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APPENDIX B

COST ESTIMATES FOR THE SITE-WIDE ALTERNATIVES

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**Table B-1A. Site-Wide Alternative 1 Cost Estimate**

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>PRE-CONSTRUCTION AND SITE PREPARATION</b>					
<b>Permits</b>					
	1	LS	\$5,000	\$5,000	
<b>Non-Engineering Measures</b>					
AULs	1	LS	\$50,000	\$50,000	
Educational Programs	1	LS	\$7,500	\$7,500	Assume 2 sessions
Permanant Signage	1	LS	\$10,000	\$10,000	
Permanant Fencing	500	LF	\$29	\$14,500	Fencing of MUA & SDA UCL Exceedences (Means 07 HC 32 31 13.20 0500)
<b>Project Submittals</b>					
Work Plan	1	LS	\$25,000	\$25,000	
Waste Management Plan	1	LS	\$7,000	\$7,000	
Site Safety and Health Plan	1	LS	\$5,000	\$5,000	
SAP/QAPP	1	LS	\$25,000	\$25,000	
Environmental Protection Plan	1	LS	\$5,000	\$5,000	
<b>Background WQ Monitoring, Sampling, Testing, and Analysis</b>					
Background Water Quality Monitoring	0	DAY	\$1,000	\$0	
<b>Mobilization/Demobilization</b>					
Utility Location	0	LS	\$50,000	\$0	
Excavator	0	LS	\$10,000	\$0	per season
Long Reach Excavator	0	LS	\$20,000	\$0	per season
Low Ground Pressure Long Reach Excavator	0	LS	\$40,000	\$0	per season
Small Vessel for Water Quality Monitoring & WQM Equipment	0	LS	\$5,000	\$0	per season
Generator	0	LS	\$2,500	\$0	per season
Temporary Work Trailer	0	LS	\$375	\$0	Assume 50 miles round trip for mob/demob costs @ \$7.50 per mile
Clearing and Grubbing	0	AC	\$3,000	\$0	
<b>Temporary Facilities</b>					
Portable Toilet	0	MO	\$190	\$0	Rental and Service for Unit
Temporary Work Trailer (01 52 13.20 0550)	0	MO	\$820	\$0	Rental Cost
Generator	0	MO	\$3,200	\$0	Includes Fuel
Temporary Fencing	0	LF	\$5.30	\$0	Fencing around site trailer, dewatering/rehandling area, and soil excavation work areas (Means HC 07 01 56 26.0350)
SWPP Controls	0	LF	\$2	\$0	Installation and Maintenance for the duration of the soil excavation work (Means 07 HC 31 25 13.1100 + \$0.13/lf for maintenence)
Equipment Decontamination Area	0	LS	\$15,000	\$0	per season
Personnel Decontamination Area	0	LS	\$3,000	\$0	per season
<b>Site Security</b>					
Project Signage	5	EA	\$125	\$625	Includes custom signage, posts and installation
<b>DREDGING, CAPPING, &amp; DREDGE MATERIAL DISPOSAL</b>					
<b>Equipment with Labor</b>					
Mechanical Excavation/Dredging Using Long Reach Excavator	0	CY	\$30	\$0	
Environmental Bucket/Clamshell - 3 CY	0	LS	\$15,000	\$0	Rental per season (one working bucket and one backup)
Vessel & Equipment for Water Quality Monitoring	0	MO	\$2,500	\$0	
Miscellaneous Tools and Equipment	0	MO	\$5,000	\$0	
<b>Material Rehandling/Dewatering/S/S for Transport</b>					
Dredge Material Rehandling/Dewatering/S/S for Transport	0	CY	\$15	\$0	
<b>Capping</b>					
Material Cost	0	TN	\$15	\$0	Material Cost Includes Delivery to the Site

**Table B-1A.** Site-Wide Alternative 1 Cost Estimate

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
Placement Cost	0	CY	\$15	\$0	
<b>Monitoring, Sampling, Testing, and Analysis</b>					
Intensive Water Quality Monitoring	0	DAY	\$1,000	\$0	2x/day for 1 week at start of season - 5 day work weeks
Routine Water Quality Monitoring	0	WK	\$4,000	\$0	Once per day
Monthly Water Quality Monitoring Report	0	EA	\$7,000	\$0	Monthly WQM Report
<b>Transportation and Disposal</b>					
Dredge Material Disposal - non-RCRA Waste	0	TN	\$175	\$0	
Dredge Material Disposal - RCRA Waste	0	TN	\$275	\$0	
Dredge Material Disposal - RCRA Waste that requires stabilization	0	TN	\$900	\$0	
Decant Water Disposal	0	1000 GAL	\$1	\$0	Assume 15% of dredge material by weight will be decanted off during dewatering and can be disposed of at POTW
<b>Hydrographic Survey</b>					
Pre-Work Hydrographic Survey	0	LS	\$30,000	\$0	
Post-Work Hydrographic Survey	0	LS	\$30,000	\$0	
Progress Surveys	0	EA	\$5,000	\$0	
<b>UPLAND EXCAVATION</b>					
Soil Excavation	0	CY	\$15	\$0	
Soil Rehandling/Loading for Disposal	0	CY	\$10	\$0	
<b>Backfill of Excavated Areas</b>					
Material Cost	0	TN	\$20	\$0	Material Cost Includes Delivery to the Site - Assumes Soil Weighs 1.3 Tons/CY
Backfill with Clean Material	0	CY	\$4	\$0	Backfill Volume = In-Situ Volume to be Excavated +10%
<b>Transportation and Disposal</b>					
Excavated Soil Disposal - non-RCRA Waste	0	TN	\$175	\$0	
Excavated Soil Disposal - RCRA Waste	0	TN	\$275	\$0	
Excavated Soil Disposal - RCRA Waste that requires stabilization	0	TN	\$900	\$0	
<b>Topographic Survey</b>					
Pre-Work Topographic Survey	0	LS	\$10,000	\$0	
Post-Work Topographic Survey	0	LS	\$10,000	\$0	
<b>MONITORING</b>					
Construction Monitoring	1	WK	\$3,600	\$3,600	
<b>REPORTING ACTIVITIES</b>					
Construction Completion Design Report	1	LS	\$10,000	\$10,000	
<b>SITE RESTORATION</b>					
Restoration of Sediment Acreage Disturbed	0	AC	\$10,000	\$0	
<b>SUB-TOTAL</b>				\$168,225	Cost in 2007 Dollars
25% Contingency				\$42,056	15% Scope Contingency and 10% Bid Contingency
<b>Construction Total</b>				\$210,281	
<b>Remedial Design</b>				\$13,458	8% of Construction Cost Without Contingency
<b>LTM and Maintenance Total</b>				\$1,595,848	From Table B-1B
<b>Project Total</b>				\$1,819,587	

**Table B-1B.** Site-Wide Alternative 1 LTM and Maintenance Cost Estimate

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>GROUNDWATER MONITORING</b>					
Well Sampling Event	9	DY	\$2,500	\$22,500	Assume 2 people - 1 day/sampling event and 9 events total. Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Water Analysis - 6010	18	EA	\$105	\$1,895	Groundwater monitoring for Lead at PZ-24 (1 sample + 1 duplicate)
Water Analysis - EPA 7470/7471	18	EA	\$29	\$526	Groundwater monitoring for Mercury at DP-MW1 (1 sample + 1 duplicate)
<b>SOIL MONITORING</b>					
Soil Sampling	45	DY	\$4,000	\$180,000	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Soil Analysis - Metals (EPA 200.7)*	549	EA	\$565	\$310,420	Metals
Soil Analysis - Mercury (EPA 7470/7471)*	513	EA	\$29	\$14,988	Mercury
Soil Analysis - VOCs (EPA 8260B)*	81	EA	\$153	\$12,413	VOCs
<b>SEDIMENT MONITORING</b>					
Sediment Sampling	90	DY	\$5,000	\$450,000	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Sediment Analysis - 7470/7471	477	EA	\$29	\$13,936	Total Mercury
<b>SEDIMENT CAP MONITORING/MAINTENANCE</b>					
Limited Bathymetry Survey	0	EA	\$5,000	\$0	Similar to progress survey
Sediment Sampling	0	DY	\$5,000	\$0	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Sediment Analysis - 7470/7471	0	EA	\$29	\$0	Total Mercury
<b>Maintenance</b>					
Placement of Additional Cap Material	0	CY	\$36	\$0	Assume 5% of Cap Volume to Placed for Maintenance Every 5 Years
<b>FISH TISSUE SAMPLING</b>					
Fish Collection and Sampling	45	EA	\$4,000	\$180,000	Assumes 5 Samples Collected and Analyzed per Event
<b>REPORTING</b>					
Monitoring Event Reporting	9	EA	\$10,000	\$90,000	
Yearly Cap Monitoring Report	0	EA	\$3,000	\$0	
<b>SITE RESTORATION</b>					
Restoration of Upland Acreage Disturbed	0	AC	\$10,000	\$0	
<b>SUB-TOTAL</b>				\$1,276,678	Cost in 2007 Dollars
25% Contingency				\$319,170	15% Scope Contingency and 10% Bid Contingency
<b>Total</b>				\$1,595,848	

**Table B-2A. Site-Wide Alternative 2 Cost Estimate**

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>PRE-CONSTRUCTION AND SITE PREPARATION</b>					
<b>Permits</b>					
	1	LS	\$10,000	\$10,000	
<b>Non-Engineering Controls</b>					
AULs	1	LS	\$50,000	\$50,000	
Educational Programs	2	LS	\$7,500	\$15,000	
Permanant Signage	1	LS	\$5,000	\$5,000	
Permanant Fencing	500	LF	\$29	\$14,500	
<b>Project Submittals</b>					
Work Plan	1	LS	\$35,000	\$35,000	
Waste Management Plan	1	LS	\$15,000	\$15,000	
Site Safety and Health Plan	1	LS	\$5,000	\$5,000	
SAP/QAPP	1	LS	\$10,000	\$10,000	
Environmental Protection Plan	1	LS	\$10,000	\$10,000	
<b>Background WQ Monitoring, Sampling, Testing, and Analysis</b>					
Background Water Quality Monitoring	2	DAY	\$1,000	\$2,000	
<b>Mobilization/Demobilization</b>					
Utlitiy Locator	1	LS	\$50,000	\$50,000	
Excavator	1	LS	\$10,000	\$10,000	per season
Long Reach Excavator	1	LS	\$20,000	\$20,000	per season
Low Ground Pressure Long Reach Excavator	0	LS	\$40,000	\$0	per season
Small Vessel for Water Quality Monitoring & WQM Equipment	1	LS	\$5,000	\$5,000	per season
Generator	1	LS	\$2,500	\$2,500	per season
Temporary Work Trailer	1	LS	\$375	\$375	Assume 50 miles round trip for mob/demob costs @ \$7.50 per mile
Clearing and Grubbing	0	AC	\$3,000	\$0	
<b>Temporary Facilities</b>					
Portable Toilet	2	MO	\$190	\$380	Rental and Service for Unit
Temporary Work Trailer (01 52 13.20 0550)	2	MO	\$820	\$1,640	Rental Cost
Generator	2	MO	\$3,200	\$6,400	Includes Fuel
Temporary Fencing	2,000	LF	\$5	\$10,600	Fencing around site trailer, dewatering/rehandling area, and soil excavation work areas
SWPP Controls	500	LF	\$2	\$1,000	Installation and Maintenance for the duration of the soil excavation work
Equipment Decontamination Area	1	LS	\$15,000	\$15,000	per season
Personnel Decontamination Area	1	LS	\$3,000	\$3,000	per season
<b>Site Security</b>					
Warning Signage (10 14 53 1600)	5	EA	\$125	\$625	
<b>DREDGING, CAPPING, &amp; DREDGE MATERIAL DISPOSAL</b>					
<b>Equipment with Labor</b>					
Mechanical Excavation/Dredging Using Long Reach Excavator	11,731	CY	\$30	\$351,930	
Environmental Bucket/Clamshell - 3 CY	2	LS	\$15,000	\$30,000	Rental per season (one working bucket and one backup)
Vessel & Equipment for Water Quality Monitoring	1	MO	\$2,500	\$2,500	
Miscellaneous Tools and Equipment	2	MO	\$5,000	\$7,500	
<b>Material Rehandling/Dewatering/S/S for Transport</b>					
Dredge Material Rehandling/Dewatering/S/S for Transport	11,731	CY	\$15	\$175,965	
<b>Capping</b>					
Material Cost	0	TN	\$15	\$0	Material Cost Includes Delivery to the Site
Placement Cost	0	CY	\$15	\$0	

**Table B-2A.** Site-Wide Alternative 2 Cost Estimate

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>Monitoring, Sampling, Testing, and Analysis</b>					
Intensive Water Quality Monitoring	5	DAY	\$1,000	\$5,000	2x/day for 1 week at start of season - 5 day work weeks
Routine Water Quality Monitoring	5	WK	\$4,000	\$20,000	Once per day
Monthly Water Quality Monitoring Report	2	EA	\$7,000	\$14,000	Monthly WQM Report
<b>Transportation and Disposal</b>					
Dredge Material Disposal - non-RCRA Waste	0	TN	\$175	\$0	
Dredge Material Disposal - RCRA Waste	11,331	TN	\$275	\$3,116,025	
Dredge Material Disposal - RCRA Waste that requires stabilization	640	TN	\$900	\$576,000	
Decant Water Treatment/Disposal	680,398	1000 GAL	\$1	\$680,398	Assume 15% of dredge material by weight will be decanted off during dewatering
<b>Hydrographic Survey</b>					
Pre-Work Hydrographic Survey	1	LS	\$30,000	\$30,000	
Post-Work Hydrographic Survey	1	LS	\$30,000	\$30,000	
Progress Surveys	1	EA	\$5,000	\$5,000	
<b>UPLAND EXCAVATION</b>					
Soil Excavation	1,350	CY	\$15	\$20,250	
Soil Rehandling/Loading for Disposal	1,350	CY	\$10	\$13,500	
<b>Backfill of Excavated Areas</b>					
Material Cost	1,930	TN	\$20	\$38,600	Material Cost Includes Delivery to the Site - Assumes Soil Weighs 1.3 Tons/CY
Backfill with Clean Material	1,485	CY	\$4	\$5,198	Backfill Volume = In-Situ Volume to be Excavated +10%
<b>Transportation and Disposal</b>					
Excavated Soil Disposal - non-RCRA Waste	0	TN	\$175	\$0	
Excavated Soil Disposal - RCRA Waste	0	TN	\$275	\$0	
Excavated Soil Disposal - RCRA Waste that requires stabilization	2,160	TN	\$900	\$1,944,000	
<b>Topographic Survey</b>					
Pre-Work Topographic Survey	1	LS	\$10,000	\$10,000	
Post-Work Topographic Survey	1	LS	\$10,000	\$10,000	
<b>MONITORING</b>					
Construction Monitoring	6	WK	\$3,600	\$21,600	
<b>REPORTING ACTIVITIES</b>					
Construction Completion Design Report	1	LS	\$25,000	\$25,000	
<b>SITE RESTORATION</b>					
Restoration of Sediment Acreage Disturbed	2.42	AC	\$10,000	\$24,200	
<b>SUB-TOTAL</b>				\$7,454,686	Cost in 2007 Dollars
25% Contingency				\$1,863,671	15% Scope Contingency and 10% Bid Contingency
<b>Construction Total</b>				\$9,318,357	
<b>Remedial Design</b>				\$596,375	8% of Construction Cost Without Contingency
<b>LTM and Maintenance Total</b>				\$1,507,913	From Table B-2B
<b>Project Total</b>				\$11,422,645	

**Table B-2B. Site-Wide Alternative 2 LTM and Maintenance Cost Estimate**

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>GROUNDWATER MONITORING</b>					
Well Sampling Event	9	EA	\$2,500	\$22,500	Assume 2 people - 1 day/sampling event and 9 events total. Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Water Analysis - 6010	18	EA	\$105	\$1,895	Groundwater monitoring for Lead at PZ-24 (1 sample + 1 duplicate)
Water Analysis - EPA 7470/7471	18	EA	\$29	\$526	Groundwater monitoring for Mercury at DP-MW1 (1 sample + 1 duplicate)
<b>SOIL MONITORING</b>					
Soil Sampling	45	DY	\$4,000	\$180,000	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Soil Analysis - Metals (EPA 200.7)*	504	EA	\$565	\$284,976	Metals
Soil Analysis - Mercury (EPA 7470/7471)*	513	EA	\$29	\$14,988	Mercury
Soil Analysis - VOCs (EPA 8260B)*	81	EA	\$153	\$12,413	VOCs
<b>SEDIMENT MONITORING</b>					
Sediment Sampling	81	DY	\$5,000	\$405,000	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Sediment Analysis - 7470/7471	405	EA	\$29	\$11,833	Total Mercury
<b>SEDIMENT CAP MONITORING/MAINTENANCE</b>					
Limited Bathymetry Survey	0	EA	\$5,000	\$0	Similar to progress survey
Sediment Sampling	0	DY	\$5,000	\$0	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Sediment Analysis - 7470/7471	0	EA	\$29	\$0	Total Mercury
<b>Maintenance</b>					
Placement of Additional Cap Material	0	CY		\$0	Assume 5% of Cap Volume to Placed for Maintenance Every 5 Years
<b>FISH TISSUE SAMPLING</b>					
Fish Collection and Sampling	45	EA	\$4,000	\$180,000	Assumes 5 Samples Collected and Analyzed per Event
<b>REPORTING</b>					
Monitoring Event Reporting	9	EA	\$10,000	\$90,000	
Yearly Cap Monitoring Report	0	EA	\$3,000	\$0	
<b>SITE RESTORATION</b>					
Restoration of Upland Acreage Disturbed	0.22	AC	\$10,000	\$2,200	
<b>SUB-TOTAL</b>				\$1,206,330	Cost in 2007 Dollars
25% Contingency				\$301,583	15% Scope Contingency and 10% Bid Contingency
<b>Total</b>				\$1,507,913	

**Table B-3A. Site-Wide Alternative 3 Cost Estimate**

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>PRE-CONSTRUCTION AND SITE PREPARATION</b>					
<b>Permits</b>					
	1	LS	\$15,000	\$15,000	
<b>Non-Engineering Measures</b>					
AULs	1	LS	\$50,000	\$50,000	
Educational Programs	1	LS	\$7,500	\$7,500	
Permanant Signage	1	LS	\$10,000	\$10,000	
Permanant Fencing	500	LF	\$29	\$14,500	
<b>Project Submittals</b>					
Work Plan	1	LS	\$40,000	\$40,000	
Waste Management Plan	1	LS	\$15,000	\$15,000	
Site Safety and Health Plan	1	LS	\$5,000	\$5,000	
SAP/QAPP	1	LS	\$10,000	\$10,000	
Environmental Protection Plan	1	LS	\$10,000	\$10,000	
<b>Background WQ Monitoring, Sampling, Testing, and Analysis</b>					
Background Water Quality Monitoring	2	DAY	\$1,000	\$2,000	
<b>Mobilization/Demobilization</b>					
Utility Location	1	LS	\$50,000	\$50,000	
Excavator	1	LS	\$10,000	\$10,000	per season
Long Reach Excavator	1	LS	\$20,000	\$20,000	per season
Low Ground Pressure Long Reach Excavator	1	LS	\$40,000	\$40,000	per season
Small Vessel for Water Quality Monitoring & WQM Equipment	1	LS	\$5,000	\$5,000	per season
Generator	1	LS	\$2,500	\$2,500	per season
Temporary Work Trailer	1	LS	\$375	\$375	Assume 50 miles round trip for mob/demob costs @ \$7.50 per mile
Clearing and Grubbing	0.6	AC	\$3,000	\$1,800	
<b>Temporary Facilities</b>					
Portable Toilet	5	MO	\$190	\$950	Rental and Service for Unit
Temporary Work Trailer (01 52 13.20 0550)	5	MO	\$820	\$4,100	Rental Cost
Generator	5	MO	\$3,200	\$16,000	Includes Fuel
Temporary Fencing	1000	LF	\$5	\$5,300	Fencing around site trailer, dewatering/rehandling area, and soil excavation work areas
SWPP Controls	2000	LF	\$2	\$4,000	Installation and Maintenance for the duration of the soil excavation work
Equipment Decontamination Area	1	LS	\$15,000	\$15,000	per season
Personnel Decontamination Area	1	LS	\$3,000	\$3,000	per season
<b>Site Security</b>					
Warning Signage (10 14 53 1600)	5	EA	\$125	\$625	
<b>DREDGING, CAPPING, &amp; DREDGE MATERIAL DISPOSAL</b>					
<b>Equipment with Labor</b>					
Mechanical Excavation/Dredging Using Long Reach Excavator	42,355	CY	\$30	\$1,270,650	
Environmental Bucket/Clamshell - 3 CY	2	LS	\$15,000	\$30,000	Rental per season (one working bucket and one backup)
Vessel & Equipment for Water Quality Monitoring	5	MO	\$2,500	\$12,500	
Miscellaneous Tools and Equipment	5	MO	\$5,000	\$25,000	
<b>Material Rehandling/Dewatering/S/S for Transport</b>					
Dredge Material Rehandling/Dewatering/S/S for Transport	42355	CY	\$15	\$635,325	
<b>Capping</b>					
Material Cost	42300	TN	\$15	\$634,500	Material Cost Includes Delivery to the Site
Placement Cost	30213	CY	\$15	\$453,195	

**Table B-3A.** Site-Wide Alternative 3 Cost Estimate

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>Monitoring, Sampling, Testing, and Analysis</b>					
Intensive Water Quality Monitoring	5	DAY	\$1,000	\$5,000	2x/day for 1 week at start of season - 5 day work weeks
Routine Water Quality Monitoring	19	WK	\$4,000	\$76,000	Once per day
Monthly Water Quality Monitoring Report	5	EA	\$7,000	\$35,000	Monthly WQM Report
<b>Transportation and Disposal</b>					
Dredge Material Disposal - non-RCRA Waste	0	TN	\$175	\$0	
Dredge Material Disposal - RCRA Waste	66400	TN	\$275	\$18,260,000	
Dredge Material Disposal - RCRA Waste that requires stabilization	1296	TN	\$900	\$1,166,400	
Decant Water Disposal	2457	1000 GAL	\$1	\$2,457	Assume 15% of dredge material by weight will be decanted off during dewatering
<b>Hydrographic Survey</b>					
Pre-Work Hydrographic Survey	1	LS	\$30,000	\$30,000	
Post-Work Hydrographic Survey	1	LS	\$30,000	\$30,000	
Progress Surveys	5	EA	\$5,000	\$25,000	One per month
<b>UPLAND EXCAVATION</b>					
Soil Excavation	1350	CY	\$15	\$20,250	
Soil Rehandling/Loading for Disposal	1350	CY	\$10	\$13,500	
<b>Backfill of Excavated Areas</b>					
Material Cost	1931	TN	\$20	\$38,620	Material Cost Includes Delivery to the Site - Assumes Soil Weighs 1.3 Tons/CY
Backfill with Clean Material	1485	CY	\$4	\$5,198	Backfill Volume = In-Situ Volume to be Excavated +10%
<b>Transportation and Disposal</b>					
Excavated Soil Disposal - non-RCRA Waste	0	TN	\$175	\$0	
Excavated Soil Disposal - RCRA Waste	0	TN	\$275	\$0	
Excavated Soil Disposal - RCRA Waste that requires stabilization	1890	TN	\$900	\$1,701,000	
<b>Topographic Survey</b>					
Pre-Work Topographic Survey	1	LS	\$10,000	\$10,000	
Post-Work Topographic Survey	1	LS	\$10,000	\$10,000	
<b>MONITORING</b>					
Construction Monitoring	21	WK	\$3,600	\$75,600	
<b>REPORTING ACTIVITIES</b>					
Construction Completion Design Report	1	LS	\$25,000	\$25,000	
<b>SITE RESTORATION</b>					
Restoration of Sediment Acreage Disturbed	8.75	AC	\$10,000	\$87,500	
<b>SUB-TOTAL</b>				\$25,035,345	Cost in 2007 Dollars
25% Contingency				\$6,258,836	15% Scope Contingency and 10% Bid Contingency
<b>Construction Total</b>				\$31,294,181	
<b>Remedial Design</b>				\$2,002,828	8% of Construction Cost Without Contingency
<b>LTM and Maintenance Total</b>				\$3,088,822	From Table B-3B
<b>Project Total</b>				\$36,385,830	



**Table B-4A. Site-Wide Alternative 4 Cost Estimate**

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>PRE-CONSTRUCTION AND SITE PREPARATION</b>					
<b>Permits</b>					
	1	LS	\$2,000	\$2,000	
<b>Non-Engineering Measures</b>					
AULs	1	LS	\$50,000	\$50,000	
Educational Programs	1	LS	\$7,500	\$7,500	
Permanant Signage	1	LS	\$10,000	\$10,000	
Permanant Fencing	500	LF	\$29	\$14,500	
<b>Project Submittals</b>					
Work Plan	1	LS	\$45,000	\$45,000	
Waste Management Plan	1	LS	\$15,000	\$15,000	
Site Safety and Health Plan	1	LS	\$5,000	\$5,000	
SAP/QAPP	1	LS	\$12,000	\$12,000	
Environmental Protection Plan	1	LS	\$10,000	\$10,000	
<b>Background WQ Monitoring, Sampling, Testing, and Analysis</b>					
Background Water Quality Monitoring	2	DAY	\$1,000	\$2,000	
<b>Mobilization/Demobilization</b>					
Utility Location	1	LS	\$50,000	\$50,000	
Excavator	1	LS	\$10,000	\$10,000	per season
Long Reach Excavator	1	LS	\$20,000	\$20,000	per season
Low Ground Pressure Long Reach Excavator	1	LS	\$40,000	\$40,000	per season
Small Vessel for Water Quality Monitoring & WQM Equipment	1	LS	\$5,000	\$5,000	per season
Generator	1	LS	\$2,500	\$2,500	per season
Temporary Work Trailer	1	LS	\$375	\$375	Assume 50 miles round trip for mob/demob costs @ \$7.50 per mile
Clearing and Grubbing	6.5	AC	\$3,000	\$19,500	
<b>Temporary Facilities</b>					
Portable Toilet	8	MO	\$190	\$1,520	Rental and Service for Unit
Temporary Work Trailer (01 52 13.20 0550)	8	MO	\$820	\$6,560	Rental Cost
Generator	8	MO	\$3,200	\$25,600	Includes Fuel
Temporary Fencing	1000	LF	\$5	\$5,300	Fencing around site trailer, dewatering/rehandling area, and soil excavation work areas
SWPP Controls	2000	LF	\$2	\$4,000	Installation and Maintenance for the duration of the soil excavation work
Equipment Decontamination Area	1	LS	\$15,000	\$15,000	per season
Personnel Decontamination Area	1	LS	\$3,000	\$3,000	per season
<b>Site Security</b>					
Warning Signage (10 14 53 1600)	5	EA	\$125	\$625	
<b>DREDGING, CAPPING, &amp; DREDGE MATERIAL DISPOSAL</b>					
<b>Equipment with Labor</b>					
Mechanical Excavation/Dredging Using Long Reach Excavator	61,546	CY	\$30	\$1,846,380	Assume a 1/2 foot overdredge allowance
Environmental Bucket/Clamshell - 3 CY	2	LS	\$15,000	\$30,000	Rental per season (one working bucket and one backup)
Vessel & Equipment for Water Quality Monitoring	8	MO	\$2,500	\$20,000	
Miscellaneous Tools and Equipment	8	MO	\$5,000	\$40,000	
<b>Material Rehandling/Dewatering/S/S for Transport</b>					
Dredge Material Rehandling/Dewatering/S/S for Transport	61546	CY	\$15	\$923,190	
<b>Capping</b>					
Material Cost	64510	TN	\$15	\$967,650	Material Cost Includes Delivery to the Site
Placement Cost	46078	CY	\$15	\$691,170	

**Table B-4A.** Site-Wide Alternative 4 Cost Estimate

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>Monitoring, Sampling, Testing, and Analysis</b>					
Intensive Water Quality Monitoring	5	DAY	\$1,000	\$5,000	2x/day for 1 week at start of season - 5 day work weeks
Routine Water Quality Monitoring	32	WK	\$4,000	\$128,000	Once per day
Monthly Water Quality Monitoring Report	8	EA	\$7,000	\$56,000	Monthly WQM Report
<b>Transportation and Disposal</b>					
Dredge Material Disposal - non-RCRA Waste	0	TN	\$175	\$0	
Dredge Material Disposal - RCRA Waste	66400	TN	\$275	\$18,260,000	
Dredge Material Disposal - RCRA Waste that requires stabilization	1296	TN	\$900	\$1,166,400	
Decant Water Disposal	2457	1000 GAL	\$1	\$2,457	Assume 15% of dredge material by weight will be decanted off during dewatering
<b>Hydrographic Survey</b>					
Pre-Work Hydrographic Survey	1	LS	\$30,000	\$30,000	
Post-Work Hydrographic Survey	1	LS	\$30,000	\$30,000	
Progress Surveys		EA	\$5,000	\$0	
<b>UPLAND EXCAVATION</b>					
Soil Excavation	14811	CY	\$15	\$222,165	
Soil Rehandling/Loading for Disposal	14811	CY	\$10	\$148,110	
<b>Backfill of Excavated Areas</b>					
Material Cost	21180	TN	\$20	\$423,600	Material Cost Includes Delivery to the Site - Assumes Soil Weighs 1.3 Tons/CY
Backfill with Clean Material	16292	CY	\$4	\$57,022	Backfill Volume = In-Situ Volume to be Excavated +10%
<b>Transportation and Disposal</b>					
Excavated Soil Disposal - non-RCRA Waste	6031	TN	\$175	\$1,055,425	
Excavated Soil Disposal - RCRA Waste	12814	TN	\$275	\$3,523,850	
Excavated Soil Disposal - RCRA Waste that requires stabilization	1890	TN	\$900	\$1,701,000	
<b>Topographic Survey</b>					
Pre-Work Topographic Survey	1	LS	\$10,000	\$10,000	
Post-Work Topographic Survey	1	LS	\$10,000	\$10,000	
<b>MONITORING</b>					
Construction Monitoring	32	WK	\$3,600	\$115,200	
<b>REPORTING ACTIVITIES</b>					
Construction Completion Design Report	1	LS	\$75,000	\$75,000	
<b>SITE RESTORATION</b>					
Restoration of Sediment Acreage Disturbed	12.71	AC	\$10,000	\$127,100	
<b>SUB-TOTAL</b>				\$32,046,699	Cost in 2007 Dollars
25% Contingency				\$8,011,675	15% Scope Contingency and 10% Bid Contingency
<b>Construction Total</b>				\$40,058,374	
<b>Remedial Design</b>				\$2,563,736	8% of Construction Cost Without Contingency
<b>LTM and Maintenance Total</b>				\$2,999,812	From Table B-4B
<b>Project Total</b>				\$45,621,921	

**Table B-4B.** Site-Wide Alternative 4 LTM and Maintenance Cost Estimate

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>GROUNDWATER MONITORING</b>					
Well Sampling Event	9	EA	\$2,500	\$22,500	Assume 2 people - 1 day/sampling event and 9 events total. Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Water Analysis - 6010	18	EA	\$105	\$1,895	Groundwater monitoring for Lead at PZ-24 (1 sample + 1 duplicate)
Water Analysis - EPA 7470/7471	18	EA	\$29	\$526	Groundwater monitoring for Mercury at DP-MW1 (1 sample + 1 duplicate)
<b>SOIL MONITORING</b>					
Soil Sampling	45	DY	\$4,000	\$180,000	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Soil Analysis - Metals (EPA 200.7)*	324	EA	\$565	\$183,199	Metals
Soil Analysis - Mercury (EPA 7470/7471)*	279	EA	\$29	\$8,151	Mercury
Soil Analysis - VOCs (EPA 8260B)*	18	EA	\$153	\$2,758	VOCs
<b>SEDIMENT MONITORING</b>					
Sediment Sampling	36	DY	\$5,000	\$180,000	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Sediment Analysis - 7470/7471	0	EA	\$29	\$0	Total Mercury
<b>SEDIMENT CAP MONITORING/MAINTENANCE</b>					
Limited Bathymetry Survey	40	EA	\$5,000	\$200,000	Similar to progress survey
Sediment Sampling	80	DY	\$5,000	\$400,000	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Sediment Analysis - 7470/7471	480	EA	\$29	\$14,024	Total Mercury
<b>Maintenance</b>					
Placement of Additional Cap Material	20736	CY	\$36	\$746,496	Assume 5% of Cap Volume to Placed for Maintenance Every 5 Years
<b>FISH TISSUE SAMPLING</b>					
Fish Collection and Sampling	45	EA	\$4,000	\$180,000	Assumes 5 Samples Collected and Analyzed per Event
<b>REPORTING</b>					
Monitoring Event Reporting	9	EA	\$10,000	\$90,000	
Yearly Cap Monitoring Report	40	EA	\$3,000	\$120,000	
<b>SITE RESTORATION</b>					
Restoration of Upland Acreage Disturbed	7.03	AC	\$10,000	\$70,300	
<b>SUB-TOTAL</b>				\$2,399,849	Cost in 2007 Dollars
25% Contingency				\$599,962	15% Scope Contingency and 10% Bid Contingency
<b>Total</b>				\$2,999,812	

**Table B-5A. Site-Wide Alternative 5 Cost Estimate**

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>PRE-CONSTRUCTION AND SITE PREPARATION</b>					
<b>Permits</b>					
	1	LS	\$100,000	\$100,000	
<b>Institutional Controls</b>					
AULs	1	LS	\$25,000	\$25,000	
Educational Programs	1	LS	\$7,500	\$7,500	
Permanant Signage	1	LS	\$10,000	\$10,000	
Permanant Fencing	0	LF	\$29	\$0	
<b>Project Submittals</b>					
Work Plan	1	LS	\$250,000	\$250,000	
Waste Management Plan	1	LS	\$50,000	\$50,000	
Site Safety and Health Plan	1	LS	\$30,000	\$30,000	
SAP/QAPP	1	LS	\$15,000	\$15,000	
Environmental Protection Plan	1	LS	\$25,000	\$25,000	
<b>Background WQ Monitoring, Sampling, Testing, and Analysis</b>					
Background Water Quality Monitoring	2	DAY	\$1,000	\$2,000	
<b>Mobilization/Demobilization</b>					
Utility Location	1	LS	\$50,000	\$50,000	
Excavator	4	LS	\$10,000	\$40,000	per season 2 for 2 seasons
Long Reach Excavator	4	LS	\$20,000	\$80,000	per season 2 for 2 seasons
Low Ground Pressure Long Reach Excavator	2	LS	\$40,000	\$80,000	per season (includes assembly)
Small Vessel for Water Quality Monitoring & WQM Equipment	2	LS	\$5,000	\$10,000	per season
Generator	4	LS	\$2,500	\$10,000	per season 2 seasons
Temporary Work Trailer	4	LS	\$375	\$1,500	Assume 50 miles round trip for mob/demob costs @ \$7.50 per mile
Clearing and Grubbing	30	AC	\$3,000	\$90,000	
<b>Temporary Facilities</b>					
Portable Toilet	16	MO	\$760	\$12,160	Rental and Service for 4 Unit
Temporary Work Trailer (01 52 13.20 0550)	16	MO	\$1,640	\$26,240	Rental Cost for 2 units
Generator	16	MO	3200*2	\$6,400	for 2 generators
Temporary Fencing	25000	LF	\$5	\$132,500	Fencing around site trailer, dewatering/rehandling area, and soil excavation work areas
SWPP Controls	100000	LF	\$2	\$200,000	Installation and Maintenance for the duration of the soil excavation work
Equipment Decontamination Area	2	LS	\$15,000	\$30,000	per season
Personnel Decontamination Area	2	LS	\$3,000	\$6,000	per season
<b>Site Security</b>					
Warning Signage (10 14 53 1600)	5	EA	\$125	\$625	
<b>DREDGING, CAPPING, &amp; DREDGE MATERIAL DISPOSAL</b>					
<b>Equipment with Labor</b>					
Mechanical Excavation/Dredging Using Long Reach Excavator	257,218	CY	\$30	\$7,716,540	
Environmental Bucket/Clamshell - 3 CY	4	LS	\$15,000	\$60,000	Rental per season (two working bucket and two backups for each)
Vessel & Equipment for Water Quality Monitoring	16	MO	\$2,500	\$40,000	
Miscellaneous Tools and Equipment	16	MO	\$5,000	\$80,000	
<b>Material Rehandling/Dewatering/S/S for Transport</b>					
Dredge Material Rehandling/Dewatering/S/S for Transport	257218	CY	\$15	\$3,858,270	
<b>Capping</b>					
Material Cost	314276	TN	\$15	\$4,714,140	Material Cost Includes Delivery to the Site
Placement Cost	241750	CY	\$15	\$3,626,250	

**Table B-5A.** Site-Wide Alternative 5 Cost Estimate

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>Monitoring, Sampling, Testing, and Analysis</b>					
Intensive Water Quality Monitoring	10	DAY	\$1,000	\$10,000	2x/day for 1 week at start of season - 5 day work weeks
Routine Water Quality Monitoring	67	WK	\$4,000	\$268,000	Once per day
Monthly Water Quality Monitoring Report	16	EA	\$7,000	\$112,000	Monthly WQM Report
<b>Transportation and Disposal</b>					
Dredge Material Disposal - non-RCRA Waste	0	TN	\$175	\$0	
Dredge Material Disposal - RCRA Waste	256426	TN	\$275	\$70,517,150	
Dredge Material Disposal - RCRA Waste that requires stabilization	1296	TN	\$900	\$1,166,400	
Decant Water Disposal	14920	1000 GAL	\$1	\$14,920	Assume 15% of dredge material by weight will be decanted off during dewatering
<b>Hydrographic Survey</b>					
Pre-Work Hydrographic Survey	1	LS	\$30,000	\$30,000	
Post-Work Hydrographic Survey	1	LS	\$30,000	\$30,000	
Progress Surveys	16	EA	\$5,000	\$80,000	One each month
<b>UPLAND EXCAVATION</b>					
Soil Excavation	49575	CY	\$15	\$743,625	
Soil Rehandling/Loading for Disposal	49575	CY	\$10	\$495,750	
<b>Backfill of Excavated Areas</b>					
Material Cost	70892	TN	\$20	\$1,417,840	Material Cost Includes Delivery to the Site - Assumes Soil Weighs 1.3 Tons/CY
Backfill with Clean Material	54533	CY	\$4	\$190,866	Backfill Volume = In-Situ Volume to be Excavated +10%
<b>Transportation and Disposal</b>					
Excavated Soil Disposal - non-RCRA Waste	48758	TN	\$175	\$8,532,650	
Excavated Soil Disposal - RCRA Waste	16850	TN	\$275	\$4,633,750	
Excavated Soil Disposal - RCRA Waste that requires stabilization	3800	TN	\$900	\$3,420,000	
<b>Topographic Survey</b>					
Pre-Work Topographic Survey	1	LS	\$20,000	\$20,000	
Post-Work Topographic Survey	1	LS	\$10,000	\$10,000	
<b>MONITORING</b>					
Construction Monitoring	69	WK	\$3,600	\$247,680	
<b>REPORTING ACTIVITIES</b>					
Construction Completion Design Report	1	LS	\$150,000	\$150,000	
<b>SITE RESTORATION</b>					
Restoration of Sediment Acreage Disturbed	53.14	AC	\$10,000	\$531,400	
<b>SUB-TOTAL</b>				\$114,007,156	Cost in 2007 Dollars
25% Contingency				\$28,501,789	15% Scope Contingency and 10% Bid Contingency
<b>Construction Total</b>				\$142,508,944	
<b>Remedial Design</b>				\$9,120,572	8% of Construction Cost Without Contingency
<b>LTM and Maintenance Total</b>				\$6,753,037	From Table B-5B
<b>Project Total</b>				\$158,382,554	

**Table B-5B.** Site-Wide Alternative 5 LTM and Maintenance Cost Estimate

Task	Quantity	Unit	Unit Cost	Total Cost	Notes
<b>GROUNDWATER MONITORING</b>					
Well Sampling Event	9	EA	\$2,500	\$22,500	Assume 2 people - 1 day/sampling event and 9 events total. Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Water Analysis - 6010	18	EA	\$105	\$1,895	Groundwater monitoring for Lead at PZ-24 (1 sample + 1 duplicate)
Water Analysis - EPA 7470/7471	18	EA	\$29	\$526	Groundwater monitoring for Mercury at DP-MW1 (1 sample + 1 duplicate)
<b>SOIL MONITORING</b>					
Soil Sampling	0	DY	\$4,000	\$0	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Soil Analysis - Metals (EPA 200.7)*	0	EA	\$565	\$0	Metals
Soil Analysis - Mercury (EPA 7470/7471)*	0	EA	\$29	\$0	Mercury
Soil Analysis - VOCs (EPA 8260B)*	0	EA	\$153	\$0	VOCs
<b>SEDIMENT MONITORING</b>					
Sediment Sampling	0	DY	\$5,000	\$0	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Sediment Analysis - 7470/7471	0	EA	\$29	\$0	Total Mercury
<b>SEDIMENT CAP MONITORING/MAINTENANCE</b>					
Limited Bathymetry Survey	40	EA	\$5,000	\$200,000	Similar to progress survey
Sediment Sampling	120	DY	\$5,000	\$600,000	Includes miscellaneous equipment, PPE, decon solution, and disposal costs.
Sediment Analysis - 7470/7471	1280	EA	\$29	\$37,397	Total Mercury
<b>Maintenance</b>					
Placement of Additional Cap Material	108792	CY	\$36	\$3,916,512	Assume 5% of Cap Volume to Placed for Maintenance Every 5 Years
<b>FISH TISSUE SAMPLING</b>					
Fish Collection and Sampling	45	EA	\$4,000	\$180,000	Assumes 5 Samples Collected and Analyzed per Event
<b>REPORTING</b>					
Monitoring Event Reporting	9	EA	\$3,000	\$27,000	
Yearly Cap Monitoring Report	40	EA	\$3,000	\$120,000	
<b>SITE RESTORATION</b>					
Restoration of Upland Acreage Disturbed	29.66	AC	\$10,000	\$296,600	
<b>SUB-TOTAL</b>				\$5,402,430	Cost in 2007 Dollars
25% Contingency				\$1,350,607	15% Scope Contingency and 10% Bid Contingency
<b>Total</b>				\$6,753,037	