SITE-WIDE ALTERNATIVE 2

APPENDIX B-5

Rev. 11 - 6/9/09

A-1 A-2 A-3 A-4 A-5 A-6 A-7 A-7 A-10 A-11 A-12 A-13 3. DRE 3-1 3-2	-CONSTRUCTION AND SITE PRE Permits Submittals Non-Engineering Measures Erosion Control Drying Bed Construction Construction Field Staff / CQC Survey - In Water and On Shore Mobilization / Demobilization Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities CIGING and DREDGE MATERIAL Equipment/ Material Rehandling/	Permits, Work Plan, CQA Plan, SHSO Plan Pre-Construction Submittals Permanent Signage Permanent Fencing Silt Fence & Hay Bales Field Construction Field Crew RTK Survey / Field Survey Mob / Demob of Equipment Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	Quantity TE 1 1 500 4,000 1 2 2 1 2 1 2.5 1	Units LS LS LF LF Each Month LS Month LS Ac	Unit Cost \$30,000 \$50,000 \$25 \$7 \$75,000 \$45,000 \$10,000 \$75,000 \$25,000	Total Cost \$30,000 \$50,000 \$12,500 \$28,000 \$75,000 \$90,000 \$20,000 \$75,000	Additional Notes Per KF Est. of 6/8/09 1 Area ECC and CWA
A-1 A-2 A-3 A-4 A-5 A-6 A-7 A-7 A-10 A-11 A-12 A-13 3. DRE 3-1 3-2	Permits Submittals Non-Engineering Measures Non-Engineering Measures Erosion Control Drying Bed Construction Construction Field Staff / CQC Survey - In Water and On Shore Mobilization / Demobilization Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities CIGING and DREDGE MATERIAL Equipment/ Material Rehandling/	Permits, Work Plan, CQA Plan, SHSO Plan Pre-Construction Submittals Permanent Signage Permanent Fencing Silt Fence & Hay Bales Field Construction Field Crew RTK Survey / Field Survey Mob / Demob of Equipment Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	1 1 500 4,000 1 2 2 1 2 1 2 1 2.5	LS LF LF Each Month LS Month LS Ac	\$50,000 \$25 \$7 \$75,000 \$45,000 \$10,000 \$75,000 \$25,000	\$50,000 \$5,000 \$12,500 \$28,000 \$75,000 \$90,000 \$20,000 \$75,000	1 Area
3 4 5 6 7 8 9 10 11 13 DRE 1	Non-Engineering Measures Non-Engineering Measures Erosion Control Drying Bed Construction Construction Field Staff / CQC Survey - In Water and On Shore Mobilization / Demobilization Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities EDGING and DREDGE MATERIAL Equipment/ Material Rehandling/	Pre-Construction Submittals Permanent Signage Permanent Fencing Silt Fence & Hay Bales Field Construction Field Crew RTK Survey / Field Survey Mob / Demob of Equipment Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	1 500 4,000 1 2 2 1 2 1 2.5	LS LF Each Month LS Month LS Ac	\$5,000 \$25 \$7 \$75,000 \$45,000 \$10,000 \$75,000 \$25,000	\$50,000 \$5,000 \$12,500 \$28,000 \$75,000 \$90,000 \$20,000 \$75,000	
3 4 5 6 7 8 9 10 11 13 DRE 1	Non-Engineering Measures Non-Engineering Measures Erosion Control Drying Bed Construction Construction Field Staff / CQC Survey - In Water and On Shore Mobilization / Demobilization Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities EDGING and DREDGE MATERIAL Equipment/ Material Rehandling/	Submittals Permanent Signage Permanent Fencing Silt Fence & Hay Bales Field Construction Field Crew RTK Survey / Field Survey Mob / Demob of Equipment Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	1 500 4,000 1 2 2 1 2 1 2.5	LS LF Each Month LS Month LS Ac	\$5,000 \$25 \$7 \$75,000 \$45,000 \$10,000 \$75,000 \$25,000	\$5,000 \$12,500 \$28,000 \$75,000 \$90,000 \$20,000 \$75,000	
4 5 6 7 8 9 10 11 12 13 DRE 1	Non-Engineering Measures Erosion Control Drying Bed Construction Construction Field Staff / CQC Survey - In Water and On Shore Mobilization / Demobilization Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities	Permanent Signage Permanent Fencing Silt Fence & Hay Bales Field Construction Field Crew RTK Survey / Field Survey Mob / Demob of Equipment Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	500 4,000 1 2 2 1 2 1 2.5	LF LF Each Month LS Month LS Ac	\$25 \$7 \$75,000 \$45,000 \$10,000 \$75,000 \$25,000	\$12,500 \$28,000 \$75,000 \$90,000 \$20,000 \$75,000	
4 5 6 7 8 9 10 11 12 13 DRE 1 2	Non-Engineering Measures Erosion Control Drying Bed Construction Construction Field Staff / CQC Survey - In Water and On Shore Mobilization / Demobilization Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities	Permanent Fencing Silt Fence & Hay Bales Field Construction Field Crew RTK Survey / Field Survey Mob / Demob of Equipment Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	4,000 1 2 2 1 2 1 2.5	LF LF Each Month LS Month LS Ac	\$25 \$7 \$75,000 \$45,000 \$10,000 \$75,000 \$25,000	\$12,500 \$28,000 \$75,000 \$90,000 \$20,000 \$75,000	
5 6 7 8 9 10 11 12 13 DRE 1	Erosion Control Drying Bed Construction Construction Field Staff / CQC Survey - In Water and On Shore Mobilization / Demobilization Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities CIGING and DREDGE MATERIAL Equipment/ Material Rehandling/	Silt Fence & Hay Bales Field Construction Field Crew RTK Survey / Field Survey Mob / Demob of Equipment Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	4,000 1 2 2 1 2 1 2.5	LF Each Month LS Month LS Ac	\$7 \$75,000 \$45,000 \$10,000 \$75,000 \$25,000	\$28,000 \$75,000 \$90,000 \$20,000 \$75,000	
6 7 8 9 10 11 12 13 DRE 1	Drying Bed Construction Construction Field Staff / CQC Survey - In Water and On Shore Mobilization / Demobilization Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities CIC AND CONTRACT CONTRAC	Field Construction Field Crew RTK Survey / Field Survey Mob / Demob of Equipment Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	1 2 2 1 2 1 2.5	Each Month LS Month LS Ac	\$75,000 \$45,000 \$10,000 \$75,000 \$25,000	\$75,000 \$90,000 \$20,000 \$75,000	
7 8 9 10 11 12 13 DRE 1	Construction Field Staff / CQC Survey - In Water and On Shore Mobilization / Demobilization Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities CIC And DREDGE MATERIAL Equipment/ Material Rehandling/	Field Crew RTK Survey / Field Survey Mob / Demob of Equipment Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	2 2 1 2 1 2.5	Month Month LS Month LS Ac	\$45,000 \$10,000 \$75,000 \$25,000	\$90,000 \$20,000 \$75,000	
3 9 10 11 12 13 DRE 1	Survey - In Water and On Shore Mobilization / Demobilization Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities EDGING and DREDGE MATERIAL Equipment/ Material Rehandling/	RTK Survey / Field Survey Mob / Demob of Equipment Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	2 1 2 1 2.5	Month LS Month LS Ac	\$10,000 \$75,000 \$25,000	\$20,000 \$75,000	
9 10 11 12 13 DRE 1	Mobilization / Demobilization Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities COGING and DREDGE MATERIAL Equipment/ Material Rehandling/	Mob / Demob of Equipment Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	1 2 1 2.5	LS Month LS Ac	\$75,000 \$25,000	\$75,000	
10 11 12 13 DRE 1	Site Security Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities COGING and DREDGE MATERIAL Equipment/ Material Rehandling/	Off duty hours Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	2 1 2.5	Month LS Ac	\$25,000		
11 12 13 DRE 1 2	Soil Characterizations Clearing/Grubbing/Reclamation Temporary Facilities DGING and DREDGE MATERIAL Equipment/ Material Rehandling/	Analytical Sampling Seed / Mulch / Trees Access Roads / Site Offices	1 2.5	LS Ac		\$50,000	
12 13 DRE 1 2	Clearing/Grubbing/Reclamation Temporary Facilities EDGING and DREDGE MATERIAL Equipment/ Material Rehandling/	Seed / Mulch / Trees Access Roads / Site Offices	2.5	Ac	©25 000	\$25,000	
13 DRE 1 2	Temporary Facilities DGING and DREDGE MATERIAL Equipment/ Material Rehandling/	Access Roads / Site Offices			\$25,000		
<mark>. DRE</mark> ·1 ·2	DGING and DREDGE MATERIAL Equipment/ Material Rehandling/		1		\$50,000	\$125,000	
·1 ·2	Equipment/ Material Rehandling/			LS	\$75,000	\$75,000	
2				.	4		
2	Dewatering/ Solidification/ Stabilization for Transport	Mechanical Excavation /Dredging Using Long Reach Excavator	2,529	CY	\$95	\$240,255	
3	Silt Curtain	Sediment Control Silt Curtain	1,500	LF	\$60	\$90,000	
	Backfill	Material Cost (1.6 TN/CY)	4,046	TN	\$20	\$80,928	
-4	Backfill	Placement Cost	4,046	TN	\$27	\$109,253	
-5	Transportation and Disposal	Dredge Material Disposal - Non-Hazardous Waste (1.6 TN/CY)	3,712	TN	\$175	\$649,600	Per LD Quotes
6	Transportation and Disposal	Dredge Material Disposal - Hazardous Waste	334	TN	\$275	\$91,850	Per LD Quotes
7	Transportation and Disposal	Decant Water Management	126,450	GAL	\$0.50	\$63,225	Assumes 50 gallons/CY of wa treated and discharged on-site
UPL	AND EXCAVATION and MATERIA	AL DISPOSAL					
1	Soil Excavation		1,054	CY	\$15	\$15,810	
2	Soil Rehandling/Loading for Dispos	al	1,054	CY	\$4	\$4,216	
3	Backfill of Excavated Areas	Material Cost	1,686	TN	\$20	\$33,728	
	Backfill of Excavated Areas	Backfill with Clean Material	1,686	TN	\$10	\$16,864	
	Confirmatory Sampling	Analytical Sampling	0.28	Acre	\$15,000	\$4,139	
	Transportation and Disposal	Excavated Soil Disposal -	183	TN	\$175	\$32,025	Per LD Quotes
0	Transportation and Disposal	Non-Hazardous Waste	105	IIN	ψΠΟ	Ψ 3 Ζ,0Ζ3	T ET ED QUOIES
7	Transportation and Disposal	Excavated Soil Disposal - Hazardous Waste	1,503	TN	\$275	\$413,325	Per LD Quotes
8	Transportation and Disposal	Excavated Soil Disposal - Hazardous Waste that Requires Stabilization	0	TN	\$900	\$0	Per LD Quotes
	D WASTE AREA						
	Field Effort		1	LS	\$630,357	\$630,357	Per CWA Cost Est. 3-27-09
	G TERM MONITORING and MAIN						
	Long Term Monitoring and Maintenance	Various Media	1	LS	\$0	\$1,080,085	Per JS Cost Est. 5-19-09
	25% Contingency				SUBTOTAL	\$4,216,160 \$1,054,040	
	Remedial Design/ Completion Re	port	1	LS	\$225,000	\$225,000	
	Plans/ Completion Report for CW		1	LS	\$60,100	\$60,100	
	Project Management / Constructi		2	Month	\$105,000	\$210,000	_
			I	Des de la	d Dusiant Tatal	#E 70E 000	7
				Revise	d Project Total	\$5,765,300	

- 1 4" of stone applied for road improvements
- 2 Conversion factor of 1.60 Tons/CY used for sediments and soil
- 3 Field Staff with per diems includes SUPT, SHSO, FE, QC, and Field Clerk
- 4 No bond insurance included
- 5 Silt fence, hay bales, and silt curtains used for erosion and sediment migration control
- 6 Reclamation per local specifications, including tree planting @ 215 trees/acre; Includes topsoil placement
- 7 Roads to be left in place
- 8 Drying bed constructed of 6" of stone and 4" of asphalt; Removed following completion of the work
- 9 Assumes 50 gallon of water/CY of sediment generated; Assumed treated and discharged on-site
- 10 Assumes use of a long reach excavator to excavate sediments in areas after water level is lowered
- 11 Assumes use of an excavator mounted on a barge for sediment removal in areas that can not be reached from shore
- 12 Assumes work schedule is 10 hours/day for 5 days/week
- 13 Costs expressed in 2010 dollars (escalation included)
- 14 Site security assumed for non-work hours and weekends @ \$50/hour
- 15 Analytical sampling costs included in post-remedial surveys and monitoring
- 16 Assumes chain-link fencing with gates to be placed around the field office complex and drying beds
- 17 Assumes use of a RTK surveying system to verify excavation elevations with topographic map of soil areas
- 18 Site field office includes rental, electricity, potable water, and cell phone coverage
- 19 Field work to be completed in one work season with reclcamation

SITE-WIDE ALTERNATIVE 3		APPEND	DIX B-5		Rev. 11 - 6/9/09		
Compon		Decscription	Quantity	Units	Unit Cost	Total Cost	Additional Notes
A-1	CONSTRUCTION AND SITE PREPA Permits		4	LS	\$40,000	\$40,000	Per KF Est. of 6/8/09
A-1	Permis	Permits, Work Plan, CQA Plan, SHSO Plan	1	LS	\$40,000	\$40,000	Per KF ESI. 01 0/8/09
A-2	Submittals	Pre-Construction Submittals	1	LS	\$100,000	\$100,000	
A-3	Non-Engineering Measures	Permanent Signage	1	LS	\$5,000	\$5,000	
A-4	Non-Engineering Measures	Permanent Fencing	1,500	LF	\$25	\$37,500	2 Areas
A-5	Erosion Control	Silt Fence & Hay Bales	6,000	LF	\$7	\$42,000	ECC and Factory Pond areas
A-6	Drying Bed Construction	Field Construction	2	Each	\$75,000	\$150,000	· · · · · · · · · · · · · · · · · · ·
A-7	Construction Field Staff / CQC	Field Crew	6	Month	\$45,000	\$270,000	
A-8	Survey - In Water and On Shore	RTK Survey / Field Survey	6	Month	\$10,000	\$60,000	
A-9	Mobilization / Demobilization	Mob / Demob of Equipment	1	LS	\$100,000	\$100,000	
A-10	Site Security	Off duty hours	6	Month	\$25,000	\$150,000	
A-11	Soil Characterizations	Analytical Sampling	1	LS	\$50,000	\$50,000	
A-12	Clearing/Grubbing/Reclamation	Seed / Mulch / Trees	3	Ac	\$50,000	\$150,000	
A-13	Temporary Facilities	Temporary Dock and Access Roads / Site Offices	1	LS	\$100,000	\$100,000	
	GING and DREDGE MATERIAL DI						
B-1	Equipment/ Material Rehandling/	Mechanical Excavation	24,487	CY	\$95	\$2,326,265	
	Dewatering/ Solidification/ Stabilization for Transport	/Dredging Using Long Reach Excavator					
B-2	Silt Curtain	Sediment Control Silt Curtain	3,000	LF	\$60	\$180,000	
			-,			•••••	
B-3	Backfill	Material Cost (1.6 TN/CY)	39,179	TN	\$20	\$783,584	
B-4	Backfill	Placement Cost	39,179	TN	\$27	\$1,057,838	
B-5	Transportation and Disposal	Dredge Material Disposal - Non-Hazardous Waste (1.6	38,189	TN	\$175	\$6,683,075	Per LD Quotes
B-6	Transportation and Disposal	TN/CY) Dredge Material Disposal -	990	TN	\$275	\$272,250	Per LD Quotes
B-7	Transportation and Disposal	Hazardous Waste Decant Water Management	1,224,350	GAL	\$0.50	\$612,175	Assumes 50 gallons/CY of water treated
C. UPLA	ND EXCAVATION and MATERIAL	DISPOSAL					and discharged on-site
C-1	Soil Excavation		2,105	CY	\$15	\$31,575	
C-2	Soil Rehandling/Loading for Disposal		2,105	CY	\$4	\$8,420	
C-3	Backfill of Excavated Areas	Material Cost	3,368	TN	\$20	\$67,360	
C-4	Backfill of Excavated Areas	Backfill with Clean Material	3,368	TN	\$4	\$13,472	
C-5	Confirmatory Sampling	Analytical Sampling	0.85	Acre	\$15,000	\$12,750	
C-6	Transportation and Disposal	Excavated Soil Disposal - Non-Hazardous Waste	213	TN	\$175	\$37,275	Per LD Quotes
C-7	Transportation and Disposal	Excavated Soil Disposal -	3,157	TN	\$275	\$868,175	Per LD Quotes
C-8	Transportation and Disposal	Hazardous Waste Excavated Soil Disposal -	0	TN	\$900	\$0	Per LD Quotes
		Hazardous Waste that Requires Stabilization					
D. COLD	WASTE AREA						
D-1	Field Effort		1	LS	\$630,357	\$630,357	Per CWA Cost Est. 3-27-09
	TERM MONITORING and MAINTE						
E-1	Long Term Monitoring and Maintenance	Various Media	1	LS	\$0	\$1,080,085	Per JS Cost Est. 5-19-09
	25% Contingency				SUBTOTAL	\$15,919,156 \$3,979,789	
	Pomodial Design/ Completion D	anort	1	10	\$650 000	\$650 000	
	Remedial Design/ Completion Re Plans/ Completion Report for CV		1	LS LS	\$650,000 \$60,100	\$650,000 \$60,100	
	Project Management / Construct		6	Month	\$60,100 \$105,000	\$630,000	
	Froject wanagement / Construct	ion guancy Assurance	0	WORTH	φ103,000	φ030,000	-
				Revise	d Project Total	\$21,239,046]

NOTES AND ASSUMPTIONS:

4" of stone applied for road improvements 1

- 2 Conversion factor of 1.60 Tons/CY used for sediments and soil
- 3 Field Staff with per diems includes SUPT, SHSO, FE, QC, and Field Clerk
- 4 No bond insurance included
- 5 Silt fence, hay bales, and silt curtains used for erosion and sediment migration control
- Reclamation per local specifications, including tree planting @ 215 trees/acre; Includes topsoil placement 6
- 7 Roads to be left in place
- Drying bed constructed of 6" of stone and 4" of asphalt; Removed following completion of the work Assumes 50 gallon of water/CY of sediment generated; Assumed treated and discharged on-site Assumes use of a long reach excavator to excavate sediments in areas after water level is lowered 8
- 9
- 10
- Assumes use of an excavator mounted on a barge for sediment removal in areas that can not be reached from shore 11
- Assumes work schedule is 10 hours/day for 5 days/week 12
- Costs expressed in 2010 dollars (escalation included) 13
- Site security assumed for non-work hours and weekends @ \$50/hour 14
- Analytical sampling costs included in post-remedial surveys and monitoring 15
- Assumes chain-link fencing with gates to be placed around the field office complex and drying beds 16
- Assumes use of a RTK surveying system to verify excavation elevations with topographic map of soil areas 17
- 18 Site field office includes rental, electricity, potable water, and cell phone coverage
- 19 Field work to be completed in one work season with reclcamation completed the following season

SITE-WIDE ALTERNATIVE 4-1

APPENDIX B-5

Rev. 11 - 6/9/09

SITE-W	IDE ALTERNATIVE 4-1	APPEND	DIX B-5				Rev. 11 - 6/9/09	
Compo	nent	Decscription	Quantity	Units	Unit Cost	Total Cost	Additional Notes	
A. PRE	-CONSTRUCTION AND SITE PREPA	RATION and FIELD OVERSIT	E					
A-1	Permits	Permits, Work Plan, CQA Plan, SHSO Plan	1	LS	\$40,000	\$40,000	Per KF Est. of 6/8/09	
A-2	Submittals	Pre-construction Submittals	1	LS	\$100,000	\$100,000		
A-3	Non-engineering Measures	Permanent Signage	1	LS	\$5,000	\$5,000		
A-4	Non-engineering Measures	Permanent Fencing	1,500	LF	\$25	\$37,500	2 Areas	
A-5	Erosion Control	Silt Fence and Hay Bales	6,000	LF	\$7	\$42,000	ECC and Factory Pond areas	
A-6	Drying Bed Construction	Field Construction	2	Each	\$75,000	\$150,000		
A-7	Construction Field Staff/CQC	Field Crew	8	Month	\$45,000	\$360,000		
A-8	Survey - In Water and On Shore	RTK Survey/Field Survey	8	Month	\$10,000	\$80,000		
A-9	Mobilization/Demobilization	Mob/Demob of Equipment	1	LS	\$100,000	\$100,000		
A-10	Site Security	Off-duty Hours	8	Month	\$25,000	\$200,000		
A-11	Soil Characterizations	Analytical Sampling	1	LS	\$50,000	\$50,000		
A-12	Clearing/Grubbing/Reclamation	Seed/Mulch/Trees	7	Ac	\$50,000	\$350,000		
A-13	Temporary Facilities	Temporary Dock and Access Roads/Site Offices	1	LS	\$120,000	\$120,000		
B. DRE	DGING and DREDGE MATERIAL DI							
B-1	Equipment/Material	Mechanical Excavation	24,487	CY	\$95	\$2,326,265		
	Rehandling/Dewatering/Solidification							
	/Stabilization for Transport	Reach Excavator						
B-2	Silt Curtain	Sediment Control Silt Curtain	3,000	LF	\$60	\$180,000		
B-3	Backfill	Material Cost (1.6 TN/CY)	39,179	TN	\$20	\$783,584		
B-4	Backfill	Placement Cost	39,179	TN	\$27	\$1,057,838		
B-5	Transportation and Disposal	Dredge Material Disposal - Non-hazardous Waste (1.6 TN/CY)	38,189	TN	\$175	\$6,683,040	Per LD Quotes	
B-6	Transportation and Disposal	Dredge Material Disposal - Hazardous Waste	990	TN	\$275	\$272,360	Per LD Quotes	
B-7	Transportation and Disposal	Decant Water Management	1,224,350	GAL	\$0.50	\$612,175	Assumes 50 gallons/CY of water treated and discharged on-site	
	AND EXCAVATION and MATERIAL	DISPOSAL						
C-1	Soil Excavation		9,578	CY	\$15	\$143,670		
C-2	Soil Rehandling/Loading for Dispos	sal	9,578	CY	\$4	\$38,312		
C-3	Backfill of Excavated Areas	Material Cost	15,325	TN	\$20	\$306,496		
C-4	Backfill of Excavated Areas	Backfill with Clean Material	15,325	TN	\$4	\$61,299		
C-5	Confirmatory Sampling	Analytical Sampling	5.80	Acre	\$15,000	\$87,000		
C-6	Transportation and Disposal	Excavated Soil Disposal - Non-hazardous Waste	4,989	TN	\$175	\$873,040	Per LD Quotes	
C-7	Transportation and Disposal	Excavated Soil Disposal - Hazardous Waste	10,338	TN	\$275	\$2,842,840	Per LD Quotes	
C-8	Transportation and Disposal	Excavated Soil Disposal - Hazardous Waste that Requires Stabilization	0	TN	\$900	\$0	Per LD Quotes	
D. COL	D WASTE AREA							
D-1	Field Effort		1	LS	\$630,357	\$630,357	Per CWA Cost Est. 3-27-09	
	IG-TERM MONITORING and MAINTE	NANCE			÷==0,00.	+==0,001		
E-1	Long-erm Monitoring and Maintenance	Various Media	1	LS	\$0	\$1,330,876	Per JS Cost Est. 5-19-09	
	25% Contingency				SUBTOTAL	\$19,863,653 \$4,965,913		
	Remedial Design/Completion Re		1	LS	\$650,000	\$650,000		
	Plans/Completion Report for CW		1	LS	\$60,100	\$60,100		
	Project Management/Construction	on Quality Assurance	8	Month	\$105,000	\$840,000	-	
				Revise	ed Project Total	\$26,379,666]	

- 4 inches of stone applied for road improvements. 1
- 2 Conversion factor of 1.60 Tons/CY used for sediments and soil.
- Field staff with per diems includes SUPT, SHSO, FE, QC, and Field Clerk. 3
- No bond insurance included. 4
- Silt fence, hay bales, and silt curtains used for erosion and sediment migration control. 5
- Reclamation per local specifications, including tree planting @ 215 trees/acre; Includes topsoil placement. 6
- Roads to be left in place. 7
- Drying bed constructed of 6 inches of stone and 4inches of asphalt. Removed following completion of the work. 8
- Assumes 50 gallon of water/CY of sediment generated. Assumed treated and discharged on-site. 9
- 10
- Assumes use of a long reach excavator to excavate sediments in areas after water level is lowered. Assumes use of an excavator mounted on a barge for sediment removal in areas that can not be reached from shore. 11
- Assumes work schedule is 10 hours/day for 5 days/week. 12
- Costs expressed in 2010 dollars (escalation included). 13
- Site security assumed for non-work hours and weekends @ 50/hour.14
- 15 Analytical sampling costs included in post-remedial surveys and monitoring.
- Assumes chain-link fencing with gates to be placed around the field office complex and drying beds. 16
- 17 Assumes use of an RTK surveying system to verify excavation elevations with topographic map of soil areas.
- 18 Site field office includes rental, electricity, potable water, and cell phone coverage.
- 19 Field work to be completed in one work season with reclamation completed the following season.

SITE-WIDE ALTERNATIVE 4-2

APPENDIX B-5

Rev. 11 - 6/9/09

5112-11		AFFENDIA	D- J				Nev. 11 - 0/3/03
Compo	nent 	Decscription	Quantity	Units	Unit Cost	Total Cost	Additional Notes
A-1	Permits	Permits, Work Plan, CQA	1	LS	\$40,000	\$40,000	Per KF Est. of 6/8/09
		Plan, SHSO Plan					
A-2	Submittals	Pre-construction Submittals	1	LS	\$100,000	\$100,000	
A-3	Non-engineering Measures	Permanent Signage	1	LS	\$5,000	\$5,000	
A-4	Non-engineering Measures	Permanent Fencing	1,500	LF	\$25	\$37,500	2 Areas
A-5	Erosion Control	Silt Fence and Hay Bales	6,000	LF	\$7	\$42,000	ECC and Factory Pond areas
A-6	Drying Bed Construction	Field Construction	2	Each	\$75,000	\$150,000	
A-7	Construction Field Staff/CQC	Field Crew	8	Month	\$45,000	\$360,000	
A-8	Survey - In Water and On Shore	RTK Survey/Field Survey	8	Month	\$10,000	\$80,000	
A-9	Mobilization/Demobilization	Mob/Demob of Equipment	1	LS	\$100,000	\$100,000	
A-10	Site Security	Off-duty Hours	8	Month	\$25,000	\$200,000	
A-11	Soil Characterizations	Analytical Sampling	1	LS	\$50,000	\$50,000	
A-12	Clearing/Grubbing/Reclamation	Seed/Mulch/Trees	8	Ac	\$50,000	\$400,000	
A-13	Temporary Facilities	Temporary Dock and	1	LS	\$120,000	\$120,000	
		Access Roads/Site Offices					
	EDGING and DREDGE MATERIAL DISPO						
B-1	Equipment/Material	Mechanical	24,487	CY	\$95	\$2,326,265	
	Rehandling/Dewatering/Solidification/S	Excavation/Dredging Using					
	abilization for Transport	Long Reach Excavator					
B-2	Silt Curtain	Sediment Control Silt	3,000	LF	\$60	\$180,000	
D-2		Curtain	3,000		400	\$100,000	
B-3	Backfill	Material Cost (1.6 TN/CY)	39,179	TN	\$20	\$783,584	
в-з В-4	Backfill	Placement Cost	39,179	TN	\$20 \$27	\$1,057,838	
в-4 В-5		Dredge Material Disposal -	38,189	TN	\$175	\$6,683,075	Per LD Quotes
D-0	Transportation and Disposal	Non-hazardous Waste (1.6	30,109	T IN	\$175	ф0,003,075	Per LD Quoles
		TN/CY)					
B-6	Transportation and Disposal	Dredge Material Disposal -	990	TN	\$275	\$272,250	Per LD Quotes
		Hazardous Waste				. ,	
B-7	Transportation and Disposal	Decant Water Management	1,224,350	GAL	\$0.50	\$612,175	Assumes 50 gallons/CY of
		0					water treated and discharged
							on-site
C. UPL	AND EXCAVATION and MATERIAL DISI	OSAL					
C-1	Soil Excavation		15,465	CY	\$15	\$231,975	
C-2	Soil Rehandling/Loading for Disposal		15,465	CY	\$4	\$61,860	
C-3	Backfill of Excavated Areas	Material Cost	24,744	TN	\$20	\$494,880	
C-4	Backfill of Excavated Areas	Backfill with Clean Material	24,744	TN	\$4	\$98,976	
C-5	Confirmatory Sampling	Analytical Sampling	5.80	Acre	\$15,000	\$87,000	
C-6	Transportation and Disposal	Excavated Soil Disposal -	12,653	TN	\$175	\$2,214,275	Per LD Quotes
		Non-hazardous Waste					
C-7	Transportation and Disposal	Excavated Soil Disposal -	12,093	TN	\$275	\$3,325,575	Per LD Quotes
		Hazardous Waste					
C-8	Transportation and Disposal	Excavated Soil Disposal -	0	TN	\$900	\$0	Per LD Quotes
		Hazardous Waste that					
		Requires Stabilization					
D. COL	D WASTE AREA						
D-1	Field Effort		1	LS	\$630,357	\$630,357	Per CWA Cost Est. 3-27-09
	IG-TERM MONITORING and MAINTENAM	ICE					
E-1	Long-term Monitoring and Maintenance	Various Media	1	LS	\$0	\$1,330,876	Per JS Cost Est. 5-19-09
					SUBTOTAL	\$22,075,461	
	25% Contingency					\$5,518,865	

Remedial Design/Completion Report	1	LS	\$650,000	\$650,000
Plans/Completion Report for CWA	1	LS	\$60,100	\$60,100
Project Management/Construction Quality Assurance	8	Month	\$105.000	\$840.000

Revised Project Total \$29,144,427

- 1 4inches of stone applied for road improvements.
- 2 Conversion factor of 1.60 Tons/CY used for sediments and soil.
- 3 Field staff with per diems includes SUPT, SHSO, FE, QC, and Field Clerk.
- 4 No bond insurance included.
- 5 Silt fence, hay bales, and silt curtains used for erosion and sediment migration control.
- 6 Reclamation per local specifications, including tree planting @ 215 trees/acre; Includes topsoil placement.
- 7 Roads to be left in place.
- 8 Drying bed constructed of 6 inches of stone and 4 inches of asphalt. Removed following completion of the work.
- Assumes 50 gallon of water/CY of sediment generated. Assumed treated and discharged on-site.
- 10 Assumes use of a long reach excavator to excavate sediments in areas after water level is lowered.
- 11 Assumes use of an excavator mounted on a barge for sediment removal in areas that can not be reached from shore.
- 12 Assumes work schedule is 10 hours/day for 5 days/week.
- 13 Costs expressed in 2010 dollars (escalation included).
- 14 Site security assumed for non-work hours and weekends @ \$50/hour.
- 15 Analytical sampling costs included in post-remedial surveys and monitoring.
- 16 Assumes chain-link fencing with gates to be placed around the field office complex and drying beds.
- 17 Assumes use of a RTK surveying system to verify excavation elevations with topographic map of soil areas.
- 18 Site field office includes rental, electricity, potable water, and cell phone coverage.
- 19 Field work to be completed in one work season with reclamation completed the following season.

SITE-WIDE ALTERNATIVE 4-3

APPENDIX B-5

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Rev. 11 - 6/9/09
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SITE-WIDE ALTERNATIVE 4-3		APPE	NDIX B-5				Rev. 11 - 6/9/09	
		Decscription Quantity Units		Unit Cost	Total Cost	Additional Notes		
	CONSTRUCTION AND SITE PREF							
-1	Permits	Permits, Work Plan, CQA Plan, SHSO Plan	1	LS	\$40,000	\$40,000	Per KF Est. of 6/8/09	
2	Submittals	Pre-construction Submittals	1	LS	\$100,000	\$100,000		
3	Non-engineering Measures	Permanent Signage	1	LS	\$5,000	\$5,000		
4	Non-engineering Measures	Permanent Fencing	1,500	LF	\$25	\$37,500	2 Areas	
-5	Erosion Control	Silt Fence and Hay Bales	6,000	LF	\$7	\$42,000	ECC and Factory Pond areas	
-6	Drying Bed Construction	Field Construction	2	Each	\$75,000	\$150,000		
-7	Construction Field Staff/CQC	Field Crew	8	Month	\$45,000	\$360,000		
-8	Survey - In Water and On Shore	RTK Survev/Field Survev	8	Month	\$10,000	\$80,000		
-9	Mobilization/Demobilization	Mob/Demob of Equipment	1	LS	\$100,000	\$100,000		
-10	Site Security	Off-duty Hours	8	Month	\$25,000	\$200,000		
-11	Soil Characterizations	Analytical Sampling	1	LS	\$50,000	\$50,000		
-12		Seed/Mulch/Trees	10	AC	\$50,000	\$500,000		
-13	Temporary Facilities	Temporary Dock and	1	LS	\$120,000	\$120,000		
	remperary r dennied	Access Roads/Site Offices		20	¢120,000	<i><i><i>q</i>.20,000</i></i>		
. DRE	DGING and DREDGE MATERIAL I	DISPOSAL						
-1	Equipment/Material	Mechanical Excavation	25,093	CY	\$95	\$2,383,835		
	Rehandling/Dewatering/Solidifica	A /Dredging Using Long						
	tion/Stabilization for Transport	Reach Excavator						
_								
-2	Silt Curtain	Sediment Control Silt	3,000	LF	\$60	\$180,000		
		Curtain						
3-3	Backfill	Material Cost (1.6 TN/CY)	40,149	TN	\$20	\$802,976		
-4	Backfill	Placement Cost	40,149	TN	\$27	\$1,084,018		
8-5	Transportation and Disposal	Dredge Material Disposal -	39,165	TN	\$175	\$6,853,875	Per LD Quotes	
		Non-hazardous Waste (1.6 TN/CY)						
-6	Transportation and Disposal	Dredge Material Disposal -	990	TN	\$275	\$272,250	Per LD Quotes	
U	indhoportation and Diopoedi	Hazardous Waste	000		\$210	<i>Q2.2,200</i>		
-7	Transportation and Disposal	Decant Water Management	1,254,650	GAL	\$0.50	\$627,325	Assumes 50 gallons/CY of wate	
		e e					treated and discharged on-site	
	AND EXCAVATION and MATERIA	L DISPOSAL						
-1	Soil Excavation		17,574	CY	\$15	\$263,610		
-2	Soil Rehandling/Loading for		17,574	CY	\$4	\$70,296		
	Disposal							
;-3	Backfill of Excavated Areas	Material Cost	28,118	TN	\$20	\$562,368		
-4	Backfill of Excavated Areas	Backfill with Clean Material	28,118	TN	\$10	\$281,184		
-5	Confirmatory Sampling	Analytical Sampling	7.10	Acre	\$15,000	\$106,500		
C-6	Transportation and Disposal	Excavated Soil Disposal -	13,632	TN	\$175	\$2,385,600	Per LD Quotes	
		Non-hazardous Waste						
			14,488	TN	\$275	\$3,984,200	Per LD Quotes	
;-7	Transportation and Disposal	Excavated Soil Disposal -	14,400					
>-7	Transportation and Disposal	Excavated Soil Disposal - Hazardous Waste	14,400					
	Transportation and Disposal Transportation and Disposal		0	TN	\$900	\$0	Per LD Quotes	
		Hazardous Waste		TN		\$0	Per LD Quotes	
		Hazardous Waste Excavated Soil Disposal -		TN		\$0	Per LD Quotes	
-8 . COL		Hazardous Waste Excavated Soil Disposal - Hazardous Waste that	0		\$900		Per LD Quotes	
-8 . COL	Transportation and Disposal	Hazardous Waste Excavated Soil Disposal - Hazardous Waste that		TN LS		\$0 \$630,357	Per LD Quotes Per CWA Cost Est. 3-27-09	
2-8 0. COL 0-1 1. LON	Transportation and Disposal D WASTE AREA Field Effort G-TERM MONITORING and MAINT	Hazardous Waste Excavated Soil Disposal - Hazardous Waste that Requires Stabilization	0	LS	\$900 \$630,357	\$630,357	Per CWA Cost Est. 3-27-09	
D-8 D. COL D-1 E. LON	Transportation and Disposal DWASTE AREA Field Effort	Hazardous Waste Excavated Soil Disposal - Hazardous Waste that Requires Stabilization	0		\$900	\$630,357		
D-1	Transportation and Disposal D WASTE AREA Field Effort G-TERM MONITORING and MAINT	Hazardous Waste Excavated Soil Disposal - Hazardous Waste that Requires Stabilization	0	LS	\$900 \$630,357	\$630,357 \$1,330,876	Per CWA Cost Est. 3-27-09	
C-8 D. COLI D-1 E. LON	Transportation and Disposal D WASTE AREA Field Effort G-TERM MONITORING and MAINT Long-term Monitoring and	Hazardous Waste Excavated Soil Disposal - Hazardous Waste that Requires Stabilization	0	LS	\$900 \$630,357	\$630,357	Per CWA Cost Est. 3-27-09	

				₩ 0,000,0 + 2
Remedial Design/Completion Report	1	LS	\$650	\$650
Plans/Completion Report for CWA	1	LS	\$60,100	\$60,100
Project Management/Construction Quality Assurance	8	Month	\$105,000	\$840,000

- 1 4 inches of stone applied for road improvements.
- 2 Conversion factor of 1.60 Tons/CY used for sediments and soil.
- 3 Field Staff with per diems includes SUPT, SHSO, FE, QC, and Field Clerk.
- 4 No bond insurance included.
- 5 Silt fence, hay bales, and silt curtains used for erosion and sediment migration control.
- Reclamation per local specifications, including tree planting @ 215 trees/acre. Includes topsoil placement.
- 7 Roads to be left in place.
- 8 Drying bed constructed of 6 inches of stone and 4 inches of asphalt. Removed following completion of the work.
- 9 Assumes 50 gallon of water/CY of sediment generated. Assumed treated and discharged on-site.
- 10 Assumes use of a long reach excavator to excavate sediments in areas after water level is lowered.
- 11 Assumes use of an excavator mounted on a barge for sediment removal in areas that can not be reached from shore.
- 12 Assumes work schedule is 10 hours/day for 5 days/week.
- 13 Costs expressed in 2010 dollars (escalation included).
- 14 Site security assumed for non-work hours and weekends @ \$50/hour.
- 15 Analytical sampling costs included in post-remedial surveys and monitoring.
- 16 Assumes chain-link fencing with gates to be placed around the field office complex and drying beds.
- 17 Assumes use of a RTK surveying system to verify excavation elevations with topographic map of soil areas.
- 18 Site field office includes rental, electricity, potable water, and cell phone coverage.
- 19 Field work to be completed in one work season with reclcamation completed the following season.

SITE-WIDE ALTERNATIVE 5

APPENDIX B-5

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Rev. 11 - 6/9/09
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A. PRE-CONSTRUCTION AND SITE PREPARATION & FILED OVERSITE Vertex Vert	Rev. 11 - 6/9/09					NDIX B-5	SITE-WIDE ALTERNATIVE 5		
A-1 Permits Permits, Work Plan, COA 1 LS \$125,000 Per KF Est, of Plan, SKIS Plan A-2 Submittals Pre-construction Submittals 1 LS \$100,000 \$120,000 \$120,000 \$120,000 \$120,000 \$120,000 \$100,000 A-3 Non-engineering Measures Permanent Fending 1 LS \$5,000 \$100,000 \$2 Areas A-4 Non-engineering Measures Permanent Fending 1,000 LF \$77 \$28,000 \$20,000 \$40000 LF \$57,5000 \$150,000 \$40000 \$47 Construction \$12 Month \$45,0000 \$120,0000 \$47 \$100,000 \$120,0000 \$100,000 \$120,000 \$410 \$155,5000 \$100,000 <th>Iditional Notes</th> <th>Total Cost</th> <th>Unit Cost</th> <th>Units</th> <th></th> <th></th> <th colspan="2">Component A. PRE-CONSTRUCTION AND SITE PRI</th>	Iditional Notes	Total Cost	Unit Cost	Units			Component A. PRE-CONSTRUCTION AND SITE PRI		
A-2 Submittals Pre-construction Submittals 1 LS \$100.000 \$100.000 A-3 Non-engineering Measures Permanent Fenning 1.500 LF \$25 \$37.500 2.reas A-5 Dring Bed Construction Field Construction 2 Each \$75.000 \$55.000 A-7 Construction Field Construction 2 Each \$75.000 \$55.000 A-8 Survey In Water and On Shore RTK is Survey/Field Survey 12 Month \$45.000 \$50.000 A-9 Mobilization/Demobilization Mobilization/Demobilization Analytical Survey/Field Surv	st. of 6/8/09	Per KF Est. of 6	\$125,000	\$125,000	LS		Permits, Work Plan, CQA		
A-4 Non-engineering Measures Permanent Fending 1.500 LF \$25 \$37,500 2.4 reas A-5 Erosism Control Sill Flores and Hay Bales 4.000 LF \$7 \$28,000 ECC and Fact A-6 Drying Bed Construction Field Construction 2 Each \$75,000 \$\$50,000 \$\$200 <t< td=""><td></td><td></td><td>\$100,000</td><td>\$100,000</td><td>LS</td><td>1</td><td></td><td>Submittals</td><td>A-2</td></t<>			\$100,000	\$100,000	LS	1		Submittals	A-2
A-4 Non-engineering Measures Permanent Fencing 1.500 LF \$25 \$37,500 2.4 reas A-5 Erosin Control Sill Fence and Hay Bales 4.000 LF \$7 \$28,000 ECC and Fact A-6 Drying Bed Construction Field Construction 2 Each \$75,000 \$\$40000 \$\$40,000 A-7 Construction Field Starb(COC Field Crew 12 Month \$\$100,000 <td< td=""><td></td><td></td><td>\$5.000</td><td>\$5.000</td><td>LS</td><td>1</td><td>Permanent Signage</td><td>Non-engineering Measures</td><td>A-3</td></td<>			\$5.000	\$5.000	LS	1	Permanent Signage	Non-engineering Measures	A-3
A-5 Erosion Control Silt Fence and Hay Bales 4.000 LF \$7 \$28,000 ECC and Fact A-6 Dring Bed Construction Field Construction 2 Each \$75,000 \$160,000 A-7 Construction Field Crew 12 Month \$45,000 \$540,000 A-8 Survey In Water and On Shore RTK, Survey/Field Survey 12 Month \$10,000 \$100,000 A-10 Site Security Off-duty Hours 12 Month \$25,000 \$50,000 A-11 Soli Characterizations Analytical Sampling 1 LS \$10,000 \$100,000 A-12 Clearing Grubbing Reclamation Sect/Mulch/Trees 1 LS \$10,000 \$50,000		2 Areas	. ,					8 8	
A-6 Dying Bed Construction Field Construction 2 Each \$75,000 \$150,000 A-7 Construction Field Streek RTK Survey/Field Survey 12 Month \$10,000 \$120,000 A-9 Mobilization/Demobilization Oth-duty Hours 12 Month \$10,000 \$100,000 A-10 Site Security Oth-duty Hours 12 Month \$10,000 \$300,000 A-11 Soil Characterizations Analytical Sampling 1 LS \$30,000 \$300,000 A-13 Temporary Facilities Analytical Sampling 1 LS \$300,000 \$150,000 A-13 Temporary Facilities Temporary Dock and Access Road/Sile Offices 1 LS \$10,479,750 B-1 Equipment/Material Mechanical Curtain 205,050 CY \$95 \$19,479,750 B-2 Silt Curtain Mechanical Curtain 205,050 CY \$95 \$19,479,750 B-3 Backfill Material Disposal 5,000 LF \$60 \$300,000 B-3 Backfill Placement Cost 328,080	Factory Pond area					,		8 8	
A-7 Construction Field Statif(CGC Field Crew 12 Month \$45,000 \$540,000 As Survey-In Water and On Shore RTK Struey/Field Survey 12 Month \$150,000 \$100,000 A-0 Site Security Off-duty Hours 12 Month \$250,000 \$300,000 A-13 Soli Characterizations Analytical Sampling 1 LS \$510,000 \$500,000 A-13 Temporary Facilities Seed/Mulch/Trees 17 AC \$50,000 \$880,000 A-13 Temporary Facilities Seed/Mulch/Trees 17 AC \$50,000 \$880,000 A-13 Temporary Facilities Seed/Mulch/Trees 17 AC \$50,000 \$880,000 B-1 Equipment/Material Methanical 205,050 CY \$95 \$19,479,750 B-2 Silt Curtain Sediment Control Silt 5,000 LF \$60 \$300,000 Curtain Sediment Control Silt 5,000 TN \$22 \$6,661,600 B-3 Backfill Material Osp(16 Thipposal - 1,228,080 TN \$22 \$3,5126,250 </td <td>r actory r ond area</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>•</td> <td></td> <td></td>	r actory r ond area						•		
A-B Survey - In Water and On Shore RTK Survey/Field Survey 12 Month \$10.000 \$120.000 A-9 Mobilization/Demobilization MobDemob of Equipment 1 LS \$100.000 \$300.000 A-11 Soil Characterization Analytical Sampling 1 LS \$50.000 \$500.000 A-13 Temporary Facilities Seed/Mulch/Trees 17 AC \$50.000 \$50.000 A-13 Temporary Dock and Access Roads/Site Offices 1 LS \$150.000 \$150.000 B-1 Equipment/Material Mechanical Access Roads/Site Offices 205.050 CY \$95 \$19.479.750 B-2 Site Curtain Sediment Control Site Curtain 5.000 LF \$60 \$300.000 B-3 Backfill Material Cest (1.6 TN/CY) 328.080 TN \$27 \$8.869.160 B-4 Backfill Placement Cost 328.080 TN \$27 \$3.869.160 B-4 Backfill Placement Cost 328.080 TN \$27 \$3.869.160 B-5 Transportation and Disposal Dredge Material Disposal - 1.208 <									
A-9 Mobilization/Demobilization Mob/Demob of Equipment 1 LS Still 0.000 \$300.000 A-10 Site Security Off-duty Hours Analytical Sampling 1 LS \$500.000 \$500.000 A-11 Soil Characterizations Seed/Mulch/Trees 17 AC \$500.000 \$850.000 A-13 Temporary Facilities Temporary Dock and Access Roads/Site Offices 1 LS \$50.000 \$150.000 3. DREDGING & DREDGE MATERIAL DISPOSAL 250.050 CY \$95 \$19.479.750 3-1 Equipment/Material Rehandling/Dewatering/Solidifica Mechanical Curtain 205.050 CY \$95 \$19.479.750 3-2 Silt Curtain Sediment Control Silt Curtain 5.000 LF \$60 \$300.000 3-3 Backfill Meterial Cost (1.6 TWCY) 328.080 TN \$22 \$5.51.600 3-4 Backfill Placement Cost 328.080 TN \$27 \$8.85.160 3-5 Transportation and Disposal Incertail Disposal 1.208 TN \$27 \$3.82.200 Per LD Quotes <td< td=""><td></td><td></td><td></td><td>. ,</td><td></td><td></td><td></td><td></td><td></td></td<>				. ,					
A-10 Site Security Off-druly Hours 12 Month \$25,000 \$300,000 A-11 Soil Characterizations Analytical Sampling 1 LS \$50,000 \$50,000 A-12 Clearing/Grubbing/Reclamation Seed/Mulch/Trees 17 AC \$50,000 \$850,000 A-13 Temporary Facilities B- Control Site 1 LS \$150,000 \$150,000 A-13 Temporary Facilities B- Control Site 1 LS \$150,000 \$150,000 A-14 Equipment/Material Mechanical Mechanical 205,050 CY \$95 \$19,479,750 B- Control Stabilization for Transport Long Reach Excavator Disposal B- Control Site 5,000 TN \$20 \$6,561,600 B-3-3 Backfill Material Cost (1.6 TN/CY) 328,080 TN \$20 \$6,561,600 B-4 Backfill Material Disposal									
A+1 Soil Characterizations Analytical Sampling 1 LS \$50,000 \$50,000 A+12 Clearing/Grubbing/Releanation Temporary Dock and 1 LS \$510,000 \$150,000 A+13 Temporary Facilities Temporary Dock and 1 LS \$510,000 \$150,000 B-1 EquipmentMaterial Mechanical 205,050 CY \$95 \$19,479,750 B-2 Silt Curtain Sediment Control Sit 5,000 LF \$60 \$300,000 B-3 Backfill Methania Cost (16 TWCY) 328,080 TN \$22 \$6,551,600 B-4 Backfill Metrail Cost (16 TWCY) 328,080 TN \$22 \$6,854,160 B-5 Transportation and Disposal Dredge Material Disposal - Non-hazardous Waste (1.6 TWCY) 328,080 TN \$227 \$8,858,160 B-5 Transportation and Disposal Dredge Material Disposal - 1,208 TN \$27 \$8,858,160 B-5 Transportation and Disposal Dredge Material Disposal - 1,208 TN \$275 \$332,200 Per LD Quotes Soil Excavatido 56,99									
A-12 Clearing/Grubbing/Reclamation Seed/Mulch/Trees 17 AC \$50,000 \$850,000 A-13 Temporary Facilities Temporary Dock and Access Roads/Site Offices 1 LS \$150,000 \$150,000 B-1 Equipment/Material Mechanical Cost and Access Roads/Site Offices 205,050 CY \$95 \$19,479,750 B-2 Site Curtain Sediment Control Site Scavation 205,050 CY \$95 \$19,479,750 B-3 Backfill Material Cost (1.6 TN/CY) 328,080 TN \$20 \$6,561,600 B-4 Backfill Material Cost (1.6 TN/CY) 328,080 TN \$20 \$6,561,600 B-4 Backfill Material Disposal 328,080 TN \$20 \$6,561,600 B-5 Transportation and Disposal Dredge Material Disposal - Norhazardous Waste (1.6 TN/CY) \$28,080 TN \$27 \$33,200 Per LD Quotes B-5 Transportation and Disposal Dredge Material Disposal - 1,208 TN \$275 \$332,200 Per LD Quotes B-6 Transportation and Disposal Decant Water Management 10,252,500 GAL <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>•</td> <td></td>								•	
A-13 Temporary Facilities Temporary Dock and Access Roads/Site Offices 1 LS \$150,000 \$150,000 B. DREDGING & DREDGE MATERIAL DISPOSAL Be1 Rechandling/Dewatering/Solidifica Excavation/Dredging Using tion/Stabilization for Transport 205,050 CY \$95 \$19,479,750 Be1 Equipment/Material Rehandling/Dewatering/Solidifica Excavation/Dredging Using tion/Stabilization for Transport Sediment Control Silt Ourtain 50,000 LF \$60 \$300,000 Be-3 Backfill Material Cost (1.6 TN/CY) Predge Material Disposal 328,080 TN \$22 \$6,561,600 Be-4 Backfill Placement Cost of Transportation and Disposal 286,0872 TN \$175 \$57,202,600 Per LD Quotes Non-hazardous Waste (1.6 TN/CY) Dredge Material Disposal - Transportation and Disposal Dredge Material Disposal - Hazardous Waste 1,208 TN \$275 \$332,200 Per LD Quotes C-1 Soli Excavation Sediment Cost 56,995 CY \$4 \$227,980 Assumes 50 gr water treated a on-site C-2 Soli Rehandling/Loading for Disposal Soli Excavated Areas Material Cost 91,192 TN \$15 \$1,37,880 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>, , ,</td><td></td><td></td></t<>							, , ,		
Access Roads/Site Offices B. DREDGING & DREDGE MATERIAL DISPOSAL B-1 Equipment/Material Rehandling/Devating/Solidifices Exeavation 205,050 CY \$95 \$19,479,750 B-2 Silt Curtain Sediment Control Silt 5,000 LF \$60 \$300,000 B-3 Backfill Material Cost (1,6 TN/CY) 328,080 TN \$20 \$6,561,600 B-3 Backfill Material Cost (1,6 TN/CY) 328,080 TN \$20 \$6,561,600 B-4 Backfill Material Disposal 236,872 TN \$175 \$57,202,600 Per LD Quotes B-5 Transportation and Disposal Dredge Material Disposal - Non-hazardous Waste (1.6 TN/CY) \$175 \$51,26,250 Assumes 50 gr water treated a on-site B-7 Transportation and Disposal Decarit Water Management 10,252,500 GAL \$0.50 \$5,126,250 Assumes 50 gr water treated a on-site C. UPLAND EXCAVATION & MATERIAL DISPOSAL Stopposal				. ,				. .	
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			\$650,000	\$650,000	LS	1	Report	Remedial Design/Completion F	
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Project Management/Construction Quality Assurance 12 Month \$105,000 \$1,260,000		-			Month	12			
Revised Project Total \$158,126,591]	\$158,126,591	d Project Total	Revised	I			

- 1 4 inches of stone applied for road improvements.
- 2 Conversion factor of 1.60 Tons/CY used for sediments and soil.
- 3 Field staff with per diems includes SUPT, SHSO, FE, QC, and Field Clerk.
- 4 No bond insurance included.
- 5 Silt fence, hay bales, and silt curtains used for erosion and sediment migration control.
- 6 Reclamation per local specifications, including tree planting @ 215 trees/acre. Includes topsoil placement.
- 7 Roads to be left in place.
- 8 Drying bed constructed of 6 inches of stone and 4 inches of asphalt. Removed following completion of the work.
- 9 Assumes 50 gallon of water/CY of sediment generated. Assumed treated and discharged on-site.
- 10 Assumes use of a long reach excavator to excavate sediments in areas after water level is lowered.
- 11 Assumes use of an excavator mounted on a barge for sediment removal in areas that can not be reached from shore.
- 12 Assumes work schedule is 10 hours/day for 5 days/week.
- 13 Costs expressed in 2010 dollars (escalation included).
- 14 Site security assumed for non-work hours and weekends @ \$50/hour.
- 15 Analytical sampling costs included in post-remedial surveys and monitoring.
- 16 Assumes chain-link fencing with gates to be placed around the field office complex and drying beds.
- 17 Assumes use of a RTK surveying system to verify excavation elevations with topographic map of soil areas.
- 18 Site field office includes rental, electricity, potable water, and cell phone coverage.
- 19 Field work to be completed in one work season with reclcamation completed the following season.

APPENDIX B-5

LONG-TERM MONITORING OF ECOLOGICAL RESOURCES AND HABITAT RECOVERY- SWAs 2 and 3

PRE-REMEDIATION ACTIVITIES

1	Preparation of a Work Plan and a Field Sampling and Analysis Plan	Quantity 1	Unit LS	Unit Cost \$20,000	Total Cost \$20,000	
2	Baseline Fisheries/Fish Tissue Sampling	1	LS	\$40,476	\$40,476	
3	Baseline Sediment Survey	1	LS	\$33,663	\$33,663	
4	Preparation of Baseline Monitoring	1	LS	\$32,235	\$32,235	-
				Subtotal	\$126,374	

POST-REMEDIATION ACTIVITIES (Years 1-5 After Completion of Remediation)

				Subtotal	\$99,139
5	Report	I	10	\$23,000	\$23,000
3	Preparation of Annual Monitoring	1	LS	\$25.000	\$25,000
2	Post Remediation Sediment Survey	1	LS	\$33,663	\$33,663
1	Annual Fisheries/Fish Tissue Sampling	1	LS	\$40,476	\$40,476

POST-REMEDIATION ACTIVITIES (Years 10, 15, 20, 25 and 30 After Completion of Remediation)

1	Annual Fisheries/Fish Tissue Sampling	1	LS	\$40,476	\$40,476
2 3	Post Remediation Sediment Survey Preparation of Annual Monitoring Report	1 1	LS LS	\$33,663 \$25,000	\$37,760 \$25,000
				Subtotal	\$103,236

POST-REMEDIATION ACTIVITIES (Year 30 After Completion of Remediation)

1	Preparation of a Summary Monitoring Report	1	LS	\$40,975	\$40,975
				Subtotal	\$40,975
				TOTAL	\$1,080,085

ASSUMPTIONS

1 Maximum 10-year monitoring period for fish tissue and sediments;

2 Annual monitoring to begin one year after the completion of remediation;

3 Sample collection assumes two Associate-level Scientists and one Principal Scientist;

- 4 Work will be self-performed;
- 5 Standard turnaround times apply for chemistry samples; and

6 Sediment monitoring for MeHg and THg only.

APPENDIX B-5

LONG-TERM MONITORING OF ECOLOGICAL RESOURCES AND HABITAT RECOVERY - SWAs 4-1, 4-2, 4-3 and 5

	EDIATION ACTIVITIES				
		Quantity	Unit	Unit Cost	Total Cost
1	Preparation of a Work Plan and a Field Sampling and Analysis Plan	1	LS	\$20,000	\$20,000
2	Baseline Fisheries/Fish Tissue Sampling	1	LS	\$40,476	\$40,476
3	Baseline Sediment Benthic Community and Aquatic Plant Survey	1	LS	\$62,960	\$62,960
4	Baseline Wildlife Survey	1	LS	\$15,353	\$15,353
5	Endangered/Threatened Species Survey	1	LS	\$10,000	\$10,000
6	Preparation of Baseline Monitoring Report	1	LS	\$40,975	\$40,975
				Subtotal	\$189,764
POST-REM	MEDIATION ACTIVITIES (Years 1-5 After	Completion	of Remedi	iation)	
1	Annual Fisheries/Fish Tissue Sampling	1	LS	\$36,630	\$36,630
2	Annual Benthic Community and Aquatic Plant Survey	1	LS	\$62,960	\$62,960
3	Annual Wildlife Survey	1	LS	\$15,353	\$15,353
4	Preparation of Annual Monitoring Report	1	LS	\$40,975	\$40,975
				Subtotal	\$155,918
OST-REM	MEDIATION ACTIVITIES (Years 10, 15, 20	. 25 and 30 /	After Com	pletion of Remed	iation)
1	Annual Fisheries/Fish Tissue Sampling	1	LS	\$36,630	\$36,630
2	Sediment Monitoring Survey	1	LS	\$33,663	\$33,663
3	Preparation of Annual Monitoring Report	1	LS	\$25,000	\$25,000
				Subtotal	\$95,293
OST-REM	MEDIATION ACTIVITIES (Year 30 After Co	ompletion of	Remediat	tion)	
1	Preparation of a Summary Monitoring	1	15	\$40.975	\$40.975

1	Preparation of a Summary Monitoring Report	1	LS	\$40,975	\$40,975	
			-	Subtotal	\$40,975	
				TOTAL	\$1,330,876	

ASSUMPTIONS

1 Maximum 10-year monitoring period for fish tissue; 5-year monitoring period for habitat recovery;

2 Annual monitoring to begin one year after the completion of remediation;

3 Sample collection assumes two Associate-level Scientists and one Principal Scientist;

4 Work will be self-performed;

5 Standard turnaround times apply for chemistry samples;

6 Sediment monitoring for MeHg and THg only; and

7 Cap integrity monitoring not included.