\$0.1526
Total	\$ 232,268	\$ 183,307	\$ 398,000	\$ 813,574	17,951,751	\$0.0453

**POST CLOSURE LEACHATE GENERATION RATE
ESTIMATES**

LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF SLF 1-6

Correlation of Yearly Flows VS. Time (Gal/Yr)

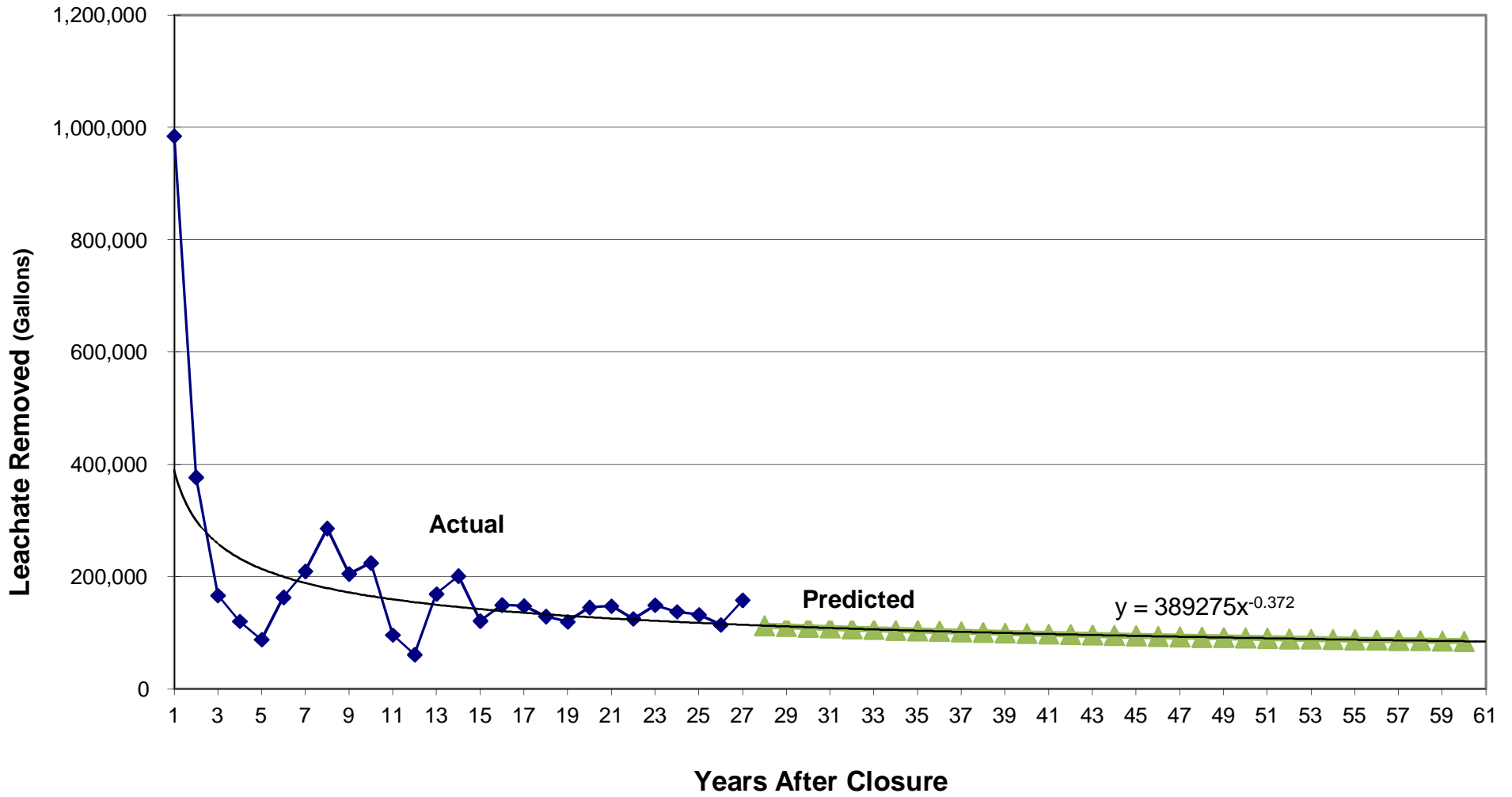
Years After Closure	Year	Leachate Removed (Actual)	Leachate Removed (Predicted)
1	1985	984,600	
2	1986	376,724	
3	1987	166,413	
4	1988	120,377	
5	1989	87,839	
6	1990	163,109	
7	1991	209,380	
8	1992	285,905	
9	1993	205,017	
10	1994	224,322	
11	1995	96,113	
12	1996	60,998	
13	1997	169,171	
14	1998	201,010	
15	1999	121,108	
16	2000	149,532	
17	2001	147,799	
18	2002	128,995	
19	2003	119,500	
20	2004	145,171	
21	2005	147,496	
22	2006	124,872	
23	2007	149,140	
24	2008	137,476	
25	2009	132,155	
26	2010	114,110	
27	2011	158,011	
28	2012		112,697
29	2013		111,236
30	2014		109,842
31	2015		108,510
32	2016		107,236
33	2017		106,015
34	2018		104,845
35	2019		103,720
36	2020		102,639
37	2021		101,598
38	2022		100,595
39	2023		99,628
40	2024		98,694
41	2025		97,791
42	2026		96,919
43	2027		96,074
44	2028		95,256
45	2029		94,463
46	2030		93,694
47	2031		92,947
48	2032		92,222
49	2033		91,517
50	2034		90,832
51	2035		90,166
52	2036		89,517
53	2037		88,884
54	2038		88,269
55	2039		87,668
56	2040		87,082
57	2041		86,511
58	2042		85,953
59	2043		85,408
60	2044		84,876
61	2045		84,356

138,178 Average of previous 5-years
 111,258 Predicted average of years 28 through 30
 94,984 Predicted average of years 31 through 60

Notes:

Golder calculated the predicted leachate removed using a power trendline based on actual data from previous years.

SLF 1-6 Leachate Comparison



LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF SLF 7

Correlation of Yearly Flows VS. Time (Gal/Yr)

Years After Closure	Year	Leachate Removed (Actual)	Leachate Removed (Predicted)
1	1985	533,700	
2	1986	254,603	
3	1987	76,870	
4	1988	25,587	
5	1989	36,480	
6	1990	32,588	
7	1991	37,770	
8	1992	42,317	
9	1993	35,407	
10	1994	33,039	
11	1995	37,352	
12	1996	47,543	
13	1997	57,610	
14	1998	47,891	
15	1999	44,672	
16	2000	31,491	
17	2001	30,773	
18	2002	37,864	
19	2003	29,061	
20	2004	36,777	
21	2005	56,037	
22	2006	35,733	
23	2007	25,324	
24	2008	33,134	
25	2009	69,850	
26	2010	51,800	
27	2011	74,050	
28	2012		30,319
29	2013		29,808
30	2014		29,323
31	2015		28,861
32	2016		28,421
33	2017		28,001
34	2018		27,599
35	2019		27,215
36	2020		26,846
37	2021		26,493
38	2022		26,153
39	2023		25,826
40	2024		25,512
41	2025		25,209
42	2026		24,916
43	2027		24,634
44	2028		24,361
45	2029		24,098
46	2030		23,843
47	2031		23,596
48	2032		23,357
49	2033		23,125
50	2034		22,900
51	2035		22,681
52	2036		22,469

50,832 Average of previous 5-years
 29,817 Predicted average of years 28 through 30
 24,297 Predicted average of years 31 through 60

LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF SLF 7 Correlation of Yearly Flows VS. Time (Gal/Yr)

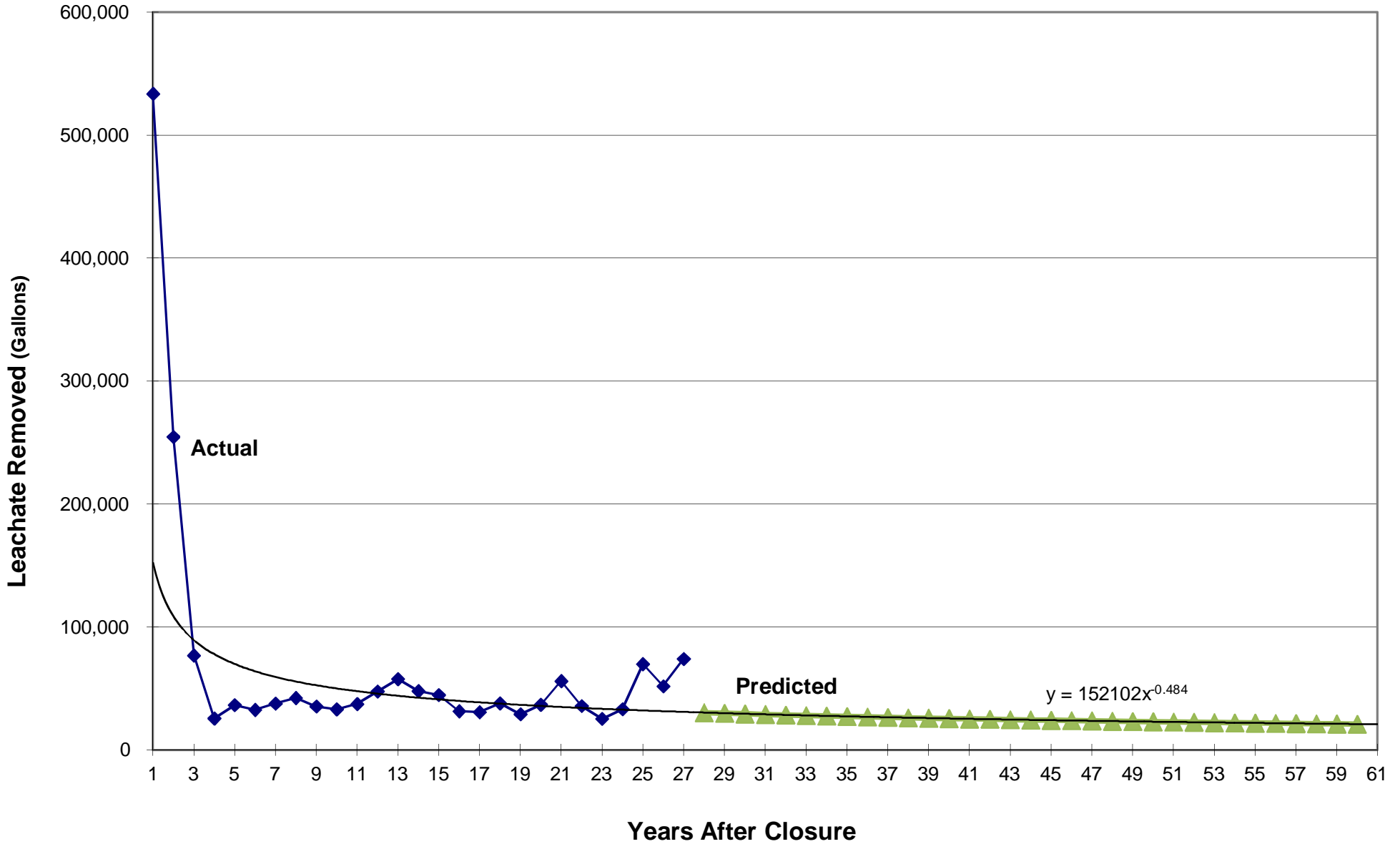
Years After Closure	Year	Leachate Removed (Actual)	Leachate Removed (Predicted)
53	2037		22,263
54	2038		22,063
55	2039		21,868
56	2040		21,678
57	2041		21,493
58	2042		21,313
59	2043		21,137
60	2044		20,966
61	2045		20,799

Notes:

Golder calculated the predicted leachate removed using a power trendline based on actual data from previous years.

Prior to August 2008, both SLF 7 and SLF 11 leachates were collected in tank T-108, and it was assumed that the total leachate volume in this tank was comprised of 15% SLF 7 and 85% SLF 11, based upon historical information. Since August 2008, SLF 7 and SLF 11 leachate have been collected and measured separately in tanks T-107 and T-108, respectively.

SLF 7 Leachate Comparison



LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF SLF 10

Correlation of Yearly Flows VS. Time (Gal/Yr)

Years After Closure	Year	Leachate Removed (Actual)	Leachate Removed (Predicted)
1	1987	133,922	
2	1988	38,562	
3	1989	50,951	
4	1990	69,142	
5	1991	56,254	
6	1992	54,185	
7	1993	36,156	
8	1994	40,954	
9	1995	28,508	
10	1996	40,881	
11	1997	35,356	
12	1998	44,324	
13	1999	32,525	
14	2000	40,717	
15	2001	41,516	
16	2002	45,940	
17	2003	36,090	
18	2004	71,937	
19	2005	64,899	
20	2006	60,493	
21	2007	58,348	
22	2008	54,879	
23	2009	48,204	
24	2010	61,325	
25	2011	76,115	
26	2012		46,127
27	2013		45,985
28	2014		45,848
29	2015		45,716
30	2016		45,589
31	2017		45,467
32	2018		45,349
33	2019		45,234
34	2020		45,124
35	2021		45,017
36	2022		44,913
37	2023		44,812
38	2024		44,714
39	2025		44,619
40	2026		44,526
41	2027		44,436
42	2028		44,349
43	2029		44,263
44	2030		44,180
45	2031		44,098
46	2032		44,019
47	2033		43,941
48	2034		43,866
49	2035		43,791
50	2036		43,719
51	2037		43,648
52	2038		43,579
53	2039		43,511
54	2040		43,444

59,774 Average of previous 5-years

45,853 Predicted average of years 26 through 30

44,132 Predicted average of years 31 through 60

LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF SLF 10

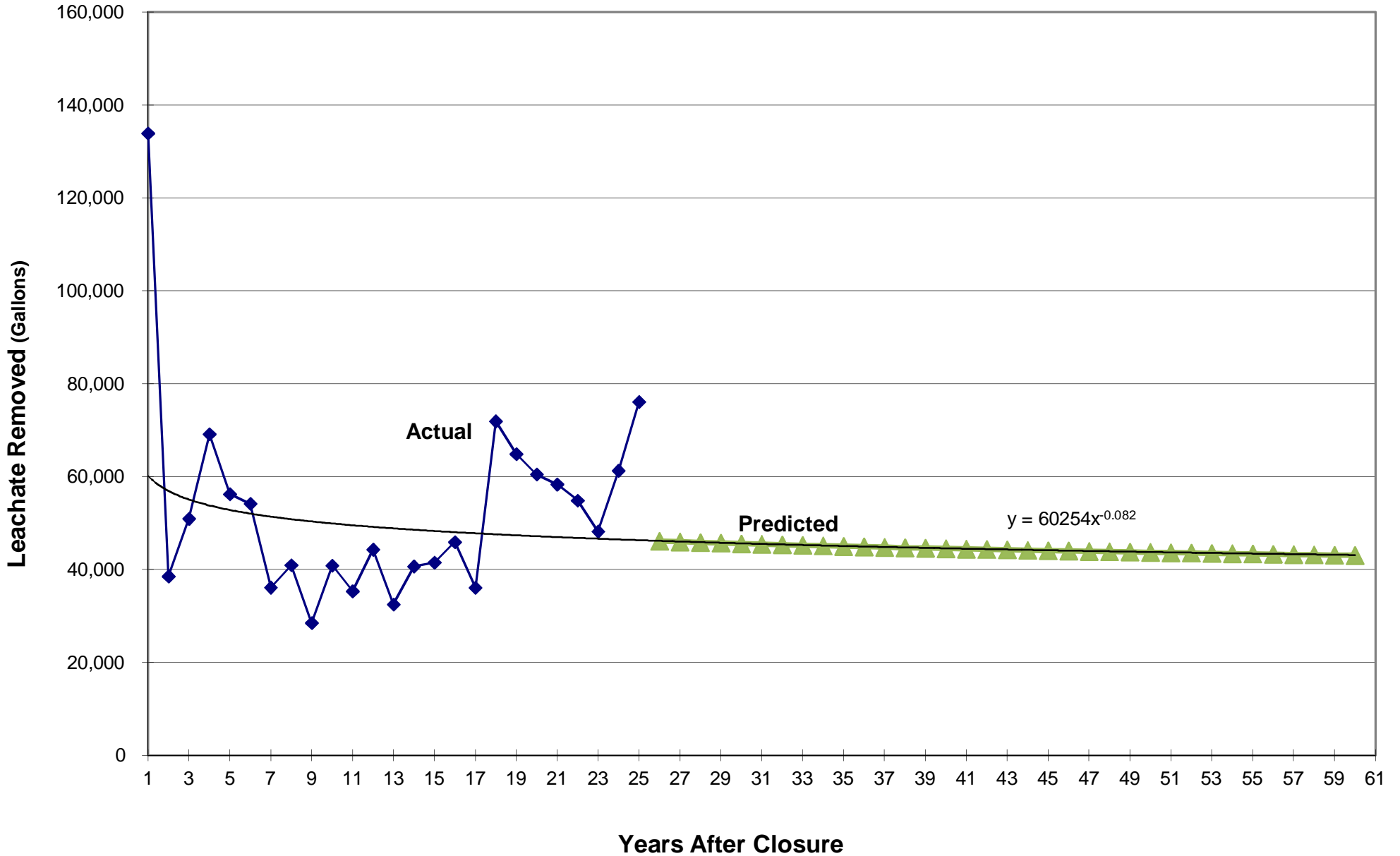
Correlation of Yearly Flows VS. Time (Gal/Yr)

Years After Closure	Year	Leachate Removed (Actual)	Leachate Removed (Predicted)
55	2041		43,379
56	2042		43,315
57	2043		43,252
58	2044		43,190
59	2045		43,130
60	2046		43,070

Notes:

Golder calculated the predicted leachate removed using a power trendline based on actual data from previous years.

SLF 10 Leachate Comparison



LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF SLF 11

Years After Closure	Year	Leachate Removed (Actual)	Leachate Removed (Predicted)
1	1992	686,761	
2	1993	550,320	
3	1994	572,622	
4	1995	503,300	
5	1996	377,071	
6	1997	251,147	
7	1998	229,441	
8	1999	253,144	
9	2000	178,441	
10	2001	174,368	
11	2002	214,570	
12	2003	164,681	
13	2004	208,406	
14	2005	317,546	
15	2006	202,487	
16	2007	143,502	
17	2008	150,829	
18	2009	137,678	
19	2010	143,283	
20	2011	163,002	
21	2012		144,071
22	2013		140,275
23	2014		136,741
24	2015		133,441
25	2016		130,350
26	2017		127,449
27	2018		124,717
28	2019		122,141
29	2020		119,705
30	2021		117,398
31	2022		115,209
32	2023		113,129
33	2024		111,148
34	2025		109,260
35	2026		107,457
36	2027		105,733
37	2028		104,083
38	2029		102,502
39	2030		100,985
40	2031		99,528
41	2032		98,128
42	2033		96,780
43	2034		95,481
44	2035		94,230
45	2036		93,022
46	2037		91,856
47	2038		90,729
48	2039		89,639
49	2040		88,584
50	2041		87,563
51	2042		86,573
52	2043		85,614
53	2044		84,683
54	2045		83,779
55	2046		82,901
56	2047		82,048

147,659 Average of previous 5-years
 129,629 Predicted average of years 21 through 30
 94,026 Predicted average of years 31 through 60

LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF SLF 11

Years After Closure	Year	Leachate Removed (Actual)	Leachate Removed (Predicted)
57	2048		81,219
58	2049		80,412
59	2050		79,627
60	2051		78,863

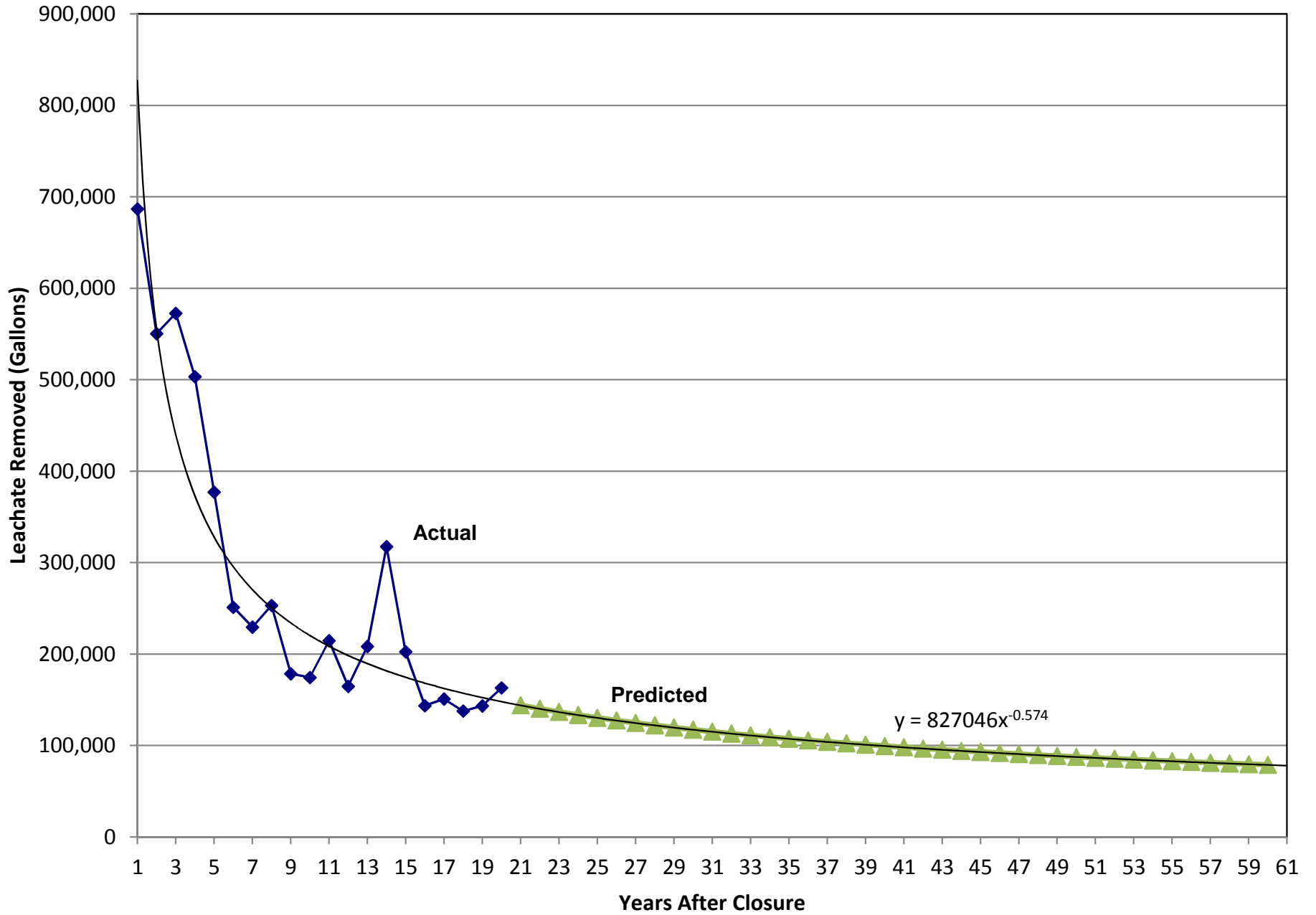
Notes:

Golder calculated the predicted leachate removed using a power trendline based on actual data from previous years.

Prior to August 2008, both SLF 7 and SLF 11 leachates were collected in tank T-108, and it was assumed that the total leachate volume in this tank was comprised of 15% SLF 7 and 85% SLF 11, based upon historical information. Since August 2008, SLF 7 and SLF 11 leachate have been collected and measured separately in tanks T-107 and T-108, respectively.

The reported 2005 volume is likely due to the lowering of the leachate compliance level for SLF 11 from one foot over the top of operations layer to one foot over the top of the primary liner.

SLF 11 Leachate Comparison



LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF SLF 12

Years After Closure	Year	Leachate Removed (Actual)	Leachate Removed (Predicted)
1	1996	578,847	
2	1997	363,240	
3	1998	194,073	
4	1999	114,015	
5	2000	142,807	
6	2001	77,273	
7	2002	61,321	
8	2003	67,446	
9	2004	66,410	
10	2005	86,658	
11	2006	69,430	
12	2007	62,631	
13	2008	43,816	
14	2009	45,318	
15	2010	37,765	
16	2011	46,868	
17	2012		37,826
18	2013		35,833
19	2014		34,045
20	2015		32,430
21	2016		30,966
22	2017		29,632
23	2018		28,410
24	2019		27,288
25	2020		26,253
26	2021		25,296
27	2022		24,408
28	2023		23,581
29	2024		22,811
30	2025		22,090
31	2026		21,415
32	2027		20,780
33	2028		20,183
34	2029		19,621
35	2030		19,090
36	2031		18,587
37	2032		18,111
38	2033		17,659
39	2034		17,230
40	2035		16,822
41	2036		16,433
42	2037		16,062
43	2038		15,708
44	2039		15,370
45	2040		15,047
46	2041		14,737
47	2042		14,440
48	2043		14,154
49	2044		13,881
50	2045		13,618
51	2046		13,365
52	2047		13,121
53	2048		12,887
54	2049		12,661
55	2050		12,442

47,280 Average of previous 5-years
 28,634 Predicted average of years 17 through 30
 15,421 Predicted average of years 31 through 60

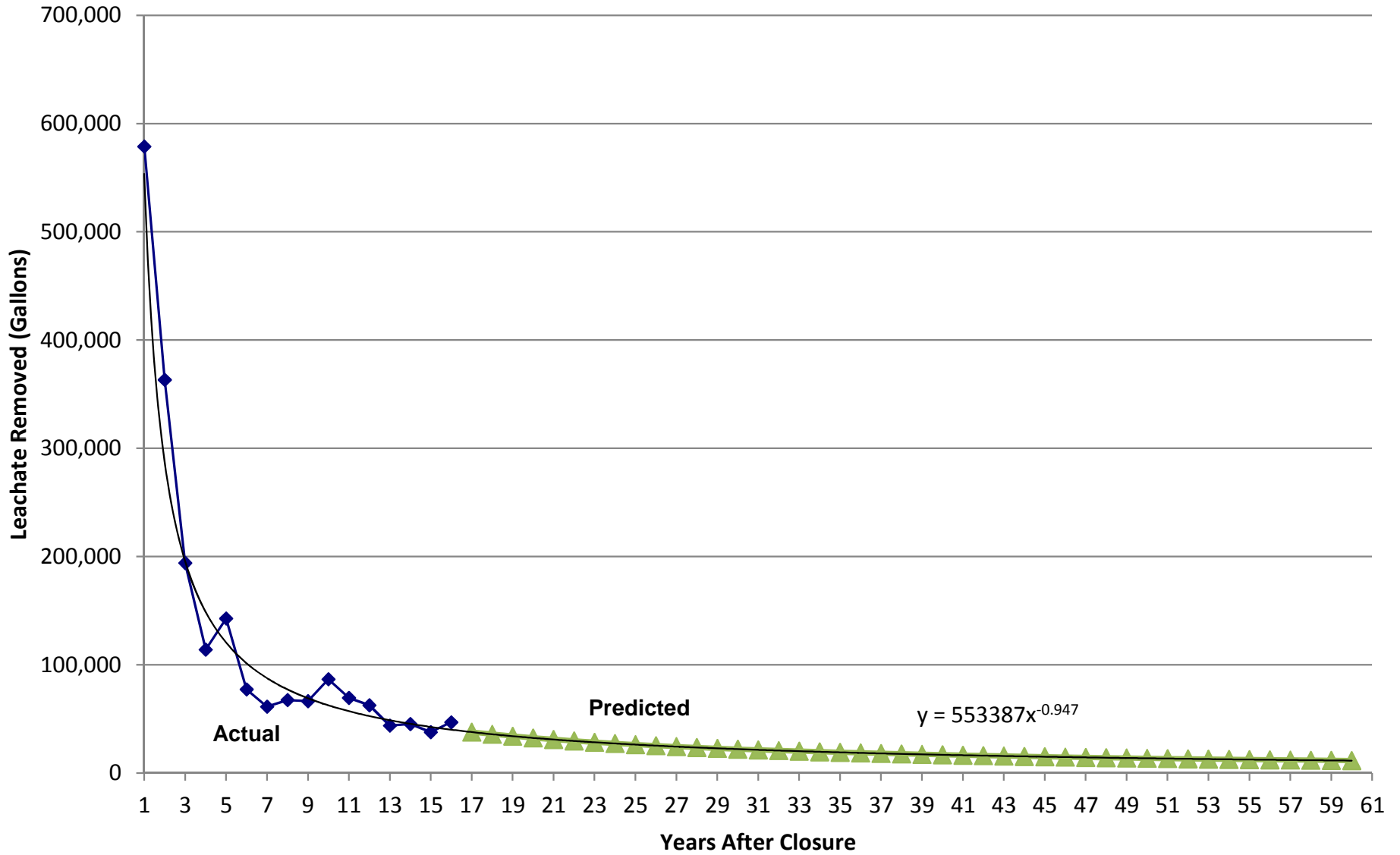
LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF SLF 12

Years After Closure	Year	Leachate Removed (Actual)	Leachate Removed (Predicted)
56	2051		12,232
57	2052		12,029
58	2053		11,832
59	2054		11,642
60	2055		11,458

Note:

Goldier calculated the predicted leachate removed using a power trendline based on actual data from previous years.

SLF 12 Leachate Comparison



LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF RMU-1

Years After Closure	Year	Leachate Removed (Actual)	Leachate Removed (Predicted)	SLF-12 leachate removed per acre
1	2015	n/a	1,041,925	26311.2
2	2016	n/a	653,832	16510.9
3	2017	n/a	349,331	8821.5
4	2018	n/a	205,227	5182.5
5	2019	n/a	257,053	6491.2
6	2020	n/a	139,091	3512.4
7	2021	n/a	110,378	2787.3
8	2022	n/a	121,403	3065.7
9	2023	n/a	119,538	3018.6
10	2024	n/a	155,984	3939.0
11	2025	n/a	124,974	3155.9
12	2026	n/a	112,736	2846.9
13	2027	n/a	78,869	1991.6
14	2028	n/a	81,572	2059.9
15	2029	n/a	67,977	1716.6
16	2030	n/a	84,362	2130.4
17	2031	n/a	68,087	
18	2032	n/a	64,500	
19	2033	n/a	61,280	
20	2034	n/a	58,375	
21	2035	n/a	55,739	
22	2036	n/a	53,337	
23	2037	n/a	51,138	
24	2038	n/a	49,118	
25	2039	n/a	47,256	
26	2040	n/a	45,533	
27	2041	n/a	43,934	
28	2042	n/a	42,447	
29	2043	n/a	41,059	
30	2044	n/a	39,762	
31	2045	n/a	38,546	
32	2046	n/a	37,405	
33	2047	n/a	36,330	
34	2048	n/a	35,318	
35	2049	n/a	34,361	
36	2050	n/a	33,457	
37	2051	n/a	32,600	
38	2052	n/a	31,787	
39	2053	n/a	31,014	
40	2054	n/a	30,280	
41	2055	n/a	29,580	
42	2056	n/a	28,912	
43	2057	n/a	28,275	
44	2058	n/a	27,666	
45	2059	n/a	27,084	
46	2060	n/a	26,526	
47	2061	n/a	25,991	
48	2062	n/a	25,478	
49	2063	n/a	24,985	
50	2064	n/a	24,512	
51	2065	n/a	24,057	
52	2066	n/a	23,618	
53	2067	n/a	23,196	

147527.2 Average of years 0 through 30

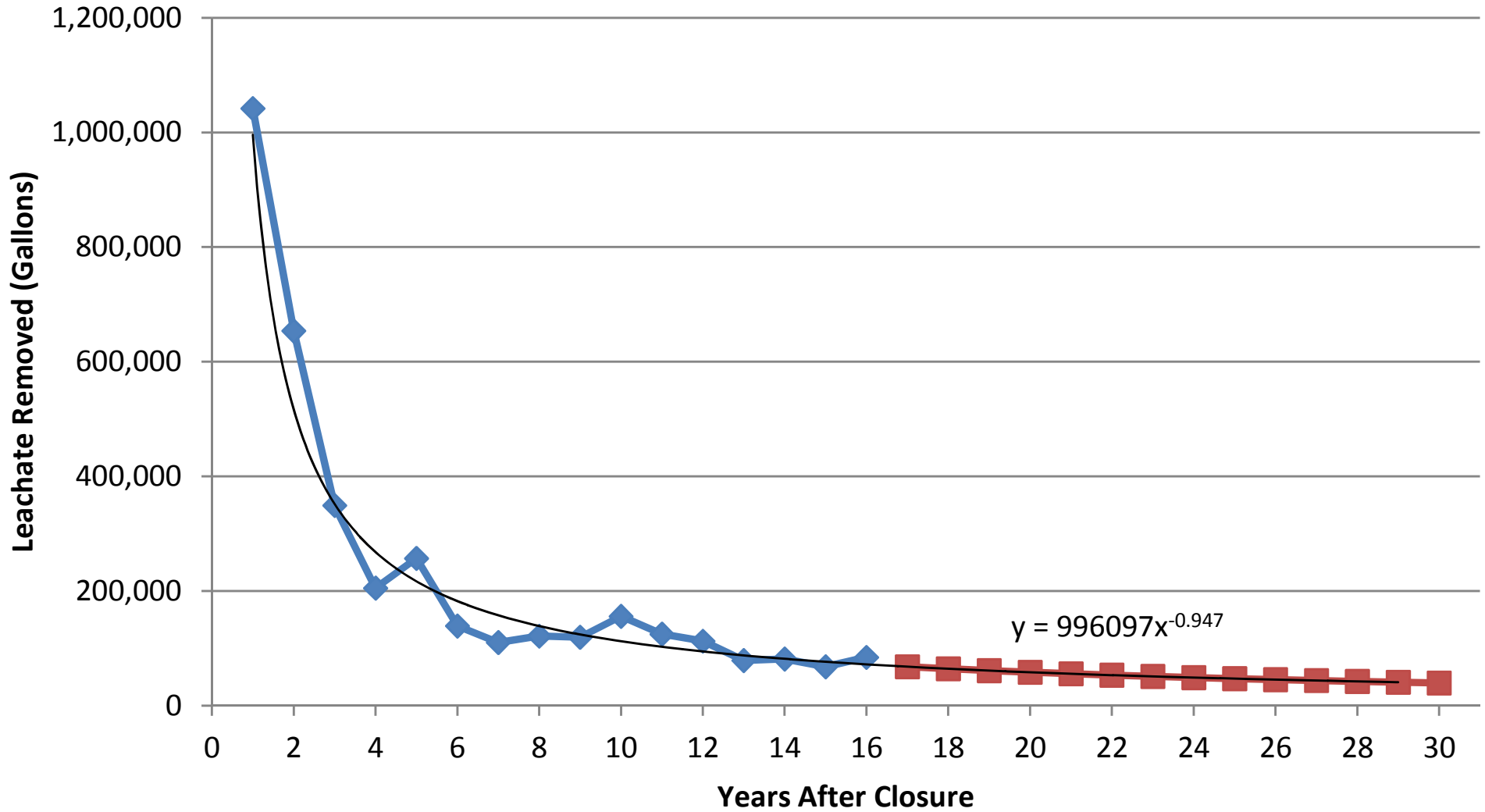
LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF RMU-1

Years After Closure	Year	Leachate Removed (Actual)	Leachate Removed (Predicted)	SLF-12 leachate removed per acre
54	2068	n/a	22,789	
55	2069	n/a	22,396	
56	2070	n/a	22,017	
57	2071	n/a	21,652	
58	2072	n/a	21,298	
59	2073	n/a	20,956	
60	2074	n/a	20,625	

Note:

Model based on the per acre generation rate of SLF-12 for each year since closure. The generation rate per acre for SLF-12 was applied to RMU-1 since both landfills are of similar construction. For years after the 16 years since closure of SLF-12, Golder calculated the predicted leachate removed using a power trendline based on actual data from years 0-16.

RMU-1 Leachate Comparison



NOTE: Sheet to be added.

LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF RMU-2

Years After Closure	Leachate Removed (Actual)	RMU-2 Leachate Removed (Predicted)	SLF-12 leachate removed per acre
1	n/a	1,012,982	26311.2
2	n/a	635,670	16510.9
3	n/a	339,628	8821.5
4	n/a	199,526	5182.5
5	n/a	249,912	6491.2
6	n/a	135,228	3512.4
7	n/a	107,312	2787.3
8	n/a	118,031	3065.7
9	n/a	116,218	3018.6
10	n/a	151,652	3939.0
11	n/a	121,503	3155.9
12	n/a	109,604	2846.9
13	n/a	76,678	1991.6
14	n/a	79,307	2059.9
15	n/a	66,089	1716.6
16	n/a	82,019	2130.4
17	n/a	90,830	2359.2
18	n/a	65,498	n/a
19	n/a	62,319	n/a
20	n/a	59,447	n/a
21	n/a	56,837	n/a
22	n/a	54,456	n/a
23	n/a	52,274	n/a
24	n/a	50,267	n/a
25	n/a	48,414	n/a
26	n/a	46,698	n/a
27	n/a	45,105	n/a
28	n/a	43,620	n/a
29	n/a	42,235	n/a
30	n/a	40,938	n/a
31	n/a	39,721	n/a
32	n/a	38,578	n/a
33	n/a	37,501	n/a
34	n/a	36,485	n/a
35	n/a	35,525	n/a
36	n/a	34,616	n/a
37	n/a	33,754	n/a
38	n/a	32,936	n/a
39	n/a	32,159	n/a

NOTE: Sheet to be added.

LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF RMU-2

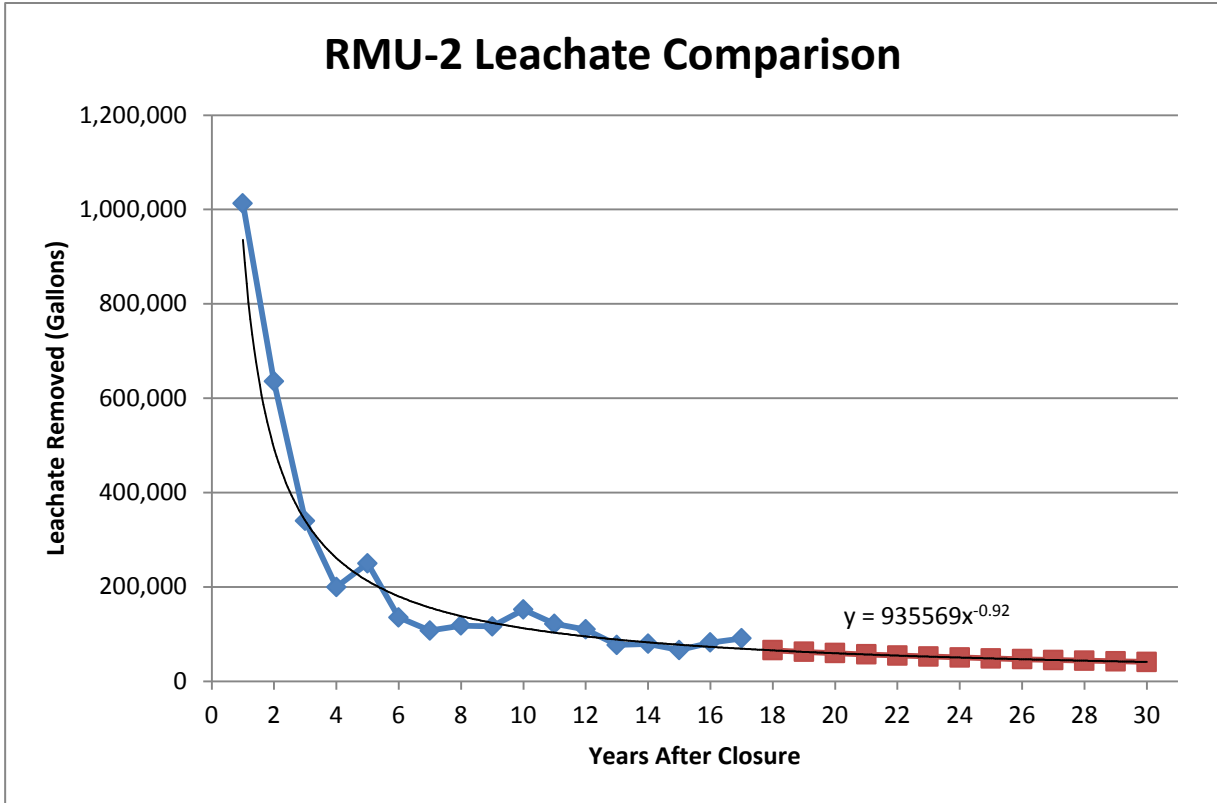
Years After Closure	Leachate Removed (Actual)	RMU-2 Leachate Removed (Predicted)	SLF-12 leachate removed per acre
40	n/a	31,418	n/a
41	n/a	30,712	n/a
42	n/a	30,039	n/a
43	n/a	29,396	n/a
44	n/a	28,781	n/a
45	n/a	28,192	n/a
46	n/a	27,627	n/a
47	n/a	27,086	n/a
48	n/a	26,566	n/a
49	n/a	26,067	n/a
50	n/a	25,587	n/a
51	n/a	25,125	n/a
52	n/a	24,680	n/a
53	n/a	24,252	n/a
54	n/a	23,838	n/a
55	n/a	23,439	n/a
56	n/a	23,054	n/a
57	n/a	22,681	n/a
58	n/a	22,321	n/a
59	n/a	21,973	n/a
60	n/a	21,636	n/a

Note:

Model based on the per acre generation rate of SLF-12 for each year since closure. The generation rate per acre for SLF-12 was applied to RMU-2 since both landfills are of similar construction. For years after the 17 years since closure of SLF-12, Golder calculated the predicted leachate removed using a power trendline based on actual data from years 0-17.

NOTE: Sheet to be added.

LEACHATE GENERATION RATES MODIFIED LINEAR REGRESSION OF RMU-2



- 145,343 Average of years 0 through 30 years
- 3,775 Average per acre 0 through 30 years
- 28,858 Average perpetual care years 31-60
- 750 Average per acre perpetual care years 31-60

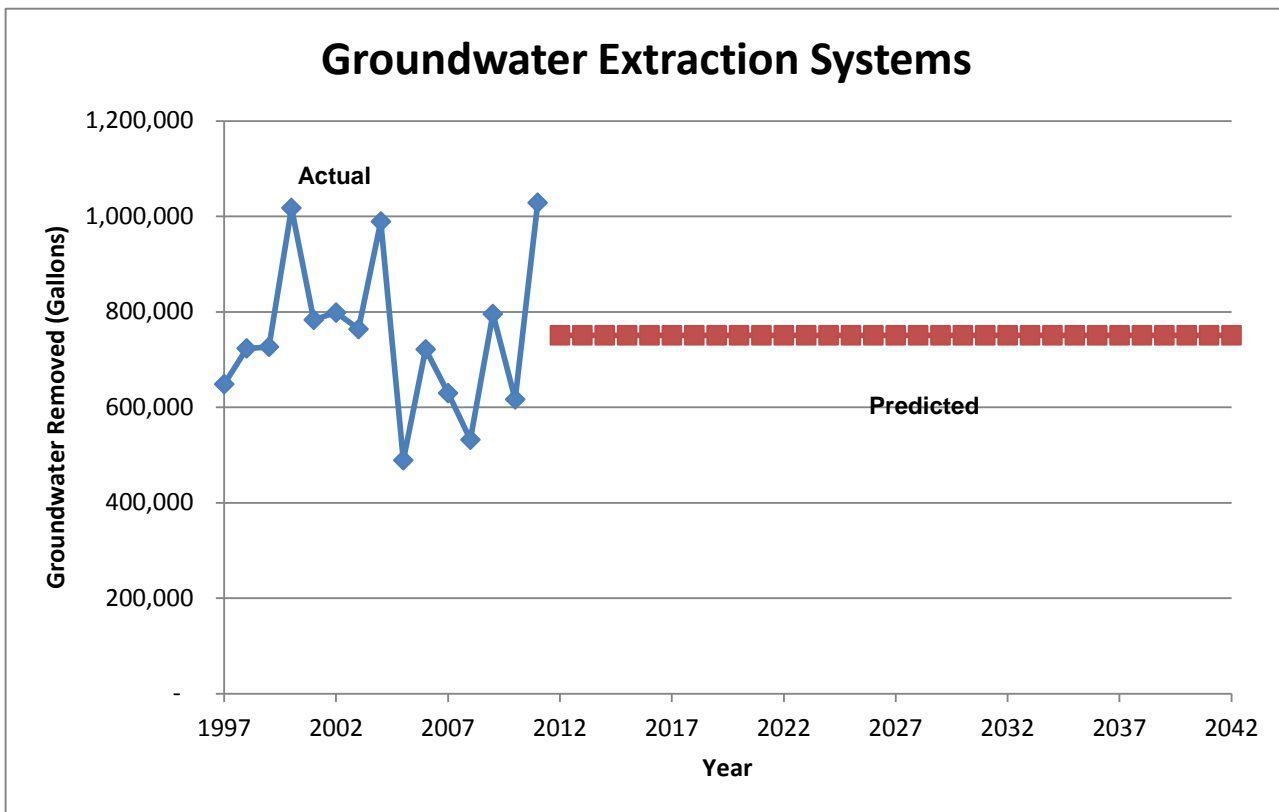
Scenario	0 thru 30	31 thru 60	Cost Estimate
1-Cell	26049	5172	PCC 9.01.10
2-Cells	49454	9819	PCC 9.02.10
3-Cells	73615	14617	PCC 9.03.10
4-Cells	95889	19039	PCC 9.04.10
5-Cells	120427	23911	PCC 9.05.10
6-Cells	145343	28858	PCC 9.06.10

Waste Cover Area Parameters

1-Cell Scenario (Cell 20)	6.9
2-Cell Scenario (Cells 18,20)	13.1
3-Cell Scenario (Cells 18,20,19)	19.5
4-Cell Scenario (Cells 18,20,19,17)	25.4
5-Cell Scenario (Cells 18,20,19,17,16)	31.9
6-Cell Scenario (Cells 18,20,19,17,16,15)	38.5

GROUNDWATER GENERATION RATES CORRECTIVE ACTION GROUNDWATER EXTRACTION

Year	Groundwater Removed
1997	648,587
1998	723,512
1999	726,726
2000	1,017,667
2001	783,387
2002	798,540
2003	763,900
2004	989,309
2005	489,129
2006	721,440
2007	629,893
2008	532,148
2009	795,555
2010	616,760
2011	1,028,720
Average	751,018



SITE WATERS GENERATION RATES HISTORICAL RATES

Year	Site Water Treated (Actual)
1996	578,847
1997	363,240
1998	194,073
1999	114,015
2000	142,807
2001	1,009,787
2002	1,048,265
2003	940,415
2004	1,398,225
2005	1,135,950
2006	1,110,722
2007	1,499,845
2008	1,432,420
2009	1,270,595
2010	1,445,496
2011	1,393,391

1,408,349 Average of previous 5-years

