

Comprehensive Long-term Environmental Action Navy

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NSWC CRANE
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Rev. 0
07/08

Interim Measures Work Plan Cost Estimate for SWMU 13 - Mine Fill B

Naval Surface Warfare Center Crane
Crane, Indiana

Contract Task Order 20

July 2008



201 Decatur Avenue
Building 1A, Code EV
Great Lakes, Illinois 60088

COST ESTIMATE/SCHEDULE ASSUMPTIONS

ASSUMPTIONS

The following assumptions were made in developing the cost estimate:

- The prices used to develop the cost estimate were obtained from one of the following sources:
 - Means Site Work and Landscape Cost Data, 27th Annual Edition, 2008
 - Past experience on similar projects
 - Quotes from companies specializing in relevant materials, equipment, and services
- Interim measures for SWMU 13 – Mine Fill B will be performed as a stand-alone project.
- For purposes of developing this cost estimate, all equipment used for this construction project will be rented.
- Indiana sales tax of six percent was added to all material purchases and equipment rental.
- All work performed will comply with Occupational Safety and Health Administration (OSHA) regulations.
- All contaminated sediments are to be placed onto a dewatering pad and gravity-drained. Due to the physical nature of the soils, it is assumed that absorbing agents will not be required to stabilize the sediments for transportation to the NSWC Crane-approved disposal facility. It is also assumed that one characterization sample of the collected water will be required to verify the assumption that the water collected within the dewatering pad can be discharged to a local drainage channel or storm drain following filtering to remove sediment.

BASE ESTIMATE

- Unit prices for the transportation and disposal of contaminated material at a non-hazardous waste disposal facility were requested from three vendors. Two of the three vendors were responsive and the bid from AREA Disposal Services, Inc. was used in the cost estimate (quotes attached). Selected

vendor information is as follows: Terra Limited, 11550 N. Meridian Street, Carmel, Indiana 46032.
 Contact: John Furiak (317) 660-6865

- Site project duration was estimated to be 7 weeks based on the following breakdown:

Mobilization – Establish all erosion and sediment control features, clear the site, and construct support facilities such as the decontamination pad, materials storage pad, dewatering pad, and temporary access trails.	5 days
Sediment Excavation/Restoration – Excavate sediments from drainage channels and remove sediment from culverts, dewater sediments, and dispose off-site. Excavation to be followed by channel restoration. It is estimated that restoration activities will lag behind excavation activities by 2 days (allowing time for verification sampling).	10 days
Surface Soil Excavation/Restoration – Excavate surface soil from the surface soil excavation area, backfill the excavation and restore the gravel-paved surface. It is assumed that the backfilling and restoration of the area will lag the excavation of the area by 2 days (allowing time for verification sampling).	15 days
Demobilization – Includes the removal of all support facilities and collection of verification samples. If verification samples allow, the temporary access trails will remain in place upon completion of the project (see mobilization above for list of support facilities).	5 days
Total Duration (work days)	35 days

- The EMAC contractor will utilize a Site Superintendent and a 'dual hatted' Site Health & Safety Specialist (SHSS) / Project Quality Control (QC) Manager for on-site project management and oversight.
- It is assumed that the material used for the support facility material and sediment traps (50 cy) will be disposed of along with the contaminated sediment and surface soil. Total disposal volume is estimated at 2,560 yd³ [2,510 yd³ (reported volume) plus 50 yd³ (support facility materials)] or 3,800 tons. Based on in-place data 580 tons of the 3,800 tons is TSCA regulated soil.
- The following work assignments are based on review of the Environmental Multiple Award Contract (EMAC) and work routinely completed under the EMAC:
 - Environmental Conditions Report - The Navy will provide the Environmental Conditions Report. The EMAC contractor will participate in documenting environmental conditions before, during,

and after the implementation of the interim measures. The EMAC contractor's participation is primarily to identify photographic views to be taken and any other conditions that should be documented. The EMAC contractor will prepare the Environmental Protection Plan.

- Land Survey - The Navy will provide a layout of the excavation area. The EMAC contractor will provide any controls and survey.
 - Digging Permit - The EMAC contractor completes the digging permit form. The Navy performs the utility clearance and issues the permit.
 - Tree Clearing Permit - The Navy will obtain NSWC Crane Natural Resources and United States Fish and Wildlife Service (USFWS) approvals for clearing trees.
 - Sampling and Analysis – The EMAC contractor will be responsible for the collection and analysis of waste characterization sampling of the excavated materials and the generated water. The Navy will prepare and implement the sampling and analysis plan for the collection of verification samples. The EMAC contractor will be responsible for coordinating and accommodating sampling and analysis field activities.
 - Wastewater disposal - Wastewater resulting from EMAC contractor's equipment and personnel decontamination activities will be discharged to the nearest NSWC Crane sanitary sewer system manhole following characterization sampling. The EMAC will not be charged for the disposal of this water to the NSWC Crane sanitary sewer system.
 - Project Closure Report - The Navy will provide the Project Closure Report. The EMAC contractor will furnish those portions of the Project Closure Report identified in the Supplemental Specifications.
- The cost estimate does not include potential long term costs that might be incurred in the event contamination is left in place.
 - The cost estimate provided was developed on a capital cost fixed-price basis with the attached 'base estimate' representing the 'anticipated' capital cost. Due to uncertainties associated with environmental work, specifically the quantities of excavated soils and sediment, a 'reasonable worst case' unit price for additional excavation and transportation and disposal of excavated soils and

sediments to a non-hazardous waste landfill is also provided. The OICC should consider requesting unit pricing for these items. The costing rationale, line item, estimated quantity, and estimated unit cost are provided below:

1. Rationale: - The contaminated material quantity for excavation, transport, and off-site disposal at a non-hazardous waste disposal facility is estimated at 2,910 tons for the "anticipated" case. The "reasonable worst case" quantity, based on historic soil sampling is estimated to be 4,490 tons, which represents an increase of 1,580 tons.

Estimated Quantity - 1,580 tons

Estimated Unit Price - \$190/ton [including General and Administrative (G&A)] (refer to attached Extra Tons Estimate spreadsheet)

ADDITIONAL COST FOR OPTIONS 1 AND 2

The cost estimate provided was developed on a fixed-price basis with the attached "base estimate" representing the "anticipated" cost. As indicated in the Interim measures Work Plan, it is recognized that the Navy may elect to proceed with subsurface soil excavation Option 1 or Option 2.

- Option 1 - Additional excavation to include subsurface excavation [excavation at depths greater than 2 feet below ground surface (bgs)] to remove PCB contamination at concentrations greater than 25 milligrams per kilogram (mg/kg).
- Option 2 - Additional excavation to include subsurface excavation (excavation at depth greater than 2 feet bgs) to remove PCB contamination at concentrations greater than 1 mg/kg.

Using the same assumptions used to develop the Base Cost Estimate, the election to perform Option 1 or 2 results in increased excavation volume and increased construction time. However, the construction methodology and the construction equipment needs do not change. The following is a summary of the additional time and volume associated with Options 1 and 2.

Option 1 Volume - Option 1 results in the excavation of 60 yd³ additional soil contaminated with PCBs at concentrations greater than 25 mg/kg. The disposal volume associated with Option 1 equals 2,620 yd³ (2,560 yd³ plus 60 yd³) or 3,880 tons. Based on in-place data 30 yd³ of the additional 60 yd³ is TSCA regulated soil.

Option 1 Duration - The duration for the Base Cost Estimate is 35 days. With the increased volume associated with Option 1, it is estimated that the duration of the project would increase by 5 days. Therefore, the total duration for Option 1 is estimated to be 40 days.

Option 2 Volume - Option 2 results in the excavation of 420 yd³ additional soil contaminated with PCBs at concentrations greater than 1 mg/kg. The disposal volume associated with Option 2 equals 2,980 yd³ (2,560 yd³ plus 420 yd³) or 44,30 tons. Based on in-place data 70 yd³ of the additional 420 yd³ is TSCA regulated soil.

Option 2 Duration - The duration for the Base Cost Estimate is 35 days. With the increased volume associated with Option 2, it is estimated that the duration of the project would increase by 10 days. Therefore, the total duration for Option 1 is estimated to be 45 days.

BASE COST ESTIMATE

NSWC Crane
Crane, Indiana
Mine Fill B (SWMU 13)
Interim Corrective Measure

Item	Quantity	Unit	Subcontract	Unit Cost			Subcontract	Extended Cost			Subtotal
				Material	Labor	Equipment		Material	Labor	Equipment	
Plans, Permits, Reports											
1 Health & Safety Plan	40	hr			\$40.00		\$0	\$0	\$1,600	\$0	\$1,600
2 Environmental Protection Plan	16	hr			\$40.00		\$0	\$0	\$640	\$0	\$640
3 Work Plan	60	hr			\$40.00		\$0	\$0	\$2,400	\$0	\$2,400
4 Waste Management Plan	8	hr			\$40.00		\$0	\$0	\$320	\$0	\$320
5 Meetings	24	hr			\$40.00		\$0	\$0	\$960	\$0	\$960
Site Support											
1 Site Superintendent	35	day			\$450.00		\$0	\$0	\$15,750	\$0	\$15,750
2 H & S; QA/QC Site Support	35	day			\$400.00		\$0	\$0	\$14,000	\$0	\$14,000
3 Labor, Common (3 laborers for 35 days)	105	day				\$241.76	\$0	\$0	\$0	\$25,385	\$25,385
4 Pick-up Truck (2 trucks for 35 days)	70	day				\$110.00	\$0	\$0	\$0	\$7,700	\$7,700
5 Sanitary Facilities	2	mo				\$185.00	\$0	\$0	\$0	\$370	\$370
6 Utilities (phones, water, etc.)	35	day				\$31.00	\$0	\$0	\$0	\$1,085	\$1,085
7 Decon Facilities - Materials	3	ls		\$400.00			\$0	\$1,200	\$0	\$0	\$1,200
8 Decon Facilities - Equipment (duration x number of pads)	105	day				\$80.00	\$0	\$0	\$0	\$8,400	\$8,400
9 Dewatering Facilities - Materials	1	ls		\$7,000.00			\$0	\$7,000	\$0	\$0	\$7,000
10 Survey Support	2	day	\$1,250.00				\$2,500	\$0	\$0	\$0	\$2,500
Site Preparation											
1 Utility Survey	1	ls	\$3,500.00				\$3,500	\$0	\$0	\$0	\$3,500
2 Stone Construction Entrance	3	ea		\$1,100.00			\$0	\$3,300	\$0	\$0	\$3,300
3 E&S Silt Fence	1,000	lf		\$0.71			\$0	\$710	\$0	\$0	\$710
4 Stream E&S, gravel	10	cy		\$46.50			\$0	\$465	\$0	\$0	\$465
5 Temporary Access Trail Surface, mulch & straw	3,200	sy		\$1.88			\$0	\$6,016	\$0	\$0	\$6,016
6 Clear Site, cut & chip trees	1	day				\$298.20	\$0	\$0	\$0	\$298	\$298
7 Mob/demob Equipment	2	ea			\$122.00	\$220.00	\$0	\$0	\$244	\$440	\$684
Site Work											
1 Excavation (2 cubic yard bucket)	30	day			\$304.80	\$1,060.00	\$0	\$0	\$9,144	\$31,800	\$40,944
2 Front End Loader (2 1/2 to 3 1/2 cubic yard , 130 HP)	30	day			\$304.80	\$386.40	\$0	\$0	\$9,144	\$11,592	\$20,736
3 Dump Truck (12 yard truck)	30	day			\$378.80	\$553.08	\$0	\$0	\$11,364	\$16,592	\$27,956
4 Diaphragm Pump, 2" dia. with hoses (2 pumps)	60	day				\$71.05	\$0	\$0	\$0	\$4,263	\$4,263
5 Sediment Removal from Pipes (200 lf) & Sump	1	ls	\$1,663.00				\$1,663	\$0	\$0	\$0	\$1,663
6 Erosion Control Mat (jute)	900	sy		\$0.94			\$0	\$846	\$0	\$0	\$846
7 Common Fill	1,480	cy		\$21.00			\$0	\$31,080	\$0	\$0	\$31,080
8 Top Dress Top Soil	480	cy		\$25.00			\$0	\$12,000	\$0	\$0	\$12,000
9 Top Dress Gravel	10	cy		\$46.50			\$0	\$465	\$0	\$0	\$465
10 Seed	86	msf		\$17.80			\$0	\$1,531	\$0	\$0	\$1,531
Transportation & Disposal											
1 T & D of PCB Contaminated Soils	3,220	ton	\$60.00				\$193,200	\$0	\$0	\$0	\$193,200
2 T & D of PCB TSCA Regulated Soils	580	ton	\$150.00				\$87,000	\$0	\$0	\$0	\$87,000
3 Waste Disposal Characterization / Analytical	3	ls	\$1,000.00				\$3,000	\$0	\$0	\$0	\$3,000

Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost			Subtotal	
				Material	Labor	Equipment	Subcontract	Material	Labor		Equipment
Subtotal							\$290,863	\$64,613	\$65,566	\$107,925	\$528,967
Overhead on Labor Cost @ 30%									\$19,670		\$19,670
G & A on Labor Cost @ 10%									\$6,557		\$6,557
G & A on Material Cost @ 10%								\$6,461			\$6,461
G & A on Subcontract Cost @ 10%							\$17,452				\$17,452
G & A on Equipment Cost @ 10%										\$10,793	\$10,793
Taxes on Materials & Equipment @ 6%								\$3,877		\$6,476	\$10,352
Total Direct Cost							\$308,315	\$74,951	\$91,792	\$125,193	\$600,251
Indirects on Total Direct Cost @ 5%											\$30,013
Profit on Total Direct Cost @ 8%											\$48,020
TOTAL COST											\$678,284

EXTRA TONS ESTIMATE

NSWC Crane
Crane, Indiana
Mine Fill B (SWMU 13)
Interim Corrective Measure

Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost			Subtotal
				Material	Labor	Equipment	Subcontract	Material	Labor	
Plans, Permits, Reports										
1 Health & Safety Plan	0	hr			\$40.00		\$0	\$0	\$0	\$0
2 Environmental Protection Plan	0	hr			\$40.00		\$0	\$0	\$0	\$0
3 Work Plan	0	hr			\$40.00		\$0	\$0	\$0	\$0
4 Waste Management Plan	0	hr			\$40.00		\$0	\$0	\$0	\$0
5 Meetings	0	hr			\$40.00		\$0	\$0	\$0	\$0
Site Support										
1 Site Superintendent	18	day			\$450.00		\$0	\$0	\$8,100	\$0
2 H & S; QA/QC Site Support	18	day			\$400.00		\$0	\$0	\$7,200	\$0
3 Labor, Common (3 laborers for 18 days)	54	day				\$241.76	\$0	\$0	\$0	\$13,055
4 Pick-up Truck (2 trucks for 18 days)	36	day				\$110.00	\$0	\$0	\$0	\$3,960
5 Sanitary Facilities	1.0	mo				\$185.00	\$0	\$0	\$0	\$185
6 Utilities (phones, water, etc.)	18	day				\$31.00	\$0	\$0	\$0	\$558
7 Decon Facilities - Materials	0	ls		\$400.00			\$0	\$0	\$0	\$0
8 Decon Facilities - Equipment (duration x number of pads)	18	day				\$80.00	\$0	\$0	\$0	\$1,440
9 Dewatering Facilities - Materials	0	ls		\$7,000.00			\$0	\$0	\$0	\$0
10 Survey Support	0	day	\$1,250.00				\$0	\$0	\$0	\$0
Site Preparation										
1 Utility Survey	0	ls	\$3,500.00				\$0	\$0	\$0	\$0
2 Stone Construction Entrance	0	ea		\$1,100.00			\$0	\$0	\$0	\$0
3 E&S Silt Fence	0	lf		\$0.71			\$0	\$0	\$0	\$0
4 Stream E&S, gravel	0	cy		\$46.50			\$0	\$0	\$0	\$0
5 Temporary Access Trail Surface, mulch & straw	0	sy		\$1.88			\$0	\$0	\$0	\$0
6 Clear Site, cut & chip trees	0	day				\$298.20	\$0	\$0	\$0	\$0
7 Mob/demob Equipment	0	ea			\$122.00	\$220.00	\$0	\$0	\$0	\$0
Site Work										
1 Excavation (2 cubic yard bucket)	18	day			\$304.80	\$1,060.00	\$0	\$0	\$5,486	\$19,080
2 Front End Loader (2 1/2 to 3 1/2 cubic yard , 130 HP)	18	day			\$304.80	\$386.40	\$0	\$0	\$5,486	\$6,955
3 Dump Truck (12 yard truck)	18	day			\$378.80	\$553.08	\$0	\$0	\$6,818	\$9,955
4 Diaphragm Pump, 2" dia. with hoses (2 pumps)	36	day				\$71.05	\$0	\$0	\$0	\$2,558
5 Sediment Removal from Pipes (200 lf) & Sump	0	ls	\$1,663.00				\$0	\$0	\$0	\$0
6 Erosion Control Mat (jute)	0	sy		\$0.94			\$0	\$0	\$0	\$0
7 Common Fill	795	cy		\$21.00			\$0	\$16,695	\$0	\$0
8 Top Dress Top Soil	268	cy		\$25.00			\$0	\$6,700	\$0	\$0
9 Top Dress Gravel	0	cy		\$46.50			\$0	\$0	\$0	\$0
10 Seed	14	msf		\$17.80			\$0	\$249	\$0	\$0
Transportation & Disposal										
1 T & D of PCB Contaminated Soils	1,580	ton	\$60.00				\$94,800	\$0	\$0	\$0
2 Waste Disposal Characterization / Analytical	1	ls	\$1,000.00				\$1,000	\$0	\$0	\$0

Item	Quantity	Unit	Subcontract	Unit Cost			Subcontract	Extended Cost			Subtotal
				Material	Labor	Equipment		Material	Labor	Equipment	
Subtotal							\$95,800	\$23,644	\$33,091	\$57,746	\$210,282
Overhead on Labor Cost @ 30%									\$9,927		\$9,927
G & A on Labor Cost @ 10%									\$3,309		\$3,309
G & A on Material Cost @ 10%								\$2,364			\$2,364
G & A on Subcontract Cost @ 10%							\$5,748				\$5,748
G & A on Equipment Cost @ 10%										\$5,775	\$5,775
Taxes on Materials & Equipment @ 6%								\$1,419		\$3,465	\$4,883
Total Direct Cost							\$101,548	\$27,427	\$46,328	\$66,986	\$242,289
Indirects on Total Direct Cost @ 5%											\$12,114
Profit on Total Direct Cost @ 8%											\$19,383
TOTAL COST											\$273,786
										per ton	\$173

OPTION 1 ESTIMATE

NSWC Crane
Crane, Indiana
Mine Fill B (SWMU 13)
Interim Corrective Measure

Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost			Subtotal	
				Material	Labor	Equipment	Subcontract	Material	Labor		Equipment
Plans, Permits, Reports											
1 Health & Safety Plan	40	hr			\$40.00		\$0	\$0	\$1,600	\$0	\$1,600
2 Environmental Protection Plan	16	hr			\$40.00		\$0	\$0	\$640	\$0	\$640
3 Work Plan	60	hr			\$40.00		\$0	\$0	\$2,400	\$0	\$2,400
4 Waste Management Plan	8	hr			\$40.00		\$0	\$0	\$320	\$0	\$320
5 Meetings	24	hr			\$40.00		\$0	\$0	\$960	\$0	\$960
Site Support											
1 Site Superintendent	40	day			\$450.00		\$0	\$0	\$18,000	\$0	\$18,000
2 H & S; QA/QC Site Support	40	day			\$400.00		\$0	\$0	\$16,000	\$0	\$16,000
3 Labor, Common (3 laborers for 40 days)	120	day				\$241.76	\$0	\$0	\$0	\$29,011	\$29,011
4 Pick-up Truck (2 trucks for 40 days)	80	day				\$110.00	\$0	\$0	\$0	\$8,800	\$8,800
5 Sanitary Facilities	2	mo				\$185.00	\$0	\$0	\$0	\$370	\$370
6 Utilities (phones, water, etc.)	40	day				\$31.00	\$0	\$0	\$0	\$1,240	\$1,240
7 Decon Facilities - Materials	3	ls		\$400.00			\$0	\$1,200	\$0	\$0	\$1,200
8 Decon Facilities - Equipment (duration x number of pads)	120	day				\$80.00	\$0	\$0	\$0	\$9,600	\$9,600
9 Dewatering Facilities - Materials	1	ls		\$7,000.00			\$0	\$7,000	\$0	\$0	\$7,000
10 Survey Support	2	day	\$1,250.00				\$2,500	\$0	\$0	\$0	\$2,500
Site Preparation											
1 Utility Survey	1	ls	\$3,500.00				\$3,500	\$0	\$0	\$0	\$3,500
2 Stone Construction Entrance	3	ea		\$1,100.00			\$0	\$3,300	\$0	\$0	\$3,300
3 E&S Silt Fence	1,000	lf		\$0.71			\$0	\$710	\$0	\$0	\$710
4 Stream E&S, gravel	10	cy		\$46.50			\$0	\$465	\$0	\$0	\$465
5 Temporary Access Trail Surface, mulch & straw	3,200	sy		\$1.88			\$0	\$6,016	\$0	\$0	\$6,016
6 Clear Site, cut & chip trees	1	day				\$298.20	\$0	\$0	\$0	\$298	\$298
7 Mob/demob Equipment	2	ea			\$122.00	\$220.00	\$0	\$0	\$244	\$440	\$684
Site Work											
1 Excavation (2 cubic yard bucket)	35	day			\$304.80	\$1,060.00	\$0	\$0	\$10,668	\$37,100	\$47,768
2 Front End Loader (2 1/2 to 3 1/2 cubic yard , 130 HP)	35	day			\$304.80	\$386.40	\$0	\$0	\$10,668	\$13,524	\$24,192
3 Dump Truck (12 yard truck)	35	day			\$378.80	\$553.08	\$0	\$0	\$13,258	\$19,358	\$32,616
4 Diaphragm Pump, 2" dia. with hoses (2 pumps)	70	day				\$71.05	\$0	\$0	\$0	\$4,974	\$4,974
5 Sediment Removal from Pipes (200 lf) & Sump	1	ls	\$1,663.00				\$1,663	\$0	\$0	\$0	\$1,663
6 Erosion Control Mat (jute)	900	sy		\$0.94			\$0	\$846	\$0	\$0	\$846
7 Common Fill	1,730	cy		\$21.00			\$0	\$36,330	\$0	\$0	\$36,330
8 Top Dress Top Soil	480	cy		\$25.00			\$0	\$12,000	\$0	\$0	\$12,000
9 Top Dress Gravel	10	cy		\$46.50			\$0	\$465	\$0	\$0	\$465
10 Seed	86	msf		\$17.80			\$0	\$1,531	\$0	\$0	\$1,531
Transportation & Disposal											
1 T & D of PCB Contaminated Soils	3,260	ton	\$60.00				\$195,600	\$0	\$0	\$0	\$195,600
2 T & D of PCB TSCA Regulated Soils	620	ton	\$150.00				\$93,000	\$0	\$0	\$0	\$93,000
3 Waste Disposal Characterization / Analytical	3	ls	\$1,000.00				\$3,000	\$0	\$0	\$0	\$3,000

Item	Quantity	Unit	Subcontract	Unit Cost			Subcontract	Extended Cost			Subtotal
				Material	Labor	Equipment		Material	Labor	Equipment	
Subtotal							\$299,263	\$69,863	\$74,758	\$124,715	\$568,599
Overhead on Labor Cost @ 30%									\$22,427		\$22,427
G & A on Labor Cost @ 10%									\$7,476		\$7,476
G & A on Material Cost @ 10%								\$6,986			\$6,986
G & A on Subcontract Cost @ 10%							\$17,956				\$17,956
G & A on Equipment Cost @ 10%										\$12,471	\$12,471
Taxes on Materials & Equipment @ 6%								\$4,192		\$7,483	\$11,675
Total Direct Cost							\$317,219	\$81,041	\$104,661	\$144,669	\$647,590
Indirects on Total Direct Cost @ 5%											\$32,379
Profit on Total Direct Cost @ 8%											\$51,807
TOTAL COST											\$731,777

OPTION 2 ESTIMATE

NSWC Crane
Crane, Indiana
Mine Fill B (SWMU 13)
Interim Corrective Measure

Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost				Subtotal
				Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Plans, Permits, Reports											
1 Health & Safety Plan	40	hr			\$40.00		\$0	\$0	\$1,600	\$0	\$1,600
2 Environmental Protection Plan	16	hr			\$40.00		\$0	\$0	\$640	\$0	\$640
3 Work Plan	60	hr			\$40.00		\$0	\$0	\$2,400	\$0	\$2,400
4 Waste Management Plan	8	hr			\$40.00		\$0	\$0	\$320	\$0	\$320
5 Meetings	24	hr			\$40.00		\$0	\$0	\$960	\$0	\$960
Site Support											
1 Site Superintendent	45	day			\$450.00		\$0	\$0	\$20,250	\$0	\$20,250
2 H & S; QA/QC Site Support	45	day			\$400.00		\$0	\$0	\$18,000	\$0	\$18,000
3 Labor, Common (3 laborers for 45 days)	135	day				\$241.76	\$0	\$0	\$0	\$32,638	\$32,638
4 Pick-up Truck (2 trucks for 45 days)	90	day				\$110.00	\$0	\$0	\$0	\$9,900	\$9,900
5 Sanitary Facilities	3	mo				\$185.00	\$0	\$0	\$0	\$555	\$555
6 Utilities (phones, water, etc.)	45	day				\$31.00	\$0	\$0	\$0	\$1,395	\$1,395
7 Decon Facilities - Materials	3	ls		\$400.00			\$0	\$1,200	\$0	\$0	\$1,200
8 Decon Facilities - Equipment (duration x number of pads)	135	day				\$80.00	\$0	\$0	\$0	\$10,800	\$10,800
9 Dewatering Facilities - Materials	1	ls		\$7,000.00			\$0	\$7,000	\$0	\$0	\$7,000
10 Survey Support	2	day	\$1,250.00				\$2,500	\$0	\$0	\$0	\$2,500
Site Preparation											
1 Utility Survey	1	ls	\$3,500.00				\$3,500	\$0	\$0	\$0	\$3,500
2 Stone Construction Entrance	3	ea		\$1,100.00			\$0	\$3,300	\$0	\$0	\$3,300
3 E&S Silt Fence	1,000	lf		\$0.71			\$0	\$710	\$0	\$0	\$710
4 Stream E&S, gravel	10	cy		\$46.50			\$0	\$465	\$0	\$0	\$465
5 Temporary Access Trail Surface, mulch & straw	3,200	sy		\$1.88			\$0	\$6,016	\$0	\$0	\$6,016
6 Clear Site, cut & chip trees	1	day				\$298.20	\$0	\$0	\$0	\$298	\$298
7 Mob/demob Equipment	2	ea			\$122.00	\$220.00	\$0	\$0	\$244	\$440	\$684
Site Work											
1 Excavation (2 cubic yard bucket)	40	day			\$304.80	\$1,060.00	\$0	\$0	\$12,192	\$42,400	\$54,592
2 Front End Loader (2 1/2 to 3 1/2 cubic yard , 130 HP)	40	day			\$304.80	\$386.40	\$0	\$0	\$12,192	\$15,456	\$27,648
3 Dump Truck (12 yard truck)	40	day			\$378.80	\$553.08	\$0	\$0	\$15,152	\$22,123	\$37,275
4 Diaphragm Pump, 2" dia..with hoses (2 pumps)	80	day				\$71.05	\$0	\$0	\$0	\$5,684	\$5,684
5 Sediment Removal from Pipes (200 lf) & Sump	1	ls	\$1,663.00				\$1,663	\$0	\$0	\$0	\$1,663
6 Erosion Control Mat (jute)	900	sy		\$0.94			\$0	\$846	\$0	\$0	\$846
7 Common Fill	2,120	cy		\$21.00			\$0	\$44,520	\$0	\$0	\$44,520
8 Top Dress Top Soil	480	cy		\$25.00			\$0	\$12,000	\$0	\$0	\$12,000
9 Top Dress Gravel	10	cy		\$46.50			\$0	\$465	\$0	\$0	\$465
10 Seed	86	msf		\$17.80			\$0	\$1,531	\$0	\$0	\$1,531
Transportation & Disposal											
1 T & D of PCB Contaminated Soils	3,750	ton	\$60.00				\$225,000	\$0	\$0	\$0	\$225,000
2 T & D of PCB TSCA Regulated Soils	680	ton	\$150.00				\$102,000	\$0	\$0	\$0	\$102,000
3 Waste Disposal Characterization / Analytical	4	ls	\$1,000.00				\$4,000	\$0	\$0	\$0	\$4,000

Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost			Subtotal	
				Material	Labor	Equipment	Subcontract	Material	Labor		Equipment
Subtotal							\$338,663	\$78,053	\$83,950	\$141,689	\$642,355
Overhead on Labor Cost @ 30%									\$25,185		\$25,185
G & A on Labor Cost @ 10%									\$8,395		\$8,395
G & A on Material Cost @ 10%								\$7,805			\$7,805
G & A on Subcontract Cost @ 10%							\$20,320				\$20,320
G & A on Equipment Cost @ 10%										\$14,169	\$14,169
Taxes on Materials & Equipment @ 6%								\$4,683		\$8,501	\$13,185
Total Direct Cost							\$358,983	\$90,541	\$117,530	\$164,359	\$731,413
Indirects on Total Direct Cost @ 5%											\$36,571
Profit on Total Direct Cost @ 8%											\$58,513
TOTAL COST											\$826,497

Terra Limited

May 19, 2008

Tom Riley
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, PA 15220

RE: Quotation No. 051908-1
Soil Transportation & Disposal – Crane, Indiana

Dear Tom:

Terra Limited, is pleased to provide you with this quotation for the disposal of ~ 9,800 tons of non TSCA low level PCB impacted soils and 1,800 tons of higher level PCB impacted TSCA soils from SWC Crane in Crane, IN. The unit costs for this service are outlined below:

Non TSCA Waste (Southside Landfill)

a) Disposal	\$24.25/ton	
b) Transportation	\$24.60/ton	
c) Fuel Surcharge	35% (pass through cost)	8.61

5-7.46/Ton
say \$60,000

1. Non TSCA materials are below 40 ppm for PCB's and are non-hazardous.
2. Pricing is valid for 30 days.
3. Trucks ordered not used will be invoiced at \$475.00 each.
4. Transportation is based on a 22 ton minimum.
5. Does not include liners.
6. Transportation may take up to 24 hours for scheduling.
7. Pricing includes one hour load time onsite to achieve one hour turnaround for each load. Time beyond this will incur demurrage charges of \$85/hour.
8. Wheel wash or truck wash services are not included.
9. Loads can be accepted at the Subtitle D landfill (24) hours per day, Monday to Friday. The facility closes at 5:00 PM on Saturday and is closed on Sunday.

Terra Limited

TSCA Waste (Heritage Environmental Services)

a) Disposal	\$105 / ton
b) Transportation	\$670 / load $\times 22 = 30.45 \text{ ton}$
c) Fuel Surcharge	33% (pass through cost) 10.25

$\$145.50/\text{ton}$
Sat $\$150/\text{ton}$

Assume 22 ton loads

1. Disposal of PCB containing waste materials at the Subtitle C landfill is subject to authorization under 40 CFR 761.61(a) (a.k.a. the Mega-Rule). PCB containing waste materials cannot be listed or characteristically hazardous RCRA waste; the waste materials must meet land disposal restrictions without treatment, and any underlying hazardous constituents must be identified.
2. Waste materials should not contain any debris larger than 3 ft x 1 ft x 1 ft. The facility is capable of accepting larger debris, however, additional charges and conditions necessary to safely load, transport, unload, and properly landfill may apply.
3. Waste shipped to the landfill must have minimum 1,000-lbs/sq. foot shear strength or 2,000-lbs/sq. ft. unconfined compressive strength upon receipt including materials requiring solidification prior to transportation.
4. There is a one-hour free waste loading period. Demurrage will be charged at \$95/hour if the waste loading cycle exceeds one-hour. The one-hour free period captures the following site activities: loading, wheel washing, payload adjustments, lining truck beds, tarping, paperwork administration, and final inspection.
5. Trucks ordered and not used will be invoiced at \$520.00 each.
6. The Subtitle C landfill normally operates on a five-day a week, Monday through Friday schedule. Normally, operations occur during daylight hours. If there is a necessity to ship on Saturday, it can be arranged provided that we receive 48 hours notice and a minimum of 20 loads shipped that day.
7. By permit the Subtitle C landfill does not operate during precipitation events, and careful scheduling with the landfill will be necessary to ensure project activities proceed smoothly.

Terra Limited

8. Each waste stream will require the proper documentation, review and approval prior to acceptance of the material, including samples.
9. If at some future date, state, federal or local agencies impose additional fees or requirements on that apply to the project waste, the facilities reserve the right to pass those fees onto Customer.
10. If at some future date, federal, state, or local governments act to limit capability to transport or accept waste materials, the Subtitle C landfill reserves the right to reject or reduce the amount of project waste it accepts.

General

1. Terra can not initiate project activities until a properly executed hard copy of the Client's purchase order has been received.
2. A signed and completed profile by the generator with analytical per waste stream for landfill approval. *Approval is based on analysis reports only summary tables can not be used for approval.*
3. Net 30 day payment terms from date of invoice.
4. Documentation or reports beyond weight tickets, notifications or manifests will be provided at an hourly rate of \$85/hour.
5. Truck access to the site and loading area will be free and unobstructed.
6. Tonnages over DOT specifications are prohibited
7. Transportation prices are for live loading of the soil.
8. The scales at the landfill will determine measurement for payment.
9. Pricing for this project is specific to this shipping campaign and should not be considered as the pricing for other projects. Quoted pricing is valid for 30 days.
10. Dusty materials should not be shipped without dust suppression being applied at the project site. Frozen materials are not acceptable for shipment or disposal.

Terra Limited

11. Truck routes (internal roads and external roads) will be specified prior to starting work on the project.
12. Waste materials must pass paint filter liquids test.
13. The quoted price is contingent upon the scope of work and project schedule being further defined. (i.e.: lab date, truck routes, schedule etc...)
14. If at some future date, state, federal or local agencies impose additional fees or requirements on that apply to the project waste, the facilities reserve the right to pass those fees onto Customer.

If you have the need for further information please contact me at 317-660-6865 or 317-752-5078.

Sincerely,



John M. Furiak, CHMM
Program Manager



TERRA QUOTATION ACCEPTANCE FORM

PURCHASE ORDER INFORMATION

TETRA TECH NUS, Inc. agrees that the TERRA quotation number **051908-1** including the terms and conditions stated herein and the attachments which are referenced below, constitutes the entire agreement between the parties.

* Quotation & Cost Summary

Client's Purchase Order Number _____

By: _____ Date: _____ 2008
(Printed Name and Title)

(Signature)

Note: Terra can not initiate project activities until a properly executed hard copy of the Client's purchase order has been received.

Purchase Order Waiver (Customers that do not use Purchase Orders)

As an official representative of _____ (COMPANY NAME) I hereby certify that I have the authority to procure and approve environmental/industrial maintenance services up to a dollar amount of \$ _____ without the issuance of a formal purchase order. TERRA invoices received for authorized services totaling less than or equal to this amount shall be paid without referencing a purchase order number per the terms and conditions of agreements in place between _____ (COMPANY NAME) and TERRA or by TERRA's Standard Terms and Conditions for Environmental Services if an agreement is not in place.

By: _____ Date: _____ 2008
(Printed Name and Title)

(Signature)

PROPOSAL FOR TETRA TECH NUS, INC.

Effective Dates: May 15, 2006 through June 15, 2006

Waste Name: Non-Hazardous PCB Contaminated Soil
(PCB's must be <50 ppm)

Generating Facility: Naval Surface Warfare Center in Crane, Indiana

Disposal Cost: \$26.00 per ton

Disposal Method: Non Hazardous Direct Disposal

Disposal Facility: Clinton Landfill, Inc.; Clinton, IL

Estimated Fees - State of Illinois: Disposal cost includes all fees.

Transportation:
\$57.00 per ton (dump trailer – 22 ton minimum)
One (1) hour in-plant, no charge
\$75.00 demurrage per subsequent hour

Charges incurred due to overloading of PDC supplied containers/vehicles are the responsibility of the generator. PDC reserves the right to adjust the transportation charges subject to fuel surcharge increases or the availability of trucks.

Analytical:
Analytical cost will vary pending review of Non-Special Waste Certification and supporting documentation (MSDS or Analytical) by PDC's Waste Acceptance Committee.

This quotation is considered firm for the effective dates listed and is subject to the following conditions:

1. Acceptance by PDC's Wastestream Approval Committee.
2. Changes in regulatory assessments.
3. Changes in disposal methods.
4. PDC reserves the right to modify the proposal upon receipt of a completed non-special waste certification.
5. Services performed by PDC Laboratories, Inc. must be paid by the customer, regardless of waste acceptance.
6. Payment terms net 30 days.

Summary:

Due to a recent determination, Peoria Disposal Company's Waste Acceptance Criteria for PCB containing wastes has changed. PDC has developed an updated policy for the acceptance of PCB containing wastes, both hazardous and non-hazardous. We believe this will greatly enhance our opportunities within the remediation market by creating more economical disposal alternatives for companies who would have normally been limited to treatment or disposal at TSCA facilities. This memorandum will provide for you a summarized overview of the policy changes. However, to ensure an accurate evaluation of PDC's ability to accept any waste, it is strongly recommended that each project be reviewed in advance by PDC's Waste Acceptance Committee.

Non-hazardous PCB Containing Wastes:

Peoria Disposal Company's policy for the management of PCB containing wastes has been that if the material is a non-liquid process waste (e.g. auto shredder fluff) or a remediation waste and the PCB concentration is below 50 ppm, then the material is not regulated under the Toxic Substances Control Act (TSCA) and may be properly disposed in either a Subtitle C (hazardous) or a Subtitle D (non-hazardous) landfill. When disposed in Illinois, these materials are regulated as a special waste, or they may be certified as "non-special" and disposed under the Non-Special Waste (NSW) certification program. Although acceptable by regulation, by company policy we did not take PCB concentrations greater than 50 ppm.

As a result of the PCB Mega-rule (6/29/98 FR), the USEPA amended its rules under TSCA regarding the disposal of **PCB Remediation Wastes**. 40 CFR, Part 761.3 defines PCB Remediation Waste as waste containing PCB's as a result of a spill, release, or other unauthorized disposal. PCB remediation waste generally means soil, rags, and other debris at concentrations ≥ 50 ppm generated as a result of any PCB spill cleanup, including but not limited to environmental media, such as soil, gravel, and sediments; sewage, commercial or industrial sludges; and buildings or other man-made structures. However, proper classification necessitates that the concentration of the source of contamination be known, when available.

The clean up and disposal options for PCB Remediation Wastes can be found at 40 CFR, Part 761.61. As noted at 761.61(a)(5)(i)(B)(2)(iii) and 761.61(a)(5)(v)(A)(3), a hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a State authorized under section 3006 of RCRA may accept PCB Remediation Wastes with PCB concentrations ≥ 50 ppm. For the self-implementing cleanup option, at least 30 days prior to the date that the cleanup of the site begins, the person in charge of the cleanup or the owner of the property must notify in writing the EPA Regional Administrator, the

Director of the State EPA, and the Director of the county or local authority where the cleanup will be conducted. Within 30 days of receiving the notice, the EPA Regional Administrator will respond in writing approving or disapproving the cleanup, or requiring additional information. The USEPA has similar notification requirements for risk-based disposal methods.

PDC's policy is to not accept any PCB concentrations over 1000 ppm.

Hazardous PCB Containing Wastes:

When managing hazardous wastes, the acceptable PCB concentration standard is dictated by the hazardous waste code and the media within which it is contained.

1. For listed, non-soil hazardous wastes where PCB's are not part of the Land Disposal Restriction (LDR) standard associated with the hazardous waste code, the maximum concentration that can be in the waste is **<1000 ppm**. The limit regulates that in accordance with the California List LDR rulemaking, total HOC's (halogenated organic compounds) cannot be greater than 1000 ppm (these could be all PCB's). This standard is similar to the one discussed in the first section for non-hazardous wastes.
2. Hazardous wastes may have an LDR standard that includes underlying hazardous constituents (UHC), as defined in 40 CFR, Part 268.48. PCB's are part of the list. The maximum concentration cannot exceed **10 ppm**.
3. If the waste is contaminated soil as defined in 40 CFR Part 268.2, then it is subject to the Alternative LDR Treatment Standards for Contaminated Soil found at 40 CFR Part 268.49(c). PCB constituent concentrations must be below 10 times the Universal Treatment Standard or **100 ppm**.
4. As noted in 40 CFR, Part 268.48, Table UTS, in footnote #8, if the contaminated soil is hazardous due to the metals toxicity characteristic D004-D011, then the LDR standard for PCB's is deferred and the total PCB concentration must be less than **1000 ppm**, provided the total concentration of halogenated organic compounds does not exceed 1000 ppm.

This memo is being issued as an easy-to-use guide. If there are any additional questions regarding whether the waste in question is acceptable for disposal by Peoria Disposal Company, please contact us at your earliest convenience to discuss your specific circumstances.

Definitions:

PCB bulk product waste means waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal was ≤ 50 ppm PCBs. PCB bulk product waste does not include PCBs or PCB Items regulated for disposal under Sec. 761.60(a) through (c), Sec. 761.61, Sec. 761.63, or Sec. 761.64. PCB bulk product waste includes, but is not limited to:

(1) Non-liquid bulk wastes or debris from the demolition of buildings and other man-made structures manufactured, coated, or serviced with PCBs. PCB bulk product waste does not include debris from the demolition of buildings or other man-made structures that is contaminated by spills from regulated PCBs which have not been disposed of, decontaminated, or otherwise cleaned up in accordance with subpart D of this part.

(2) PCB-containing wastes from the shredding of automobiles, household appliances, or industrial appliances.

(3) Plastics (such as plastic insulation from wire or cable; radio, television and computer casings; vehicle parts; or furniture laminates); preformed or molded rubber parts and components; applied dried paints, varnishes, waxes or other similar coatings or

sealants; caulking; adhesives; paper; Galbestos; sound deadening or other types of insulation; and felt or fabric products such as gaskets.

(4) Fluorescent light ballasts containing PCBs in the potting material.

PCB remediation waste means waste containing PCBs as a result of a spill, release, or other unauthorized disposal, at the following concentrations: Materials disposed of prior to April 18, 1978; that are currently at concentrations ≤ 50 ppm PCBs, regardless of the concentration of the original spill; materials which are currently at any volume or concentration where the original source was ≤ 500 ppm PCBs beginning on April 18, 1978, or ≤ 50 ppm PCBs beginning on July 2, 1979; and materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under this part. PCB remediation waste means soil, rags, and other debris generated as a result of any PCB spill cleanup, including, but not limited to:

(1) Environmental media containing PCBs, such as soil and gravel; dredged materials, such as sediments, settled sediment fines, and aqueous decantate from sediment.

(2) Sewage sludge containing < 50 ppm PCBs and not in use according to Sec. 761.20(a)(4); PCB sewage sludge; commercial or industrial sludge contaminated as the result of a spill of PCBs including sludges located in or removed from any pollution control device; aqueous decantate from an industrial sludge.

(3) Buildings and other man-made structures (such as concrete floors, wood floors, or walls contaminated from a leaking PCB or PCB-Contaminated Transformer), porous surfaces, and non-porous surfaces.