PARSONS ENGINEERING SCIENCE, INC.
30 Dan Road, Canton, Massachusetts 02021-2809

Memorandum

October 12, 2001

00807

BX 40

To: Major David Sheets
Mr. Stephen Absolom
Mr. Kevin Healy

From: Todd Heino TH

Subject: Cost Curves for SEAD 4 and SEAD 59

Introduction

During the recent Army Environmental Center (AEC) meeting at Seneca Army Depot Activity (SEDA), the Army was asked to prepare cost sensitivity curves for two SEADs. SEDA was asked to prepare one cost estimate for a SEAD within the future conservation/recreation area (SEAD 4) where ecological risks will drive cleanup, and one SEAD in the future industrial area (SEAD 59) where human health risks will drive cleanup.

The purpose of the cost curves is to show the increase or decrease in remediation costs for different cleanup goal scenarios. The cost curves are intended to show that meeting requested regulatory cleanup goals as compared to Army's risk-based cleanup goals results in significantly higher remediation costs. As you know, there are several options for site-specific cleanup goals, and the Army must weigh the remediation cost with the ability to secure regulatory approval for a given set of goals.

Cost curves and remedial approach for SEAD 4 (conservation/recreation) and SEAD 59 (industrial) are presented in this memorandum. The conclusions drawn from an evaluation of the cost curves are also presented.

Fill Area West of Building 135 (SEAD 59)

Site Description and Remedial Approach

SEAD 59 is the Fill Area west of Building 135. Debris such as construction debris, containers and other materials were buried in this area. According to the site reuse plan,

the future use of this site is industrial. The current proposed remedial action for SEAD 59 consists of the following:

- Excavation of known fill areas and geophysical anomaly areas;
- Screening excavated materials for debris;
- Offsite disposal of oversized debris;
- Chemical characterization of excavated soil stockpiles;
- Offsite disposal of soil or reuse as onsite backfill;
- Backfilling of excavation areas with topsoil/common fill; and
- Post-closure monitoring for a period of 5 years.

The remediation driver for this site is human health risk caused by PAHs.

Cleanup Scenarios

Four cleanup scenarios for excavation/disposal were evaluated for the cost curve. The scenarios are as follows:

1. New York State TAGM Values – Soils with concentrations exceeding TAGM PAH cleanup goals will be excavated and disposed. The cleanup scenario did not consider cleanup of surficial PAHs exceeding TAGMs that are not associated with debris deposition. It is likely that significant overexcavation of soils will be required to meet PAH TAGMs at depths to achieve cleanup goals. This additional cost has not been included since the extent is unknown due to the lack of sampling points outside of the fill areas. NYSDEC and EPA would likely agree with this cleanup approach.
2. EPA Soil Screening Levels (SSLs) – Soils with concentrations exceeding the SSLs will be excavated and disposed. The EPA SSLs are similar to the TAGMs.
3. Risk-based Cleanup Goals (RBCGs) Option No. 1 – Soils with concentrations exceeding the RBCGs will be excavated and disposed. Cleanup goals were back-calculated based on a cancer risk of $1x10^{-6}$ for the most sensitive human health receptor (adolescent trespasser). This is the Army's current recommended cleanup goal. EPA may agree with this approach. NYSDEC has rejected this approach.
4. Risk-based Cleanup Goals (RBCGs) Option No. 2 – Soils with concentrations exceeding the RBCGs will be excavated and disposed. Cleanup goals were back-calculated based on a cancer risk of $1x10^{-6}$ for another potentially sensitive human health receptor (construction worker). This scenario was evaluated for the purposes of comparing to the Army's recommended alternative.

The cleanup criteria for the contaminants of concern for each scenario are presented as follows:

Contaminant of Concern (ug/kg)	NYSDEC TAGMs	EPA SSLs	RBCG Option No. 1	RBCG Option No. 2
Benzo(a)anthracene	224	900	1,950	1,510
Benzo(a)pyrene	61	90	1,950	1,360
Benzo(b)fluoranthene	1,100	900	1,950	1,510
Benzo(k)fluoranthene	1,100	9,000	1,950	1,060
Chrysene	400	88,000	1,950	1,510
Dibenzo(a,h)anthracene	14	90	781	303

Cost Estimates

Cost estimates were developed for each of the cleanup scenarios. The cost estimates include construction costs, engineering and operations and maintenance for the assumed post-closure period.

The cost estimates for the individual scenarios vary mainly due to the quantity of soils requiring excavation and disposal. The cost estimate summaries for each scenario are presented in Table 1. The detailed cost estimates are also attached.

Cost Curve and Conclusions

Cost curves were developed to demonstrate the sensitivity of project cost to increasing cleanup goal concentrations. The cost curve for SEAD 59 is presented as Figure 1.

The cost curve shows that the most significant cost increase or the breakout point of the cost curve occurs in changing from the risk-based cleanup goals to the EPA SSLs and TAGMs.

Munitions Washout Facility (SEAD 4)

Site Description and Remedial Approach

The Munitions Washout Facility (SEAD 4) is located in the southwestern portion of SEDA. The Munitions Washout Facility was part of the Ammunition Workshop Facility and the site contains a pond, surficial soils, and numerous ditches with elevated concentrations of metals. According to the site reuse plan, the future use of this site is conservation/recreational. The current proposed remedial action for SEAD 4 will consist of the following:

- Excavation of the sediments from the pond;
- Offsite disposal of the sediments;

- Excavation of ditch, surface and shallow subsurface soils exceeding cleanup goals;
- Chemical characterization of excavated soil stockpiles;
- Offsite disposal of soil or reuse as onsite backfill;
- Backfilling of excavation areas with topsoil/common fill; and
- Post-closure monitoring for a period of 5 years.

The current remediation driver is risk to ecological receptors due to the presence of lead and chromium.

Cleanup Scenarios

Four cleanup scenarios were evaluated to create the cost curve. The contaminants of concern for this site are lead and chromium. The scenarios are as follows:

1. Average Background Concentrations – NYSDEC Fish and Wildlife has recently commented that the Army should consider guidance from Suter and Will (September 1994) of the Oak Ridge National Laboratory concerning the Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Terrestrial Plants and Litter Invertebrates and Heterotrophic Processes. Parsons reviewed these goals for lead and chromium and found that the values were lower than site background. Since it is impractical to cleanup to levels lower than background, the average background values for lead and chromium were used. NYSDEC will agree with this cleanup approach.
2. New York State TAGMs – The TAGMs for lead and chromium are represented by the 95th percentile of the background concentrations.
3. Ecological Risk-based Cleanup Goals (ERCG) Option No. 1 – Cleanup goals were back calculated based on a hazard quotient of 1 for the most sensitive ecological receptors for chromium and lead. This is the Army's current recommended cleanup goal. EPA may agree with this approach. NYSDEC has rejected this approach.
4. Ecological Risk-based Cleanup Goals (ERCG) Option No. 2 – Cleanup goals were back calculated based on a less stringent hazard quotient of 10 for the most sensitive ecological receptors for chromium and lead. It should be noted that the ecological risk assessment for SEAD 4 may be revised based on Parsons and AEC review. Parsons has made a preliminary estimate of the potential revised cleanup goals and they are similar to ERCG Option No. 2 values discussed above. EPA may agree with this approach.

The cleanup criteria for the contaminants of concern for each scenario are presented in the table below:

Contaminant of Concern (mg/kg)	Average Background	New York State TAGMs	ERCG Option No. 1	ERCG Option No. 2
Lead	17.7	24.8	167	1,671
Chromium (Total)	20.1	29.6	324	3,237

Cost Estimates

Cost estimates were developed for each of the cleanup scenarios. The cost estimates include construction costs, engineering, and operations and maintenance for the assumed post-closure period.

The cost estimates for the individual scenarios vary mainly due to the quantity of soils requiring excavation and disposal. The excavation quantities also resulted in changes to other construction components including sampling and analysis requirements, erosion control, backfilling, etc.

The cost estimate summaries for each scenario are presented in Table 2. The detailed cost estimates are also attached.

Cost Curve and Conclusions

Cost curves were developed to demonstrate the sensitivity of project cost to increasing cleanup goal concentrations. The cost curve for SEAD 4 is presented as Figure 2.

The cost curve shows that the most significant cost increase or the breakout point of the cost curve occurs in changing from the risk-based cleanup goals to the TAGMs.

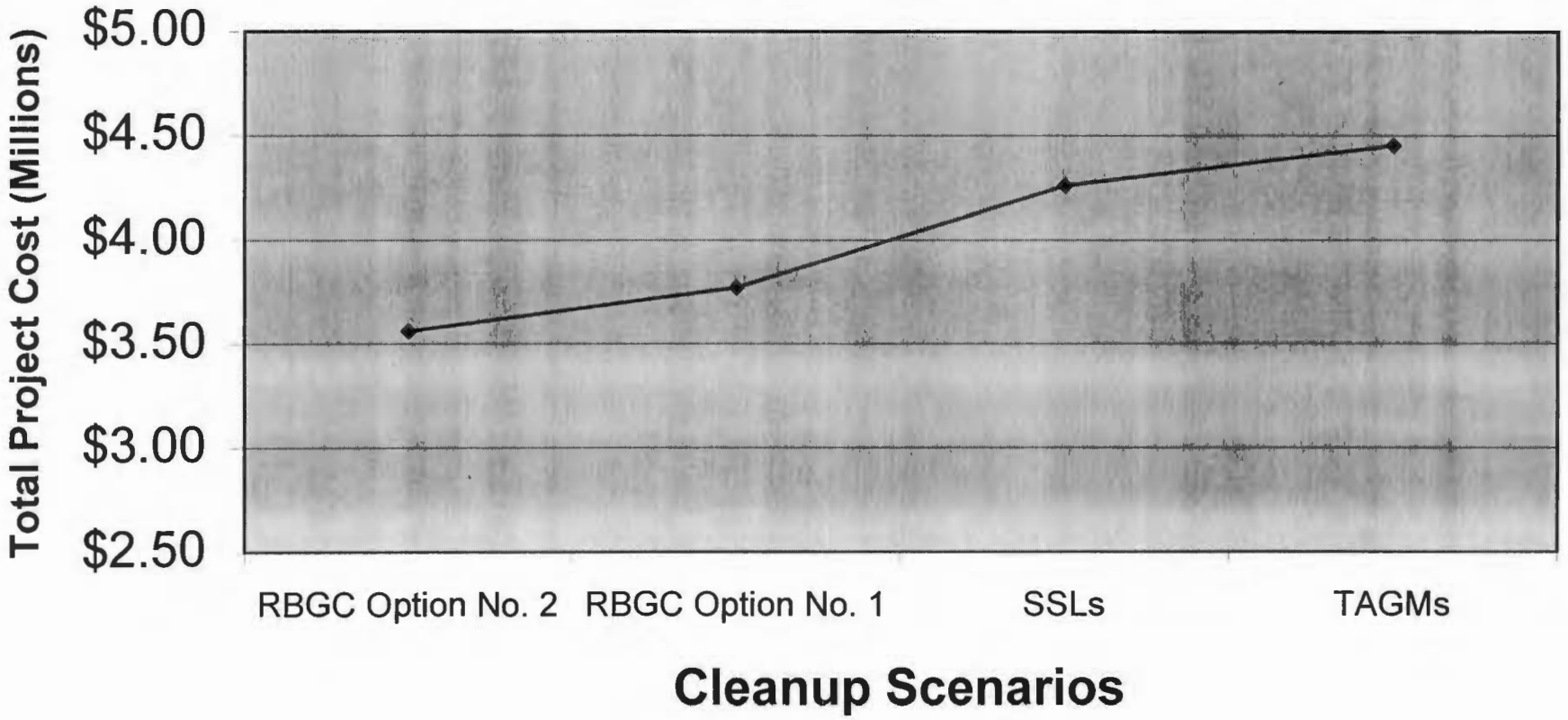
Please contact me at 781-401-2229 if you have any questions.

Table 1
Summary of Remediation Cost for SEAD 59 Alternatives
Seneca Army Depot Activity

Tasks	Cleanup Goals			
	Proposed Risk-based Cleanup Goals Option No. 2	Proposed Risk-based Cleanup Goals Option No. 1	EPA Soil Screening Levels	New York State TAGMs
Construction (1)				
Mobilization	$5,288	$5,288	$5,288	$5,288
Sampling and Analysis	$436,732	$436,732	$436,732	$436,732
Site Work	$307,744	$307,744	$307,744	$307,744
Wastewater	$41,537	$41,537	$41,537	$41,537
Excavation and Backfilling	$1,280,922	$1,321,448	$1,321,448	$1,346,420
Disposal	$834,537	$1,000,019	$1,495,811	$1,661,120
Demobilization	$17,060	$17,060	$17,060	$17,060
Subtotal Construction Cost	$2,923,820	$3,129,828	$3,625,620	$3,815,901
Design				
Remedial Design	$423,052	$423,052	$423,052	$423,052
Operations and Maintenance (2)				
Post-Closure Monitoring (5 years)	$215,150	$215,150	$215,150	$215,150
Total Project Cost	**$3,562,022**	**$3,768,030**	**$4,263,822**	**$4,454,103**

Notes:
(1) Construction costs include all construction costs necessary to complete remediation.
(2) Operation and maintenance is the present worth value for the five years at a rate of return of 7%.

Figure 1
SEAD 59
Comparison of Remediation Costs with Different Cleanup Goals



SEAD-4
OFF-SITE DISPOSAL
(SOIL > Average Background
Concentrations)

Designed By: Parsons ES
Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 10/10/01
Effective Date of Pricing: 10/03/96
Est Construction Time: 90 Days

Sales Tax: 7.0%

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The following is a summary of the activities that are presently included in Alternative 2.

Off-Site Disposal: Excavate/Stabilize/Off-site Disposal
- Mobilize, site prep, clear/grub, erosion control, access roads, and survey
- Remove material/debris from abandoned buildings at SEAD-4
- Excavate sediment in the lagoon with chromium, copper, and zinc > NYSDEC sediment values
- Excavate soils with chromium and lead > NYSDEC Fish and Wildlife Values
- Stockpile and perform TCLP testing
- Perform cleanup verification testing
- Transport soil, sediment, and debris failing TCLP criteria to stabilization area (off-site)
- Stabilize soil, sediment, and debris exceeding TCLP criteria (off-site)
- Transport and dispose soil, sediment, and material in an off-site landfill
- Backfill ditches with 6-inch topsoil and hydroseed
- Backfill remainder of excavated area with common fill & topsoil and hydroseed
- Demobilize
- Long-term monitoring

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

The following list are the areas where there is the biggest potential for changes in cost due to uncertainties:

1. The volume of excavation and disposal could vary based on the results of the cleanup verification sampling.

2. The volume of material requiring treatment prior to disposal could vary depending on the TCLP test results.

3. The duration and effort to remediate SEAD-4 could vary depending on actual condition of building.

Contractor costs are calculated as a percentage of running total as
- 5 % for field office support
- 15 % for home office support
- 10 % for profit
- 4 %for bond

Owner's cost are calculated as a percentage of running total as
- 2 % for design contingency
- 3 % for escalation
- 25 % for construction contingency
- 3.5 % for other costs
- 8 % for construction management

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.5%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total, use	3.5%

33.01. Mobilization	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33. Remedial Action									
33.01. Mobilization									
USR AA Mobilization	1.00	EA	0	793	2,500	535	0	3,828	3827.72
33.02. Sampling, & Testing									
33.02.06. Sediment									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	4,600	4,600	230.00
AFH AA For Disposal: TCLP-Pest/PCBs (SW-846 Methods 1311 & 8080),	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA Confirmatory: NYSDEC CLP-Pest/PCBs , soil (Severn Trent Lab, 9/99) (Assume 1 sample every 100 lf + 20% QC	84.00	EA	0	0	0	0	14,700	14,700	175.00
USR AA Confirmatory: NYSDEC CLP TAL Inorganics, soil (Severn Trent Lab, 9/99) (Assume 1 test/100 LF + 20% for QC)	84.00	EA	0	0	0	0	13,020	13,020	155.00
33.02.11. Soil									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	462.00	EA	0	0	0	0	55,440	55,440	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	462.00	EA	0	0	0	0	106,260	106,260	230.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	462.00	EA	0	0	0	0	55,440	55,440	120.00

		33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR	AA	Confirmatory: NYSDEC CLP TAL Inorganics, soil (Severn Trent Lab, 9/99) (Assume 1 test every 100 lf + 20% QC)	410.00	EA	0	0	0	0	63,550	63,550	155.00
		33.03. Site Work									
		33.03.02. Clearing and Grubbing									
MIL	AA	Remove and dispose existing chain link fence: Site dml, chain link fence, remove & salvage for reuse	1000.00	LF	52	1,300	0	0	0	1,300	1.30
AF	AA	Clearing, brush w/dozer & brush rake, light brush	40.00	ACR	640	17,306	25,156	0	0	42,461	1061.54
		33.03.06. Roadways									
USR	AA	Grade 20ft wide roadway	3000.00	LF	0	1,800	4,260	0	0	6,060	2.02
USR	AA	Roadway stone - 3" deep esl @ 25% of roadway	3000.00	LF	0	1,560	2,070	17,334	0	20,964	6.99
		33.03.08. Survey Remediation Area Survey remediation area									
USR	AA	Survey remediation area	20.00	DAY	0	30,000	5,000	5,350	0	40,350	2017.50
		33.03.11. Erosion control									
B MIL	AA	Silt Fence: Installation and materials high, polypropylene	15000	LF	3,150	75,000	7,500	24,075	0	106,575	7.11
B HTW	AA	Hay bales - stalked	15000	LF	5	2,550	0	16,050	0	18,600	1.24
B MIL	AA	Maintain silt fence and remove	15000	LF	101	2,550	0	16,050	0	18,600	1.24
		33.06. Remedial Design									
B HTW	AA	Remedial Design Workplan	1.00	EA	0	27,600	0	2,568	0	30,168	30168.00
B HTW	AA	Preliminary Design Report	1.00	EA	0	46,000	0	4,280	0	50,280	50280.00
B HTW	AA	Pre-final/Final Design Report, Including O&M Plan, S&A Plan, QA Plan, Contingency Plan, Waste	1.00	EA	0	118,000	0	7,490	0	125,490	125490.00
B HTW	AA	Remedial Action Workplan, including QA/QC Plan, H&S Plan	1.00	EA	0	47,500	0	2,675	0	50,175	50175.00
B HTW	AA	Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.00
		33.07. Building Remediation									
MIL	AA	Clean up hazardous material within building: Cleanup, floor area, final	47.00	CSF	8	190	15	13	0	218	4.63
HTW		HW packaging, overpacks, 18"dia x 34"H, 16ga stl drum, 55gal, DOT 17C	80.00	EA	0	0	0	6,330	0	6,330	79.13

	33.07. Building Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR AA	Transportation of drums by dedicated van (Price quoted by Waste Management, Inc. 5/99. Includes 7% NY tax. Does not include overpack.)	1.00	EA	0	0	0	0	546	546	545.70
USR AA	Disposal of drums (Price quoted by Waste Management Inc., 5/99. Includes 7% sales tax. Does NOT include transportation. Price quoted under assumption that drums contain oily liquid of low viscosity containing PAHs, metals (and does not contain PCBs).)	80.00	DR	0	0	0	0	10,700	10,700	133.75
USR AA	Extra fees for overpack use	80.00	EA	0	0	0	0	3,200	3,200	40.00
HTW AA	Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	20.00	TON	0	0	0	0	2,340	2,340	117.00
USR AA	Water treatment	1000.00	GAL	0	0	0	0	1,000	1,000	1.00
	33.09. Sediment Remediation									
	33.09.04. Sitework									
L MIL AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	2249.00	CY	0	0	0	0	44,980	44,980	20.00
USR AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	75000	SF	0	0	0	6,420	0	6,420	0.09
MIL AA	Loam or topsoil, furnish & place, imported, 6" deep	2076.00	CY	183	5,543	2,886	40,495	0	48,923	23.57
	33.09.09. Disposal									
	Transportation of sediment to hazardous waste landfill									
HTW AA	Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	2595.00	TON	0	0	0	0	303,615	303,615	117.00
	33.10. Soil Remediation									
	33.10.02. Sitework - Surface Soils									
	All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Surface Soils category.									
L MIL AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	25952	CY	0	0	0	0	519,040	519,040	20.00

33. Remedial Action

		33.10. Soil Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR	AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	86505	SF	0	0	0	7,405	0	7,405	0.09
MIL	AA	Loam or topsoil, furnish & place, imported, 6" deep	12976	CY	1,144	34,646	18,037	253,111	0	305,794	23.57
USR	AA	Common fill (6") - Material for Backfill, includes cost material (bank sand) and delivery (DeWitt 1999)	15311	TON	0	0	0	71,265	0	71,265	4.65
AF	AA	Fill, spread borrow w/dozer	12976	CY	156	4,671	8,434	0	0	13,106	1.01
AF	AA	Compaction, steel wheel tandem roller, 5 ton	12976	CY	92	2,725	2,336	0	0	5,061	0.39
RSM	AA	Seeding, athletic field mix, 8#/MSFpush spreader	490.00	MSF	490	12,387	0	21,811	0	34,198	69.79
		33.10.04. Sitework - Subsurface Soils									
L MIL	AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	22667	CY	0	0	0	0	453,340	453,340	20.00
USR	AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	75556	SF	0	0	0	6,468	0	6,468	0.09
B MIL	AA	Common fill (6") - Material for Backfill, includes cost of material (bank sand) and delivery (DeWitt 1999)	26747	TON	0	0	0	124,494	0	124,494	4.65
AF	AA	Fill, spread borrow w/dozer	20987	CY	252	7,555	13,642	0	0	21,197	1.01
AF	AA	Compaction, steel wheel tandem roller, 5 ton	20987	CY	149	4,407	3,778	0	0	8,185	0.39
		33.10.05. Sitework - Ditch Soils All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Surface Soils category.									
L MIL	AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	9109.00	CY	0	0	0	0	182,180	182,180	20.00
USR	AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	30363	SF	0	0	0	2,599	0	2,599	0.09
MIL	AA	Loam or topsoil, furnish & place, imported, 6" deep	4555.00	CY	402	12,162	6,331	88,850	0	107,344	23.57
USR	AA	Common fill (6") - Material for Backfill, includes cost material (bank sand) and delivery (DeWitt 1999)	5374.00	TON	0	0	0	25,013	0	25,013	4.65
AF	AA	Fill, spread borrow w/dozer	4555.00	CY	55	1,640	2,961	0	0	4,601	1.01
AF	AA	Compaction, steel wheel tandem roller, 5 ton	4555.00	CY	32	957	820	0	0	1,776	0.39
RSM	AA	Seeding, athletic field mix, 8#/MSFpush spreader	172.00	MSF	172	4,348	0	7,656	0	12,004	69.79

33.10. Soil Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33.10.06. Disposal Transportation of soil to hazardous waste landfill. Assuming that 25% of soil is hazardous.									
HTW AA Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	16010	TON	0	0	0	0	1,873,170	1,873,170	117.00
HTW AA Transport and Dispose nonhaz waste, bulk	48029	TON	0	0	0	0	1,512,914	1,512,914	31.50
33.26. Demobilization									
TOTAL Decontaminate Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821.20
TOTAL Demobilization	1.00	EA	0	528	2,500	500	0	3,528	3528.48
TOTAL SEAD-4			7,081	513,039	113,224	763,477	5,227,234	6,616,974	

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33 Remedial Action										
33.01 Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
TOTAL Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
33.02 Sampling, & Testing										
33.02.06 Sediment	1.00	EA	54,590	1,090	1,670	14,340	2,510	5,940	80,140	80138.57
33.02.11 Soil	1.00	EA	387,740	7,750	11,860	101,840	17,820	42,160	569,180	569182.61
TOTAL Sampling, & Testi	1.00	EA	442,330	8,850	13,540	116,180	20,330	48,100	649,320	649321.18
33.03 Site Work										
33.03.02 Clearing and Grub	3.00	ACR	60,450	1,210	1,850	15,880	2,780	6,570	88,740	29579.81
33.03.06 Roadways	1.00	ACR	37,330	750	1,140	9,800	1,720	4,060	54,800	54799.21
33.03.08 Survey Remediatio	1.00	ACR	55,740	1,110	1,710	14,640	2,560	6,060	81,820	81821.65
33.03.11 Erosion control	1.00	LF	198,610	3,970	6,080	52,160	9,130	21,600	291,550	291546.65
TOTAL Site Work	1.00	EA	352,130	7,040	10,780	92,490	16,190	38,290	516,910	516906.93
33.06 Remedial Design	1.00	EA	423,050	0	12,690	0	15,250	36,080	487,070	487073.89
33.07 Building Remediation	1.00	EA	31,200	620	950	8,190	1,430	3,390	45,800	45799.21
33.09 Sediment Remediation										
33.09.04 Sitework	1.00	EA	138,580	2,770	4,240	36,400	6,370	15,070	203,440	203435.23
33.09.09 Disposal	1.00	EA	419,410	8,390	12,830	110,160	19,280	45,610	615,670	615669.87
TOTAL Sediment Remediat	1.00	EA	557,990	11,160	17,070	146,560	25,650	60,670	819,110	819105.10
33.10 Soil Remediation										
33.10.02 Sitework - Surfac	1.00	EA	1,320,420	26,410	40,400	346,810	60,690	143,580	1,938,310	1938307.31
33.10.04 Sitework - Subsur	1.00	EA	847,730	16,950	25,940	222,660	38,960	92,180	1,244,430	1244425.75
33.10.05 Sitework - Ditch	1.00	EA	463,480	9,270	14,180	121,730	21,300	50,400	680,360	680361.02
33.10.06 Disposal	1.00	EA	4,677,470	93,550	143,130	1,228,540	214,990	508,610	6,866,290	6866293.16
TOTAL Soil Remediation	1.00	EA	7,309,090	146,180	223,660	1,919,730	335,950	794,770	10,729,390	10729387.24
33.26 Demobilization										
33.26.04 Decontaminate Equ	1.00	EA	12,190	240	370	3,200	560	1,330	17,890	17887.61
33.26.06 Demobilization	1.00	EA	4,870	100	150	1,280	220	530	7,160	7155.04

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
TOTAL Demobilization	1.00	EA	17,060	340	520	4,480	780	1,860	25,040	25042.66
TOTAL Remedial Action	1.00	EA	9,138,140	174,300	279,370	2,289,020	415,830	983,730	13,280,400	13280398.04

R2032: 330206	STL08	Confirmatory	Detail item has zero quantity - no costs reported
R2032: 330211	STL08	Confirmatory	Detail item has zero quantity - no costs reported
R2032: 330904	02932 0010	Seeding, ath	Detail item has zero quantity - no costs reported

* * * END OF ERROR REPORT * * *

SUMMARY REPORTS SUMMARY PAGE

DETAILED ESTIMATE DETAIL PAGE

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

SEAD-4
OFF-SITE DISPOSAL
(SOIL > TAGMs)

Designed By: Parsons ES
Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 10/10/01
Effective Date of Pricing: 10/03/96
Est Construction Time: 90 Days

Sales Tax: 7.0%

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The following is a summary of the activities that are presently included in Alternative 3.

Off-Site Disposal: Excavate/Stabilize/Off-site Disposal
- Mobilize, site prep, clear/grub, erosion control, access roads, and survey
- Remove material/debris from abandoned buildings at SEAD-4
- Excavate sediment with metals and PCBs > NYSDEC sediment values
- Excavate soils with concentrations > background and TAGMs
- Stockpile and perform TCLP testing
- Perform cleanup verification testing
- Transport soil, sediment, and debris failing TCLP criteria to stabilization area (off-site)
- Stabilize soil, sediment, and debris exceeding TCLP criteria (off-site)
- Transport and dispose soil, sediment, and debris in an off-site landfill
- Backfill drainage swales with 6-inch topsoil and hydroseed
- Backfill remainder of excavated area with common fill & topsoil and hydroseed
- Demobilize
- Long-term monitoring

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

The following list are the areas where there is the biggest potential for changes in cost due to uncertainties:

1. The volume of excavation and disposal could vary based on the results of the cleanup verification sampling.

2. The volume of material requiring treatment prior to disposal could vary depending on the TCLP test results.

3. The duration and effort to remediate SEAD-4 could vary depending on actual condition of building.

Contractor costs are calculated as a percentage of running total as
- 5 % for field office support
- 15 % for home office support
- 10 % for profit
- 4 %for bond

Owner's cost are calculated as a percentage of running total as
- 2 % for design contingency
- 3 % for escalation
- 25 % for construction contingency
- 3.5 % for other costs
- 8 % for construction management

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.5%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total, use	3.5%

33.01. Mobilization	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33. Remedial Action									
33.01. Mobilization									
USR AA Mobilization	1.00	EA	0	793	2,500	535	0	3,828	3827.72
33.02. Sampling, & Testing									
33.02.06. Sediment									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	4,600	4,600	230.00
AFH AA For Disposal: TCLP-Pest/PCBs (SW-846 Methods 1311 & 8080),	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA Confirmatory: NYSDEC CLP-Pest/PCBs , soil (Severn Trent Lab, 9/99) (Assume 1 sample every 100 lf + 20% QC	84.00	EA	0	0	0	0	14,700	14,700	175.00
USR AA Confirmatory: NYSDEC CLP TAL Inorganics, soil (Severn Trent Lab, 9/99) (Assume 1 test/100 LF + 20% QC)	84.00	EA	0	0	0	0	13,020	13,020	155.00
33.02.11. Soil									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	195.00	EA	0	0	0	0	23,400	23,400	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	195.00	EA	0	0	0	0	44,850	44,850	230.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	195.00	EA	0	0	0	0	23,400	23,400	120.00

		33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR	AA	Confirmatory: NYSDEC CLP TAL Inorganics, soil (Severn Trent Lab, 9/99) (Assume 1 test / 100 lf + 20% QC)	84.00	EA	0	0	0	0	13,020	13,020	155.00
		33.03. Site Work									
		33.03.02. Clearing and Grubbing									
MIL	AA	Remove and dispose existing chain link fence: Site dml, chain link fence, remove & salvage for reuse	1000.00	LF	52	1,300	0	0	0	1,300	1.30
AF	AA	Clearing, brush w/dozer & brush rake, light brush	20.00	ACR	320	8,653	12,578	0	0	21,231	1061.54
		33.03.06. Roadways									
USR	AA	Grade 20ft wide roadway	3000.00	LF	0	1,800	4,260	0	0	6,060	2.02
USR	AA	Roadway stone - 3" deep esl @ 25% of roadway	3000.00	LF	0	1,560	2,070	17,334	0	20,964	6.99
		33.03.08. Survey Remediation Area									
		Survey remediation area									
USR	AA	Survey remediation area	10.00	DAY	0	15,000	2,500	2,675	0	20,175	2017.50
		33.03.11. Erosion control									
B MIL	AA	Silt Fence: Installation and materials high, polypropylene	5500.00	LF	1,155	27,500	2,750	8,828	0	39,078	7.11
B HTW	AA	Hay bales - stalked	5500.00	LF	2	935	0	5,885	0	6,820	1.24
B MIL	AA	Maintain silt fence and remove	5500.00	LF	37	935	0	5,885	0	6,820	1.24
		33.04. Remedial Design									
B HTW	AA	Remedial Design Workplan	1.00	EA	0	27,600	0	2,568	0	30,168	30168.00
B HTW	AA	Preliminary Design Report	1.00	EA	0	46,000	0	4,280	0	50,280	50280.00
B HTW	AA	Pre-final/Final Design Report, Including O&M Plan, S&A Plan, QA Plan, Contingency Plan, Waste	1.00	EA	0	118,000	0	7,490	0	125,490	125490.00
B HTW	AA	Remedial Action Workplan, including QA/QC Plan, H&S Plan	1.00	EA	0	47,500	0	2,675	0	50,175	50175.00
B HTW	AA	Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.00
		33.07. Building Remediation									
MIL	AA	Clean up hazardous material within building: Cleanup, floor area, final	47.00	CSF	8	190	15	13	0	218	4.63
HTW		HW packaging, overpacks, 18"dia x 34"H, 16ga stl drum, 55gal, DOT 17C	80.00	EA	0	0	0	6,330	0	6,330	79.13

33. Remedial Action

	33.07. Building Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR AA	Transportation of drums by dedicated van (Price quoted by Waste Management, Inc. 5/99. Includes 7% NY tax. Does not include overpack.)	1.00	EA	0	0	0	0	546	546	545.70
USR AA	Disposal of drums (Price quoted by Waste Management Inc., 5/99. Includes 7% sales tax. Does NOT include transportation. Price quoted under assumption that drums contain oily liquid of low viscosity containing PAHs, metals (and does not contain PCBs).)	80.00	DR	0	0	0	0	10,700	10,700	133.75
USR AA	Extra fees for overpack use	80.00	EA	0	0	0	0	3,200	3,200	40.00
HTW AA	Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	20.00	TON	0	0	0	0	2,340	2,340	117.00
USR AA	Water treatment	1000.00	GAL	0	0	0	0	1,000	1,000	1.00
	33.09. Sediment Remediation									
	33.09.04. Sitework									
L MIL AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	2249.00	CY	0	0	0	0	44,980	44,980	20.00
USR AA	Plastic sheeting for ground and cover: 6mil polyethylene liner (1000sf / roll; 1 roll = $75) (Assume 1 pile or 150cy occupies 5000sf)	75000	SF	0	0	0	6,420	0	6,420	0.09
MIL AA	Loam or topsoil, furnish & place, imported, 6" deep	2076.00	CY	183	5,543	2,886	40,495	0	48,923	23.57
	33.09.09. Disposal									
	Transportation of sediment to hazardous waste landfill									
HTW AA	Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	2595.00	TON	0	0	0	0	303,615	303,615	117.00

33.10. Soil Remediation			QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33.10. Soil Remediation											
33.10.02. Sitework - Surface Soils All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Surface Soils category.											
L	MIL	AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	13799	CY	0	0	0	0	275,980	275,980	20.00
	USR	AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	460000	SF	0	0	0	39,376	0	39,376	0.09
	MIL	AA	Loam or topsoil, furnish & place, imported, 6" deep	6369.00	CY	562	17,005	8,853	124,234	0	150,092	23.57
	USR	AA	Common fill (6") - Material for Backfill, includes cost of material (bank sand) and delivery (DeWitt 1999)	7515.00	TON	0	0	0	34,979	0	34,979	4.65
	AF	AA	Fill, spread borrow w/dozer	6369.00	CY	76	2,293	4,140	0	0	6,433	1.01
	AF	AA	Compaction, steel wheel tandem roller, 5 ton	6369.00	CY	45	1,337	1,146	0	0	2,484	0.39
	RSM	AA	Seeding, athletic field mix, 8#/MSFpush spreader	260.00	MSF	260	6,573	0	11,573	0	18,146	69.79
33.10.04. Sitework - Subsurface Soils											
L	MIL	AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	4637.00	CY	0	0	0	0	92,740	92,740	20.00
	USR	AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	155000	SF	0	0	0	13,268	0	13,268	0.09
B	MIL	AA	Common fill (6") - Material for Backfill, includes cost of material (bank sand) and delivery (DeWitt 1999)	5050.00	TON	0	0	0	23,505	0	23,505	4.65
	AF	AA	Fill, spread borrow w/dozer	4280.00	CY	51	1,541	2,782	0	0	4,323	1.01
	AF	AA	Compaction, steel wheel tandem roller, 5 ton	4280.00	CY	30	899	770	0	0	1,669	0.39
33.10.05. Sitework - Ditch Soils All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Surface Soils category.											
L	MIL	AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	5874.00	CY	0	0	0	0	117,480	117,480	20.00
	USR	AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	195000	SF	0	0	0	16,692	0	16,692	0.09
	MIL	AA	Loam or topsoil, furnish & place, imported, 6" deep	2711.00	CY	239	7,238	3,768	52,881	0	63,888	23.57

	33.10. Soil Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR AA	Common fill (6") - Material for Backfill, includes cost of material (bank sand) and delivery (DeWitt 1999)	3200.00	TON	0	0	0	14,894	0	14,894	4.65
AF AA	Fill, spread borrow w/dozer	2711.00	CY	33	976	1,762	0	0	2,738	1.01
AF AA	Compaction, steel wheel tandem roller, 5 ton	2711.00	CY	19	569	488	0	0	1,057	0.39
RSM AA	Seeding, athletic field mix, 8#/MSFpush spreader	110.00	MSF	110	2,781	0	4,896	0	7,677	69.79
	33.10.06. Disposal Transportation of soil to hazardous waste landfill Assuming that 25% of soil is haz. waste									
HTW AA	Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	7013.00	TON	0	0	0	0	820,521	820,521	117.00
HTW AA	Transport and Dispose nonhaz waste, bulk	21038	TON	0	0	0	0	662,697	662,697	31.50
	33.26. Demobilization									
TOTAL	Decontaminate Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821.20
TOTAL	Demobilization	1.00	EA	0	528	2,500	500	0	3,528	3528.48
TOTAL	SEAD-4			3,182	394,370	60,768	452,851	2,479,989	3,387,979	

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33 Remedial Action										
33.01 Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
TOTAL Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
33.02 Sampling, & Testing										
33.02.06 Sediment	1.00	EA	54,590	1,090	1,670	14,340	2,510	5,940	80,140	80138.57
33.02.11 Soil	1.00	EA	144,590	2,890	4,420	37,980	6,650	15,720	212,250	212249.61
TOTAL Sampling, & Testi	1.00	EA	199,180	3,980	6,090	52,310	9,160	21,660	292,390	292388.19
33.03 Site Work										
33.03.02 Clearing and Grub	3.00	ACR	31,120	620	950	8,170	1,430	3,380	45,690	15229.26
33.03.06 Roadways	1.00	ACR	37,330	750	1,140	9,800	1,720	4,060	54,800	54799.21
33.03.08 Survey Remediatio	1.00	ACR	27,870	560	850	7,320	1,280	3,030	40,910	40910.82
33.03.11 Erosion control	1.00	LF	72,820	1,460	2,230	19,130	3,350	7,920	106,900	106900.44
TOTAL Site Work	1.00	EA	169,150	3,380	5,180	44,430	7,770	18,390	248,300	248298.25
33.04 Remedial Design	1.00	EA	423,050	0	12,690	0	15,250	36,080	487,070	487073.89
33.07 Building Remediation	1.00	EA	31,200	620	950	8,190	1,430	3,390	45,800	45799.21
33.09 Sediment Remediation										
33.09.04 Sitework	1.00	EA	138,580	2,770	4,240	36,400	6,370	15,070	203,440	203435.23
33.09.09 Disposal	1.00	EA	419,410	8,390	12,830	110,160	19,280	45,610	615,670	615669.87
TOTAL Sediment Remediat	1.00	EA	557,990	11,160	17,070	146,560	25,650	60,670	819,110	819105.10
33.10 Soil Remediation										
33.10.02 Sitework - Surfac	1.00	EA	728,660	14,570	22,300	191,380	33,490	79,230	1,069,640	1069642.28
33.10.04 Sitework - Subsur	1.00	EA	187,180	3,740	5,730	49,160	8,600	20,350	274,780	274777.22
33.10.05 Sitework - Ditch	1.00	EA	310,020	6,200	9,490	81,430	14,250	33,710	455,090	455091.83
33.10.06 Disposal	1.00	EA	2,048,890	40,980	62,700	538,140	94,170	222,790	3,007,670	3007666.41
TOTAL Soil Remediation	1.00	EA	3,274,750	65,500	100,210	860,110	150,520	356,090	4,807,180	4807177.75
33.26 Demobilization										
33.26.04 Decontaminate Equ	1.00	EA	12,190	240	370	3,200	560	1,330	17,890	17887.61
33.26.06 Demobilization	1.00	EA	4,870	100	150	1,280	220	530	7,160	7155.04

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
TOTAL Demobilization	1.00	EA	17,060	340	520	4,480	780	1,860	25,040	25042.66
TOTAL Remedial Action	1.00	EA	4,677,670	85,090	142,880	1,117,480	210,810	498,710	6,732,650	6732646.88

R2032: 330206	STL08	Confirmatory	Detail item has zero quantity - no costs reported
R2032: 330211	STL08	Confirmatory	Detail item has zero quantity - no costs reported
R2032: 330904	02932 0010	Seeding, ath	Detail item has zero quantity - no costs reported

* * * END OF ERROR REPORT * * *

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

SEAD-4
OFF-SITE DISPOSAL
(SOIL > ecological cleanup
values with HQ=1)

Designed By: Parsons ES
Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 10/11/01
Effective Date of Pricing: 10/03/96
Est Construction Time: 90 Days

Sales Tax: 7.0%

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The following is a summary of the activities that are presently included in Alternative 2.

Off-Site Disposal: Excavate/Stabilize/Off-site Disposal
- Mobilize, site prep, clear/grub, erosion control, access roads, and survey
- Remove material/debris from abandoned buildings at SEAD-4
- Excavate sediment in the lagoon with chromium, copper, and zinc > NYSDEC sediment values
- Excavate soils with chromium and lead > eco values
- Stockpile and perform TCLP testing
- Perform cleanup verification testing
- Transport soil, sediment, and debris failing TCLP criteria to stabilization area (off-site)
- Stabilize soil, sediment, and debris exceeding TCLP criteria (off-site)
- Transport and dispose soil, sediment, and material in an off-site landfill
- Backfill drainage swales with 6-inch topsoil and hydroseed
- Backfill remainder of excavated area with common fill & topsoil and hydroseed
- Demobilize
- Long-term monitoring

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

The following list are the areas where there is the biggest potential for changes in cost due to uncertainties:

1. The volume of excavation and disposal could vary based on the results of the cleanup verification sampling.

2. The volume of material requiring treatment prior to disposal could vary depending on the TCLP test results.

3. The duration and effort to remediate SEAD-4 could vary depending on actual condition of building.

Contractor costs are calculated as a percentage of running total as
- 5 % for field office support
- 15 % for home office support
- 10 % for profit
- 4 %for bond

Owner's cost are calculated as a percentage of running total as
- 2 % for design contingency
- 3 % for escalation
- 25 % for construction contingency
- 3.5 % for other costs
- 8 % for construction management

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.5%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total, use	3.5%

33.01. Mobilization	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33. Remedial Action									
33.01. Mobilization									
USR AA Mobilization	1.00	EA	0	793	2,500	535	0	3,828	3827.72
33.02. Sampling, & Testing									
33.02.06. Sediment									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	4,600	4,600	230.00
AFH AA For Disposal: TCLP-Pest/PCBs (SW-846 Methods 1311 & 8080),	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA Confirmatory: NYSDEC CLP-Pest/PCBs , soil (Severn Trent Lab, 9/99) (Assume 1 sample every 100 lf + 20% QC	84.00	EA	0	0	0	0	14,700	14,700	175.00
USR AA Confirmatory: NYSDEC CLP TAL Inorganics, soil (Severn Trent Lab, 9/99) (Assume 1 test/100 LF + 20% for QC)	84.00	EA	0	0	0	0	13,020	13,020	155.00
33.02.11. Soil									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	52.00	EA	0	0	0	0	6,240	6,240	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	52.00	EA	0	0	0	0	11,960	11,960	230.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	52.00	EA	0	0	0	0	6,240	6,240	120.00

33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR AA Confirmatory: NYSDEC CLP TAL Inorganics, soil (Severn Trent Lab, 9/99) (Assume 1 test every 100 lf + 20% QC)	54.00	EA	0	0	0	0	8,370	8,370	155.00
33.03. Site Work									
33.03.02. Clearing and Grubbing									
MIL AA Remove and dispose existing chain link fence: Site dml, chain link fence, remove & salvage for reuse	1000.00	LF	52	1,300	0	0	0	1,300	1.30
AF AA Clearing, brush w/dozer & brush rake, light brush	17.00	ACR	272	7,355	10,691	0	0	18,046	1061.54
33.03.06. Roadways									
USR AA Grade 20ft wide roadway	3000.00	LF	0	1,800	4,260	0	0	6,060	2.02
USR AA Roadway stone - 3" deep esl @ 25% of roadway	3000.00	LF	0	1,560	2,070	17,334	0	20,964	6.99
33.03.08. Survey Remediation Area									
Survey remediation area									
USR AA Survey remediation area	8.00	DAY	0	12,000	2,000	2,140	0	16,140	2017.50
33.03.11. Erosion control									
B MIL AA Silt Fence: Installation and materials high, polypropylene	5000.00	LF	1,050	25,000	2,500	8,025	0	35,525	7.11
B HTW AA Hay bales - stalked	5000.00	LF	2	850	0	5,350	0	6,200	1.24
B MIL AA Maintain silt fence and remove	5000.00	LF	34	850	0	5,350	0	6,200	1.24
33.06. Remedial Design									
B HTW AA Remedial Design Workplan	1.00	EA	0	27,600	0	2,568	0	30,168	30168.00
B HTW AA Preliminary Design Report	1.00	EA	0	46,000	0	4,280	0	50,280	50280.00
B HTW AA Pre-final/Final Design Report, Including O&M Plan, S&A Plan, QA Plan, Contingency Plan, Waste	1.00	EA	0	118,000	0	7,490	0	125,490	125490.00
B HTW AA Remedial Action Workplan, including QA/QC Plan, H&S Plan	1.00	EA	0	47,500	0	2,675	0	50,175	50175.00
B HTW AA Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.00
33.07. Building Remediation									
MIL AA Clean up hazardous material within building: Cleanup, floor area, final	47.00	CSF	8	190	15	13	0	218	4.63
HTW HW packaging, overpacks, 18"dia x 34"H, 16ga stl drum, 55gal, DOT 17C	80.00	EA	0	0	0	6,330	0	6,330	79.13

	33.07. Building Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR AA	Transportation of drums by dedicated van (Price quoted by Waste Management, Inc. 5/99. Includes 7% NY tax. Does not include overpack.)	1.00	EA	0	0	0	0	546	546	545.70
USR AA	Disposal of drums (Price quoted by Waste Management Inc., 5/99. Includes 7% sales tax. Does NOT include transportation. Price quoted under assumption that drums contain oily liquid of low viscosity containing PAHs, metals (and does not contain PCBs).)	80.00	DR	0	0	0	0	10,700	10,700	133.75
USR AA	Extra fees for overpack use	80.00	EA	0	0	0	0	3,200	3,200	40.00
HTW AA	Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	20.00	TON	0	0	0	0	2,340	2,340	117.00
USR AA	Water treatment	1000.00	GAL	0	0	0	0	1,000	1,000	1.00
	33.09. Sediment Remediation									
	33.09.04. Sitework									
L MIL AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	2249.00	CY	0	0	0	0	44,980	44,980	20.00
USR AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	75000	SF	0	0	0	6,420	0	6,420	0.09
MIL AA	Loam or topsoil, furnish & place, imported, 6" deep	2076.00	CY	183	5,543	2,886	40,495	0	48,923	23.57
	33.09.09. Disposal									
	Transportation of sediment to hazardous waste landfill									
HTW AA	Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	2595.00	TON	0	0	0	0	303,615	303,615	117.00
	33.10. Soil Remediation									
	33.10.02. Sitework - Surface Soils									
	All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Surface Soils category.									
L MIL AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	3878.00	CY	0	0	0	0	77,560	77,560	20.00

		33.10. Soil Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
	USR AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	129270	SF	0	0	0	11,066	0	11,066	0.09
	MIL AA	Loam or topsoil, furnish & place, imported, 6" deep	1790.00	CY	158	4,779	2,488	34,916	0	42,183	23.57
	USR AA	Common fill (6") - Material for Backfill, includes cost material (bank sand) and delivery (DeWitt 1999)	2112.00	TON	0	0	0	9,830	0	9,830	4.65
	AF AA	Fill, spread borrow w/dozer	1790.00	CY	21	644	1,164	0	0	1,808	1.01
	AF AA	Compaction, steel wheel tandem roller, 5 ton	1790.00	CY	13	376	322	0	0	698	0.39
	RSM AA	Seeding, athletic field mix, 8#/MSFpush spreader	73.00	MSF	73	1,845	0	3,249	0	5,095	69.79
		33.10.04. Sitework - Subsurface Soils									
L	MIL AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	1549.00	CY	0	0	0	0	30,980	30,980	20.00
	USR AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	50000	SF	0	0	0	4,280	0	4,280	0.09
B	MIL AA	Common fill (6") - Material for Backfill, includes cost of material (bank sand) and delivery (DeWitt 1999)	1690.00	TON	0	0	0	7,866	0	7,866	4.65
	AF AA	Fill, spread borrow w/dozer	1430.00	CY	17	515	930	0	0	1,444	1.01
	AF AA	Compaction, steel wheel tandem roller, 5 ton	1430.00	CY	10	300	257	0	0	558	0.39
		33.10.05. Sitework - Ditch Soils All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Surface Soils category.									
L	MIL AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	1013.00	CY	0	0	0	0	20,260	20,260	20.00
	USR AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	35000	SF	0	0	0	2,996	0	2,996	0.09
	MIL AA	Loam or topsoil, furnish & place, imported, 6" deep	467.00	CY	41	1,247	649	9,109	0	11,005	23.57
	USR AA	Common fill (6") - Material for Backfill, includes cost material (bank sand) and delivery (DeWitt 1999)	551.00	TON	0	0	0	2,565	0	2,565	4.65
	AF AA	Fill, spread borrow w/dozer	467.00	CY	6	168	304	0	0	472	1.01
	AF AA	Compaction, steel wheel tandem roller, 5 ton	467.00	CY	3	98	84	0	0	182	0.39
	RSM AA	Seeding, athletic field mix, 8#/MSFpush spreader	19.00	MSF	19	480	0	846	0	1,326	69.79

33. Remedial Action

33.10. Soil Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33.10.06. Disposal Transportation of soil to hazardous waste landfill. Assuming that 25% of soil is hazardous.									
HTW AA Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	1858.00	TON	0	0	0	0	217,386	217,386	117.00
HTW AA Transport and Dispose nonhaz waste, bulk	5573.00	TON	0	0	0	0	175,550	175,550	31.50
33.26. Demobilization									
TOTAL Decontaminate Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821.20
TOTAL Demobilization	1.00	EA	0	528	2,500	500	0	3,528	3528.48
TOTAL SEAD-4			1,961	356,644	40,619	200,868	960,446	1,558,576	

	QUANTY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33 Remedial Action									
33.01 Mobilization	1.00 EA	5,290	110	160	1,390	240	570	7,760	7761.84
TOTAL Mobilization	1.00 EA	5,290	110	160	1,390	240	570	7,760	7761.84
33.02 Sampling, & Testing									
33.02.06 Sediment	1.00 EA	54,590	1,090	1,670	14,340	2,510	5,940	80,140	80138.57
33.02.11 Soil	1.00 EA	45,320	910	1,390	11,900	2,080	4,930	66,530	66532.05
TOTAL Sampling, & Testi	1.00 EA	99,920	2,000	3,060	26,240	4,590	10,860	146,670	146670.63
33.03 Site Work									
33.03.02 Clearing and Grub	3.00 ACR	26,720	530	820	7,020	1,230	2,910	39,230	13076.68
33.03.06 Roadways	1.00 ACR	37,330	750	1,140	9,800	1,720	4,060	54,800	54799.21
33.03.08 Survey Remediatio	1.00 ACR	22,300	450	680	5,860	1,020	2,420	32,730	32728.66
33.03.11 Erosion control	1.00 LF	66,200	1,320	2,030	17,390	3,040	7,200	97,180	97182.22
TOTAL Site Work	1.00 EA	152,550	3,050	4,670	40,070	7,010	16,590	223,940	223940.12
33.06 Remedial Design	1.00 EA	423,050	0	12,690	0	15,250	36,080	487,070	487073.89
33.07 Building Remediation	1.00 EA	31,200	620	950	8,190	1,430	3,390	45,800	45799.21
33.09 Sediment Remediation									
33.09.04 Sitework	1.00 EA	138,580	2,770	4,240	36,400	6,370	15,070	203,440	203435.23
33.09.09 Disposal	1.00 EA	419,410	8,390	12,830	110,160	19,280	45,610	615,670	615669.87
TOTAL Sediment Remediat	1.00 EA	557,990	11,160	17,070	146,560	25,650	60,670	819,110	819105.10
33.10 Soil Remediation									
33.10.02 Sitework - Surfac	1.00 EA	204,780	4,100	6,270	53,780	9,410	22,270	300,600	300600.67
33.10.04 Sitework - Subsur	1.00 EA	62,340	1,250	1,910	16,370	2,870	6,780	91,510	91510.68
33.10.05 Sitework - Ditch	1.00 EA	53,610	1,070	1,640	14,080	2,460	5,830	78,690	78690.42
33.10.06 Disposal	1.00 EA	542,790	10,860	16,610	142,560	24,950	59,020	796,790	796793.80
TOTAL Soil Remediation	1.00 EA	863,510	17,270	26,420	226,800	39,690	93,900	1,267,600	1267595.56
33.26 Demobilization									
33.26.04 Decontaminate Equ	1.00 EA	12,190	240	370	3,200	560	1,330	17,890	17887.61
33.26.06 Demobilization	1.00 EA	4,870	100	150	1,280	220	530	7,160	7155.04

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
TOTAL Demobilization	1.00	EA	17,060	340	520	4,480	780	1,860	25,040	25042.66
TOTAL Remedial Action	1.00	EA	2,150,570	34,550	65,550	453,730	94,650	223,930	3,022,990	3022989.00

R2032: 330206	STL08	Confirmatory	Detail item has zero quantity - no costs reported
R2032: 330211	STL08	Confirmatory	Detail item has zero quantity - no costs reported
R2032: 330904	02932 0010	Seeding, ath	Detail item has zero quantity - no costs reported

* * * END OF ERROR REPORT * * *

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

SEAD-4
OFF-SITE DISPOSAL
(SOIL > ecological cleanup
values with HQ=10)

Designed By: Parsons ES
Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 10/10/01
Effective Date of Pricing: 10/03/96
Est Construction Time: 90 Days

Sales Tax: 7.0%

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The following is a summary of the activities that are presently included in Alternative 2.

Off-Site Disposal: Excavate/Stabilize/Off-site Disposal
- Mobilize, site prep, clear/grub, erosion control, access roads, and survey
- Remove material/debris from abandoned buildings at SEAD-4
- Excavate sediment in the lagoon with chromium, copper, and zinc > NYSDEC sediment values
- Excavate soils with chromium and lead > eco values
- Stockpile and perform TCLP testing
- Perform cleanup verification testing
- Transport soil, sediment, and debris failing TCLP criteria to stabilization area (off-site)
- Stabilize soil, sediment, and debris exceeding TCLP criteria (off-site)
- Transport and dispose soil, sediment, and material in an off-site landfill
- Backfill drainage swales with 6-inch topsoil and hydroseed
- Backfill remainder of excavated area with common fill & topsoil and hydroseed
- Demobilize
- Long-term monitoring

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

The following list are the areas where there is the biggest potential for changes in cost due to uncertainties:

1. The volume of excavation and disposal could vary based on the results of the cleanup verification sampling.

2. The volume of material requiring treatment prior to disposal could vary depending on the TCLP test results.

3. The duration and effort to remediate SEAD-4 could vary depending on actual condition of building.

Contractor costs are calculated as a percentage of running total as
- 5 % for field office support
- 15 % for home office support
- 10 % for profit
- 4 %for bond

Owner's cost are calculated as a percentage of running total as
- 2 % for design contingency
- 3 % for escalation
- 25 % for construction contingency
- 3.5 % for other costs
- 8 % for construction management

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.5%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total, use	3.5%

33.01. Mobilization	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33. Remedial Action									
33.01. Mobilization									
USR AA Mobilization	1.00	EA	0	793	2,500	535	0	3,828	3827.72
33.02. Sampling, & Testing									
33.02.06. Sediment									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	4,600	4,600	230.00
AFH AA For Disposal: TCLP-Pest/PCBs (SW-846 Methods 1311 & 8080),	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00	EA	0	0	0	0	2,400	2,400	120.00
AFH AA Confirmatory: NYSDEC CLP-Pest/PCBs , soil (Severn Trent Lab, 9/99) (Assume 1 sample every 100 lf + 20% QC	84.00	EA	0	0	0	0	14,700	14,700	175.00
USR AA Confirmatory: NYSDEC CLP TAL Inorganics, soil (Severn Trent Lab, 9/99) (Assume 1 test/100 LF + 20% for QC)	84.00	EA	0	0	0	0	13,020	13,020	155.00
33.02.11. Soil									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	15.00	EA	0	0	0	0	1,800	1,800	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	15.00	EA	0	0	0	0	3,450	3,450	230.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	15.00	EA	0	0	0	0	1,800	1,800	120.00

		33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR	AA	Confirmatory: NYSDEC CLP TAL Inorganics, soil (Severn Trent Lab, 9/99) (Assume 1 test every 100 lf + 20% QC)	11.00	EA	0	0	0	0	1,705	1,705	155.00
		33.03. Site Work									
		33.03.02. Clearing and Grubbing									
MIL	AA	Remove and dispose existing chain link fence: Site dml, chain link fence, remove & salvage for reuse	1000.00	LF	52	1,300	0	0	0	1,300	1.30
AF	AA	Clearing, brush w/dozer & brush rake, light brush	15.00	ACR	240	6,490	9,433	0	0	15,923	1061.54
		33.03.06. Roadways									
USR	AA	Grade 20ft wide roadway	3000.00	LF	0	1,800	4,260	0	0	6,060	2.02
USR	AA	Roadway stone - 3" deep esl @ 25% of roadway	3000.00	LF	0	1,560	2,070	17,334	0	20,964	6.99
		33.03.08. Survey Remediation Area Survey remediation area									
USR	AA	Survey remediation area	7.00	DAY	0	10,500	1,750	1,873	0	14,123	2017.50
		33.03.11. Erosion control									
B MIL	AA	Silt Fence: Installation and materials high, polypropylene	4000.00	LF	840	20,000	2,000	6,420	0	28,420	7.11
B HTW	AA	Hay bales - stalked	4000.00	LF	1	680	0	4,280	0	4,960	1.24
B MIL	AA	Maintain silt fence and remove	4000.00	LF	27	680	0	4,280	0	4,960	1.24
		33.06. Remedial Design									
B HTW	AA	Remedial Design Workplan	1.00	EA	0	27,600	0	2,568	0	30,168	30168.00
B HTW	AA	Preliminary Design Report	1.00	EA	0	46,000	0	4,280	0	50,280	50280.00
B HTW	AA	Pre-final/Final Design Report, Including O&M Plan, S&A Plan, QA Plan, Contingency Plan, Waste	1.00	EA	0	118,000	0	7,490	0	125,490	125490.00
B HTW	AA	Remedial Action Workplan, including QA/QC Plan, H&S Plan	1.00	EA	0	47,500	0	2,675	0	50,175	50175.00
B HTW	AA	Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.00
		33.07. Building Remediation									
MIL	AA	Clean up hazardous material within building: Cleanup, floor area, final	47.00	CSF	8	190	15	13	0	218	4.63
HTW		HW packaging, overpacks, 18"dia x 34"H, 16ga stl drum, 55gal, DOT 17C	80.00	EA	0	0	0	6,330	0	6,330	79.13

33.07. Building Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR AA Transportation of drums by dedicated van (Price quoted by Waste Management, Inc. 5/99. Includes 7% NY tax. Does not include overpack.)	1.00	EA	0	0	0	0	546	546	545.70
USR AA Disposal of drums (Price quoted by Waste Management Inc., 5/99. Includes 7% sales tax. Does NOT include transportation. Price quoted under assumption that drums contain oily liquid of low viscosity containing PAHs, metals (and does not contain PCBs).)	80.00	DR	0	0	0	0	10,700	10,700	133.75
USR AA Extra fees for overpack use	80.00	EA	0	0	0	0	3,200	3,200	40.00
HTW AA Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	20.00	TON	0	0	0	0	2,340	2,340	117.00
USR AA Water treatment	1000.00	GAL	0	0	0	0	1,000	1,000	1.00
33.09. Sediment Remediation									
33.09.04. Sitework									
L MIL AA Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	2249.00	CY	0	0	0	0	44,980	44,980	20.00
USR AA Plastic sheeting for ground an d cover: 6mil polyethylene liner	75000	SF	0	0	0	6,420	0	6,420	0.09
MIL AA Loam or topsoil, furnish & place, imported, 6" deep	2076.00	CY	183	5,543	2,886	40,495	0	48,923	23.57
33.09.09. Disposal									
Transportation of sediment to hazardous waste landfill									
HTW AA Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	2595.00	TON	0	0	0	0	303,615	303,615	117.00
33.10. Soil Remediation									
33.10.02. Sitework - Surface Soils									
All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Surface Soils category.									
L MIL AA Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	766.00	CY	0	0	0	0	15,320	15,320	20.00

33. Remedial Action

		33.10. Soil Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR	AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	25549	SF	0	0	0	2,187	0	2,187	0.09
MIL	AA	Loam or topsoil, furnish & place, imported, 6" deep	383.00	CY	34	1,023	532	7,471	0	9,026	23.57
USR	AA	Common fill (6") - Material for Backfill, includes cost material (bank sand) and delivery (DeWitt 1999)	452.00	TON	0	0	0	2,104	0	2,104	4.65
AF	AA	Fill, spread borrow w/dozer	384.00	CY	5	138	250	0	0	388	1.01
AF	AA	Compaction, steel wheel tandem roller, 5 ton	384.00	CY	3	81	69	0	0	150	0.39
RSM	AA	Seeding, athletic field mix, 8#/MSFpush spreader	17.00	MSF	17	430	0	757	0	1,186	69.79
		33.10.04. Sitework - Subsurface Soils									
L MIL	AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	289.00	CY	0	0	0	0	5,780	5,780	20.00
USR	AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	9629.00	SF	0	0	0	824	0	824	0.09
B MIL	AA	Common fill (6") - Material for Backfill, includes cost of material (bank sand) and delivery (DeWitt 1999)	341.00	TON	0	0	0	1,587	0	1,587	4.65
AF	AA	Fill, spread borrow w/dozer	289.00	CY	3	104	188	0	0	292	1.01
AF	AA	Compaction, steel wheel tandem roller, 5 ton	289.00	CY	2	61	52	0	0	113	0.39
		33.10.05. Sitework - Ditch Soils All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Surface Soils category.									
L MIL	AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	887.00	CY	0	0	0	0	17,740	17,740	20.00
USR	AA	Plastic sheeting for ground and cover: 6mil polyethylene liner	29553	SF	0	0	0	2,530	0	2,530	0.09
MIL	AA	Loam or topsoil, furnish & place, imported, 6" deep	443.00	CY	39	1,183	616	8,641	0	10,440	23.57
USR	AA	Common fill (6") - Material for Backfill, includes cost material (bank sand) and delivery (DeWitt 1999)	523.00	TON	0	0	0	2,434	0	2,434	4.65
AF	AA	Fill, spread borrow w/dozer	443.00	CY	5	159	288	0	0	447	1.01
AF	AA	Compaction, steel wheel tandem roller, 5 ton	443.00	CY	3	93	80	0	0	173	0.39
RSM	AA	Seeding, athletic field mix, 8#/MSFpush spreader	4.00	MSF	4	101	0	178	0	279	69.79

33.10. Soil Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33.10.06. Disposal Transportation of soil to hazardous waste landfill. Assuming that 25% of soil is hazardous.									
HTW AA Transport and Dispose haz waste, bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	560.00	TON	0	0	0	0	65,520	65,520	117.00
HTW AA Transport and Dispose nonhaz waste, bulk	1680.00	TON	0	0	0	0	52,920	52,920	31.50
33.26. Demobilization									
TOTAL Decontaminate Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821.20
TOTAL Demobilization	1.00	EA	0	528	2,500	500	0	3,528	3528.48
TOTAL SEAD-4			1,465	341,857	34,488	138,845	571,936	1,087,126	

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33 Remedial Action										
33.01 Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
TOTAL Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
33.02 Sampling, & Testing										
33.02.06 Sediment	1.00	EA	54,590	1,090	1,670	14,340	2,510	5,940	80,140	80138.57
33.02.11 Soil	1.00	EA	12,090	240	370	3,180	560	1,320	17,750	17753.37
TOTAL Sampling, & Testi	1.00	EA	66,690	1,330	2,040	17,520	3,070	7,250	97,890	97891.95
33.03 Site Work										
33.03.02 Clearing and Grub	3.00	ACR	23,790	480	730	6,250	1,090	2,590	34,920	11641.62
33.03.06 Roadways	1.00	ACR	37,330	750	1,140	9,800	1,720	4,060	54,800	54799.21
33.03.08 Survey Remediatio	1.00	ACR	19,510	390	600	5,120	900	2,120	28,640	28637.58
33.03.11 Erosion control	1.00	LF	52,960	1,060	1,620	13,910	2,430	5,760	77,750	77745.77
TOTAL Site Work	1.00	EA	133,590	2,670	4,090	35,090	6,140	14,530	196,110	196107.43
33.06 Remedial Design	1.00	EA	423,050	0	12,690	0	15,250	36,080	487,070	487073.89
33.07 Building Remediation	1.00	EA	31,200	620	950	8,190	1,430	3,390	45,800	45799.21
33.09 Sediment Remediation										
33.09.04 Sitework	1.00	EA	138,580	2,770	4,240	36,400	6,370	15,070	203,440	203435.23
33.09.09 Disposal	1.00	EA	419,410	8,390	12,830	110,160	19,280	45,610	615,670	615669.87
TOTAL Sediment Remediat	1.00	EA	557,990	11,160	17,070	146,560	25,650	60,670	819,110	819105.10
33.10 Soil Remediation										
33.10.02 Sitework - Surfac	1.00	EA	41,940	840	1,280	11,020	1,930	4,560	61,570	61565.38
33.10.04 Sitework - Subsur	1.00	EA	11,870	240	360	3,120	550	1,290	17,430	17431.01
33.10.05 Sitework - Ditch	1.00	EA	47,030	940	1,440	12,350	2,160	5,110	69,030	69032.71
33.10.06 Disposal	1.00	EA	163,610	3,270	5,010	42,970	7,520	17,790	240,170	240172.39
TOTAL Soil Remediation	1.00	EA	264,450	5,290	8,090	69,460	12,160	28,760	388,200	388201.49
33.26 Demobilization										
33.26.04 Decontaminate Equ	1.00	EA	12,190	240	370	3,200	560	1,330	17,890	17887.61
33.26.06 Demobilization	1.00	EA	4,870	100	150	1,280	220	530	7,160	7155.04

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
TOTAL Demobilization	1.00	EA	17,060	340	520	4,480	780	1,860	25,040	25042.66
TOTAL Remedial Action	1.00	EA	1,499,320	21,530	45,630	282,680	64,720	153,110	2,066,980	2066983.56

R2032: 330206	STL08	Confirmatory	Detail item has zero quantity - no costs reported
R2032: 330211	STL08	Confirmatory	Detail item has zero quantity - no costs reported
R2032: 330904	02932 0010	Seeding, ath	Detail item has zero quantity - no costs reported

* * * END OF ERROR REPORT * * *

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

ANNUAL MONITORING COSTS
FOR SEMI-ANNUAL
GROUNDWATER MONITORING
SEAD-4

Designed By: Parsons ES
Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 04/03/01
Effective Date of Pricing: 10/03/96

Sales Tax: 7.0%

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The scope of work for the contractors is summarized below.

- Sample 6 wells (total of 8 samples including 1 dup and 1 qa sample)for VOCs, SVOCs, and metals analyses.
- Assumptions: 2-person crew, 3 wells sampled per day, 1 day for set-up, 1 day for de-mob, no air travel; 2 events per year, and metals, VOCs, and SVOCs laboratory analyses.

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

The following list the areas where there is the biggest potential for changes in cost due to uncertainties:

· Time necessary to complete sampling may increase depending on the flow of water.
· This estimate does not include the potential for additional wells or the repair of existing wells.

Contractor costs are calculated as a percentage of running total as
0.5 % for field office support
15.0 % for home office support
10.0 % for profit
0.0 % for bond

Owner's cost are calculated as a percentage of running total as
0.0 % for design contingency
3.0 % for escalation
0.0 % for construction contingency
3.0 % for other costs
0.0 % for construction management

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.0%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%

Total, use	3.0%

	33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
	33. Remedial Action									
	33.02. Sampling, & Testing									
	33.02.01. Health and Safety									
HTW AA	Case of 25, disposable coveralls, Tyvek (Pine Environmental Services 9/98)	1.00	EA	0	0	0	115	0	115	114.69
USR AA	Poly Tyvek (case of 12) (Pine Environmental Services 9/98)	1.00	EA	0	0	0	74	0	74	73.83
HTW AA	First aid kits, 36 ingredients	1.00	EA	0	0	0	88	0	88	88.08
HTW AA	Eye prot, safety glasses	2.00	EA	0	0	0	12	0	12	6.18
M HTW AA	Latex Gloves (100/box) (Pine Environmental Services 9/98)	4.00	BX	0	0	0	42	0	42	10.43
USR AA	North Respirator Cartridges (2 per/pkg) (Pine Environmental Services 9/98)	2.00	PK	0	0	0	9	0	9	4.49
	33.02.02. Personnel									
AFH AA	Personnel per diem (2 people x 4 days x 2 events)	18.00	DAY	0	0	0	1,907	0	1,907	105.93
AFH AA	Car or van mileage charge	2000.00	MI	0	0	0	984	0	984	0.49
HTW AA	Daily rate, subcontracted	18.00	EA	0	0	0	0	12,240	12,240	680.00
	33.02.04. Sample Groundwater									
	Groundwater monitoring costs for one year are included in this estimate. Each monitoring well is sampled semi-annually for TAL metals, VOCs, and SVOCs.									
USR AA	Turbidimeter Rental (Pine Environmental Services 9/98)	2.00	WK	0	0	160	0	0	160	80.00
USR AA	Hydrolab Rental (Hydrolab Corp. 9/98)	2.00	WK	0	0	690	0	0	690	345.00
USR AA	Bladder Pump Rental (Marschalk Corporation 9/98)	2.00	WK	0	0	190	0	0	190	95.00
USR AA	Pump Controller Rental (Marschalk Corp. 9/98)	2.00	WK	0	0	300	0	0	300	150.00
USR AA	12-volt Compressor Rental (Marschalk Corp. 9/98)	2.00	WK	0	0	350	0	0	350	175.00
USR AA	Misc. Equipment Rental (Marschalk Corp. 9/98)	2.00	WK	0	0	65	0	0	65	32.50
USR AA	Thermo Environmental 580B (OVM) Rental (US Environmental, 12/98)	2.00	WK	0	0	400	0	0	400	200.00
USR AA	Teflon Tubing (1/4" ID x 3/8") (Pine Environmental Services 9/98)	100.00	FT	0	0	0	268	0	268	2.68
USR AA	Isobutylene Calibration Gas (Pine Environmental Services 9/98)	2.00	EA	0	0	0	173	0	173	86.40

33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR AA pH4 Buffer Solution (Cole-Parmer Instrument Co. 9/98)	2.00	EA	0	0	0	22	0	22	11.24
USR AA pH7 Buffer Solution (Cole-Parmer Instrument Co. 9/98)	2.00	EA	0	0	0	22	0	22	11.24
USR AA 700 Conductivity Solution (Cole-Parmer Instrument Co. 9/98)	2.00	EA	0	0	0	39	0	39	19.26
USR AA 2060 Conductivity Solution (Cole-Parmer Instrument Co. 9/98)	2.00	EA	0	0	0	39	0	39	19.26
HTW AA Custody seals (package of 10)	8.00	EA	0	0	0	126	0	126	15.75
HTW AA 1gal,4/case,safe trans can w/vermiculite	2.00	EA	0	0	0	58	0	58	29.21
AFH AA Packing Tape: Testing, packaging & shipping, per roll	8.00	EA	0	0	0	13	0	13	1.65
HTW AA Shipping coolers: Testing, packaging & shipping, 51# to 70# pkg, overnight dlvy	14.00	EA	0	0	0	0	1,096	1,096	78.27
AFH AA Testing, packaging & shipping, bag ice	100.00	EA	0	0	0	0	119	119	1.19
HTW AA 48 quart ice chest, cooler & ice chest	2.00	EA	0	0	0	0	55	55	27.62
USR AA Hydrolab Rental (Hydrolab Corp. 9/98)	2.00	WK	0	0	0	0	0	0	0.00
33.02.07. Analysis of Groundwater									
HTW AA Purgeable organics (NYSDEC CLP TCL VOCs - unit cost from Severn Trent Lab 9/98)	16.00	EA	0	0	0	0	2,800	2,800	175.00
HTW AA Semi-volatile organics (NYSDEC CLP TCL Semi-VOCs modified - unit cost from Severn Trent Lab 9/98)	16.00	EA	0	0	0	0	5,920	5,920	370.00
AFH AA TAL metals (NYSDEC CLP TAL Inorganics - unit cost from Severn Trent Lab 9/98)	16.00	EA	0	0	0	0	2,480	2,480	155.00
33.02.12. Disposal of IDW									
Disposal of Investigation Derived Wastes									
USR AA Disposal of purge water drums (1 drum of purge water for 2 rounds of sampling for 12 wells) (Price quoted by Waste Management Inc., 5/99. Includes 7% sales tax. Does NOT include transportation. Price quoted under assumption that drums	1.00		0	0	0	0	134	134	133.75

33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
contain oily liquid of low viscosity containing PAHs, metals (and does not contain PCBs).)									
TOTAL ANNUAL MONITORING COSTS			0	0	2,155	3,991	24,844	30,989	

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CONTINGN	OTHER	CON MGMT	TOTAL COST	UNIT COST
33 Remedial Action										
33.02 Sampling, & Testing										
33.02.01 Health and Safety	1.00	EA	430	0	10	0	10	0	460	458.16
33.02.02 Personnel	1.00	EA	19,240	0	580	0	590	0	20,410	20408.11
33.02.04 Sample Groundwate	1.00	EA	5,320	0	160	0	160	0	5,640	5644.40
33.02.07 Analysis of Groun	1.00	EA	14,240	0	430	0	440	0	15,110	15105.99
33.02.12 Disposal of IDW	1.00	EA	170	0	10	0	10	0	180	180.40
TOTAL Sampling, & Testi	1.00	EA	39,400	0	1,180	0	1,220	0	41,800	41797.04
TOTAL Remedial Action	1.00	EA	39,400	0	1,180	0	1,220	0	41,800	41797.04

R2032: 330204 P0195 46422 32 oz HDPE b Detail item has zero quantity - no costs reported

* * * END OF ERROR REPORT * * *

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

SEAD-59
EXCAVATION/OFF-SITE DISPOSAL
NYSDEC TAGM Cleanup Goals

Designed By: Parsons ES
Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 12/12/00
Effective Date of Pricing: 10/03/96
Est Construction Time: 120 Days

Sales Tax: 7.0%

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The following is a summary of the activities that are presently included in Alternative 3.

Off-Site Disposal: Excavate/Off-site Disposal
- Mobilize, site prep, clear/grub, erosion control, and survey
- Excavate soils in Area 1, 2, 3, 4 and Others.
- Screen excavated soils to remove debris, drums, paint cans.
- Install 40 soil borings in a grid pattern in the Area south of the raod between Areas 2,3,4,Other to fill the data gap by confirming that there is no contamination in this area.
- Treat water by air stripping.
- Dispose of drums in off-site hazardous waste landfill and construction debris in off-site solid waste landfill.
- Dispose soils with concentrations > Cleanup Goals at off site landfill.
- Backfill excavations with excavated soils with concentrations < goals.
- Cover Area 1 with 2' vegetative cover.
- Cover areas south of the road with crushed stone.
- Demobilize
- Install 4 new monitoring wells
- Ground water monitoring for 5 years (costed separately)

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

The following list are the areas where there is the biggest potential for changes in cost due to uncertainties:

- Quantities of soil over TAGMs could increase based on the results of the confirmatory sampling done in the excavation.
- The quantities of soil requiring disposal as hazardous waste could increase based on the results of the confirmatory sampling done in the soil piles.

Contractor costs are calculated as a percentage of running total as

5 % for field office support
15 % for home office support
10 % for profit
4 %for bond

Owner's cost are calculated as a percentage of running total as

2 % for design contingency
3 % for escalation
25 % for construction contingency
3.5 % for other costs
8 % for construction management

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.5%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total, use	3.5%

33.01. Mobilization	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33. Remedial Action									
33.01. Mobilization									
USR AA Mobilization	1.00	EA	0	793	2,500	535	0	3,828	3827.72
33.02. Sampling, & Testing									
33.02.06. Groundwater									
Groundwater - from holding tanks									
HTW AA For Disposal: NYSDEC CLP TCL VOCs, volatile organics , groundwater (Severn Trent Lab 9/98) (Assume 1 sample for each tank)	15.00	EA	0	0	0	0	2,625	2,625	175.00
AFH AA For Disposal: NYSDEC CLP TAL SVOCs modified , groundwater, (Severn Trent Lab, 9/98) (Assume 1 sample per tank)	15.00	EA	0	0	0	0	5,550	5,550	370.00
AFH AA For Disposal: NYSDEC TAL - Inorganics, groundwater (Severn Trent Lab, 9/98) (Assume 1 sample per tank)	15.00	EA	0	0	0	0	2,325	2,325	155.00
33.02.11. Soil									
For disposal; TCLP analysis required for non hazardous landfill disposal. Assuming 1 sample every 150 cy: 23,025 cy x 1.40/150 = 215 x 1.2 = 260 samples									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	31,200	31,200	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	59,800	59,800	230.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	31,200	31,200	120.00
33.02.13. Confirmatory-Soil - All Areas									
HTW AA Confirmatory: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample every 50 ft of wall adn floor or excavation.	156.00	EA	0	0	0	0	27,300	27,300	175.00

33. Remedial Action

	33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
AFH AA	Confirmatory: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample every 50 ft of wall and floor of excavation.	156.00	EA	0	0	0	0	57,720	57,720	370.00
AFH AA	Confirmatory: NYSDEC CLP TAL - Metals , soil (Severn Trent	156.00	EA	0	0	0	0	24,180	24,180	155.00
	33.02.16. Soil Boring Grid South of Road from soil boring south of road to confirm no contamination between Areas 2,3,4, Others									
HTW AA	Confirmatory: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	10,500	10,500	175.00
AFH AA	Confirmatory: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	22,200	22,200	370.00
AFH AA	Confirmatory: NYSDEC CLP TAL - Metals , soil (Severn Trent, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	9,300	9,300	155.00
	33.02.18. IDW from Soil Borings									
HTW AA	IDW: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample per drum.)	20.00	EA	0	0	0	0	3,500	3,500	175.00
AFH AA	IDW: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample per drum.	20.00	EA	0	0	0	0	7,400	7,400	370.00
AFH AA	IDW: NYSDEC CLP TAL - Metals , soil (Severn Trent - assume one sample per drum)	20.00	EA	0	0	0	0	3,100	3,100	155.00
	33.03. Site Work									
	33.03.02. Clearing and Grubbing									
AF AA	Clearing, brush w/dozer & brush rake, light brush	3.00	ACR	48	1,298	1,887	0	0	3,185	1061.54
	33.03.08. Survey Remediation Area Survey remediation area									
USR AA	Survey remediation area	10.00	DAY	0	15,000	2,500	2,675	0	20,175	2017.50
	33.03.11. Erosion control									
B MIL AA	Silt Fence: Installation and materials high, polypropylene	16000	LF	3,360	80,000	8,000	25,680	0	113,680	7.11
B HTW AA	Hay bales - stalked	16000	LF	5	2,720	0	17,120	0	19,840	1.24
B MIL AA	Maintain silt fence and remove	16000	LF	107	2,720	0	17,120	0	19,840	1.24

	33.04. Fencing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
	33.04. Fencing									
MIL AA	Site dml, chain link fence, remove & salvage for reuse	2000.00	LF	103	2,600	0	0	0	2,600	1.30
MIL AA	Fence, CL scty, std FE-6, 6' high, no gates/signs	2000.00	LF	96	2,820	0	39,847	0	42,667	21.33
MIL AA	Fence, CL, set in conc, 6' H, indl, corner post, galv stl, 4" OD	4.00	EA	2	55	9	295	0	358	89.48
MIL AA	Fence, CL, double, 24' W, indl, gates, swing, 6' high	1.00	EA	0	0	0	435	0	435	435.38
	33.05. Wastewater									
	33.05. 1. Wastewater									
L MIL AA	Pump, cntfgl,6"D, horiz mtd, horiz splt, sgl stg,1500GPM,50HP	1.00	EA	0	0	0	10,767	0	10,767	10766.88
M HTW AA	21,000 Gal, Steel, hold tank stationary	4.00	EA	0	0	0	5,264	0	5,264	1316.10
	33.07. Air Stripping									
HTW AA	HTRW,PTTU,1'dia,14.5'pkng hgt, 30GPM,850CFM,FRP shell	1.00	EA	97	3,257	0	7,009	0	10,265	10265.47
AFH AA	HTRW,PTTU, >= 12' high, install air strip tower, 1'- 3' diam.	1.00	EA	91	3,035	226	0	0	3,261	3261.05
HTW AA	HTRW, PT opt, air flow switch (loss of air flow - motor failure)	1.00	EA	0	0	0	512	0	512	511.81
	33.10. Soil Remediation									
	33.10.02. Sitework - Soils Excavating Areas 1,2,3,4, Others Volumes are increased by 30% for expansion and 10% contingency. For weight calculations, the volume is increased by 10% only. All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Soils category.									
USR AA	Excavate, stockpile, screen soil (volumes used for estimate are	32925	CY	0	0	0	0	658,500	658,500	20.00
USR AA	Plastic sheeting for ground: 6mil polyethylene liner (1000sf	550000	SF	0	0	0	47,080	0	47,080	0.09
USR AA	Cover stockpiles w/ plastic sheeting: Plastic sheeting: 6mil polyethylene liner (1000sf / roll; 1 roll = $75)	550000	SF	0	0	0	47,080	0	47,080	0.09
MIL AA	Loam or topsoil, furnish & place, imported, 6" deep	6240.00	CY	550	16,661	8,674	121,718	0	147,052	23.57
USR AA	Common fill (6") - Material for Backfill, includes cost of material (bank sand) and delivery (DeWitt, 1999) For	10188	TON	0	0	0	47,420	0	47,420	4.65

33.10. Soil Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
this option, excavated material with concentrations of COCs less than Clean up Goals will be used as backfill.									
AF AA Fill, spread borrow w/dozer	14802	CY	178	5,329	9,621	0	0	14,950	1.01
AF Compaction, steel wheel tandem roller, 5 ton	14802	CY	105	3,108	2,664	0	0	5,773	0.39
RSM AA Seeding, athletic field mix, 8#/MSFpush spreader	70.20	MSF	70	1,775	0	3,125	0	4,899	69.79
33.10.04. Drum Removal Approx. 20 drums in Area 1									
L MIL AA Excavator for drum removal at Level B	20.00	EA	2	323	445	0	0	768	38.40
L MIL AA Excavator for drum moving at Level B	20.00	EA	2	323	445	0	0	768	38.40
L MIL AA Level B breathing unit, suit, overboots, gloves	4.00	EA	0	0	2,000	0	0	2,000	500.00
33.10.06. Disposal: Disposal and Transportation of drums to hazardous waste landfill; disposal of debris and soil in solid waste landfill.									
HTW AA HW packaging, overpacks, 18"dia x 34"H, 16ga stl drum, 55gal, DOT 17C	20.00	EA	0	0	0	1,583	0	1,583	79.13
USR AA Drums/Paint Cans: Transportatio n of Drums by dedicated van	1.00	EA	0	0	0	0	546	546	545.70
USR AA Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management	20.00	EA	0	0	0	2,862	0	2,862	143.11
USR AA Extra fees for overpack use	20.00	EA	0	0	0	0	800	800	40.00
USR AA Debris: Transport and Dispose nonhaz waste, bulk solid waste	3799.00	TON	0	0	0	0	119,669	119,669	31.50
HTW AA Soils: Transport and Dispose nonhaz waste, bulk soil (Earthwatch, 7/00)	34192	TON	0	0	0	0	1,077,048	1,077,048	31.50
33.18. Confirmatory Soil Borings -									
B CIV AA Mob/Demob facility	2.00	EA	0	0	0	0	800	800	400.00
L AFH AA Decon Pad	1.00	EA	0	0	0	0	150	150	150.00
L AFH AA Decon Time	40.00	HR	0	0	0	0	6,000	6,000	150.00
M HTW AA HW packaging, DOT steel drums, 55 gal,	15.00	EA	0	0	0	0	750	750	50.00
L AFH AA Move drums	15.00	EA	0	0	0	0	375	375	25.00
L MIL AA Borings, auger holes in earth, no samples, 4" dia	280.00	LF	0	0	0	0	3,920	3,920	14.00

33.18. Confirmatory Soil Borings -	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
L HTW AA Split spoon sampling OD	16.00	LF	0	0	0	0	192	192	12.00
L AFH AA Standby Time	4.00	HR	0	0	0	0	600	600	150.00
L AFH AA Grout Boreholes	280.00	LF	0	0	0	0	1,680	1,680	6.00
33.26. Demobilization									
TOTAL Decontaminate Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821.20
TOTAL Demobilization	1.00	EA	0	528	2,500	500	0	3,528	3528.48
33.31. Remedial Design									
B HTW AA Remedial Design Workplan	1.00	EA	0	27,600	0	2,568	0	30,168	30168.00
B HTW AA Preliminary Design Report	1.00	EA	0	46,000	0	4,280	0	50,280	50280.00
B HTW AA Pre-final/Final Design Report, Including O&M Plan, S&A Plan, QA Plan, Contingency Plan, Waste	1.00	EA	0	118,000	0	7,490	0	125,490	125490.00
B HTW AA Remedial Action Workplan, including QA/QC Plan, H&S Plan	1.00	EA	0	47,500	0	2,675	0	50,175	50175.00
B HTW AA Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.00
33.33. Well Installation									
B CIV AA Mob/Demob facility	1.00	EA	0	0	0	0	600	600	600.00
L AFH AA Decon Pad	1.00	EA	0	0	0	0	150	150	150.00
B HTW AA Installation of Monitoring well threaded	4.00	EA	0	0	0	0	2,320	2,320	580.00
L HTW AA Monitor well, drilling, HS auger, 4.25" ID x 8" OD	40.00	LF	0	0	0	0	720	720	18.00
TOTAL SEAD-59			4,816	430,766	46,470	420,279	2,172,719	3,070,234	

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33 Remedial Action										
33.01 Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
TOTAL Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
33.02 Sampling, & Testing										
33.02.06 Groundwater	1.00	EA	14,500	290	440	3,810	670	1,580	21,290	21291.88
33.02.11 Soil	1.00	EA	168,800	3,380	5,170	44,340	7,760	18,360	247,800	247796.91
33.02.13 Confirmatory-Soil	1.00	EA	150,850	3,020	4,620	39,620	6,930	16,400	221,440	221435.54
33.02.16 Soil Boring Grid	1.00	EA	58,020	1,160	1,780	15,240	2,670	6,310	85,170	85167.51
33.02.18 IDW from Soil Bor	1.00	EA	19,340	390	590	5,080	890	2,100	28,390	28389.17
TOTAL Sampling, & Testi	1.00	EA	411,510	8,230	12,590	108,080	18,910	44,750	604,080	604081.01
33.03 Site Work										
33.03.02 Clearing and Grub	3.00	ACR	4,400	90	130	1,160	200	480	6,460	2152.58
33.03.08 Survey Remediatio	1.00	ACR	27,870	560	850	7,320	1,280	3,030	40,910	40910.82
33.03.11 Erosion control	1.00	LF	211,850	4,240	6,480	55,640	9,740	23,040	310,980	310983.09
TOTAL Site Work	1.00	EA	244,120	4,880	7,470	64,120	11,220	26,540	358,350	358351.66
33.04 Fencing	1.00	EA	63,630	1,270	1,950	16,710	2,920	6,920	93,400	93400.60
33.05 Wastewater										
33.05. 1 Wastewater	1.00	EA	22,150	440	680	5,820	1,020	2,410	32,510	32508.19
TOTAL Wastewater	1.00	EA	22,150	440	680	5,820	1,020	2,410	32,510	32508.19
33.07 Air Stripping	1.00	EA	19,390	390	590	5,090	890	2,110	28,470	28466.90
33.10 Soil Remediation										
33.10.02 Sitework - Soils	1.00	EA	1,341,540	26,830	41,050	352,360	61,660	145,880	1,969,320	1969318.12
33.10.04 Drum Removal	1.00	EA	4,880	100	150	1,280	220	530	7,170	7170.29
33.10.06 Disposal:	1.00	EA	1,661,120	33,220	50,830	436,290	76,350	180,630	2,438,440	2438441.18
TOTAL Soil Remediation	1.00	EA	3,007,550	60,150	92,030	789,930	138,240	327,030	4,414,930	4414929.60
33.18 Confirmatory Soil Bo	1.00	EA	19,980	400	610	5,250	920	2,170	29,340	29336.15
33.26 Demobilization										
33.26.04 Decontaminate Equ	1.00	EA	12,190	240	370	3,200	560	1,330	17,890	17887.61

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33.26.06 Demobilization	1.00	EA	4,870	100	150	1,280	220	530	7,160	7155.04
TOTAL Demobilization	1.00	EA	17,060	340	520	4,480	780	1,860	25,040	25042.66
33.31 Remedial Design	1.00	EA	423,050	8,460	12,950	111,110	19,450	46,000	621,020	621019.20
33.33 Well Installation	1.00	EA	5,240	0	160	0	190	450	6,030	6027.73
TOTAL Remedial Action	1.00	EA	4,238,960	84,670	129,710	1,111,990	194,790	460,810	6,220,930	6220925.54

No errors detected...

* * * END OF ERROR REPORT * * *

SUMMARY REPORTS SUMMARY PAGE

DETAILED ESTIMATE DETAIL PAGE

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

SEAD-59
EXCAVATION/OFF-SITE DISPOSAL
EPA SSLs Cleanup Goals

Designed By: Parsons ES
Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 10/10/01
Effective Date of Pricing: 10/03/96
Est Construction Time: 120 Days

Sales Tax: 7.0%

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The following is a summary of the activities that are presently included in Alternative 3.

Off-Site Disposal: Excavate/Off-site Disposal
- Mobilize, site prep, clear/grub, erosion control, and survey
- Excavate soils in Area 1, 2, 3, 4 and Others.
- Screen excavated soils to remove debris, drums, paint cans.
- Install 40 soil borings in a grid pattern in the Area south of the raod between Areas 2,3,4,Other to fill the data gap by confirming that there is no contamination in this area.
- Treat water by air stripping.
- Dispose of drums in off-site hazardous waste landfill and construction debris in off-site solid waste landfill.
- Dispose soils with concentrations > Cleanup Goals at off site landfill.
- Backfill excavations with excavated soils with concentrations < goals.
- Cover Area 1 with 2' vegetative cover.
- Cover areas south of the road with crushed stone.
- Demobilize
- Install 4 new monitoring wells
- Ground water monitoring for 5 years (costed separately)

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

The following list are the areas where there is the biggest potential for changes in cost due to uncertainties:

- Quantities of soil over TAGMs could increase based on the results of the confirmatory sampling done in the excavation.
- The quantities of soil requiring disposal as hazardous waste could increase based on the results of the confirmatory sampling done in the soil piles.

Contractor costs are calculated as a percentage of running total as
- 5 % for field office support
- 15 % for home office support
- 10 % for profit
- 4 %for bond

Owner's cost are calculated as a percentage of running total as
- 2 % for design contingency
- 3 % for escalation
- 25 % for construction contingency
- 3.5 % for other costs
- 8 % for construction management

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.5%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total, use	3.5%

33.01. Mobilization	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33. Remedial Action									
33.01. Mobilization									
USR AA Mobilization	1.00	EA	0	793	2,500	535	0	3,828	3827.72
33.02. Sampling, & Testing									
33.02.06. Groundwater									
Groundwater - from holding tanks									
HTW AA For Disposal: NYSDEC CLP TCL VOCs, volatile organics , groundwater (Severn Trent Lab 9/98) (Assume 1 sample for each tank)	15.00	EA	0	0	0	0	2,625	2,625	175.00
AFH AA For Disposal: NYSDEC CLP TAL SVOCs modified , groundwater, (Severn Trent Lab, 9/98) (Assume 1 sample per tank)	15.00	EA	0	0	0	0	5,550	5,550	370.00
AFH AA For Disposal: NYSDEC TAL - Inorganics, groundwater (Severn Trent Lab, 9/98) (Assume 1 sample per tank)	15.00	EA	0	0	0	0	2,325	2,325	155.00
33.02.11. Soil									
For disposal; TCLP analysis required for non hazardous landfill disposal. Assuming 1 sample every 150 cy: 23,025 cy x 1.40/150 = 215 x 1.2 = 260 samples									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	31,200	31,200	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	59,800	59,800	230.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	31,200	31,200	120.00
33.02.13. Confirmatory-Soil - All Areas									
HTW AA Confirmatory: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample every 50 ft of wall adn floor or excavation.	156.00	EA	0	0	0	0	27,300	27,300	175.00

33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
AFH AA Confirmatory: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample every 50 ft of wall and floor of excavation.	156.00	EA	0	0	0	0	57,720	57,720	370.00
AFH AA Confirmatory: NYSDEC CLP TAL - Metals , soil (Severn Trent	156.00	EA	0	0	0	0	24,180	24,180	155.00
33.02.16. Soil Boring Grid South of Road									
from soil boring south of road to confirm no contamination between Areas 2,3,4, Others									
HTW AA Confirmatory: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	10,500	10,500	175.00
AFH AA Confirmatory: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	22,200	22,200	370.00
AFH AA Confirmatory: NYSDEC CLP TAL - Metals , soil (Severn Trent, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	9,300	9,300	155.00
33.02.18. IDW from Soil Borings									
HTW AA IDW: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample per drum.)	20.00	EA	0	0	0	0	3,500	3,500	175.00
AFH AA IDW: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample per drum.	20.00	EA	0	0	0	0	7,400	7,400	370.00
AFH AA IDW: NYSDEC CLP TAL - Metals , soil (Severn Trent - assume one sample per drum)	20.00	EA	0	0	0	0	3,100	3,100	155.00
33.03. Site Work									
33.03.02. Clearing and Grubbing									
AF AA Clearing, brush w/dozer & brush rake, light brush	3.00	ACR	48	1,298	1,887	0	0	3,185	1061.54
33.03.08. Survey Remediation Area									
Survey remediation area									
USR AA Survey remediation area	10.00	DAY	0	15,000	2,500	2,675	0	20,175	2017.50
33.03.11. Erosion control									
B MIL AA Silt Fence: Installation and materials high, polypropylene	16000	LF	3,360	80,000	8,000	25,680	0	113,680	7.11
B HTW AA Hay bales - stalked	16000	LF	5	2,720	0	17,120	0	19,840	1.24
B MIL AA Maintain silt fence and remove	16000	LF	107	2,720	0	17,120	0	19,840	1.24

	33.04. Fencing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
	33.04. Fencing									
MIL AA	Site dml, chain link fence, remove & salvage for reuse	2000.00	LF	103	2,600	0	0	0	2,600	1.30
MIL AA	Fence, CL scty, std FE-6, 6' high, no gates/signs	2000.00	LF	96	2,820	0	39,847	0	42,667	21.33
MIL AA	Fence, CL, set in conc, 6' H, indl, corner post, galv stl, 4" OD	4.00	EA	2	55	9	295	0	358	89.48
MIL AA	Fence, CL, double, 24' W, indl, gates, swing, 6' high	1.00	EA	0	0	0	435	0	435	435.38
	33.05. Wastewater									
	33.05. 1. Wastewater									
L MIL AA	Pump, cntfgl,6"D, horiz mtd, horiz splt, sgl stg,1500GPM,50HP	1.00	EA	0	0	0	10,767	0	10,767	10766.88
M HTW AA	21,000 Gal, Steel, hold tank stationary	4.00	EA	0	0	0	5,264	0	5,264	1316.10
	33.07. Air Stripping									
HTW AA	HTRW,PTTU,1'dia,14.5'pkng hgt, 30GPM,850CFM,FRP shell	1.00	EA	97	3,257	0	7,009	0	10,265	10265.47
AFH AA	HTRW,PTTU, >= 12' high, install air strip tower, 1'- 3' diam.	1.00	EA	91	3,035	226	0	0	3,261	3261.05
HTW AA	HTRW, PT opt, air flow switch (loss of air flow - motor failure)	1.00	EA	0	0	0	512	0	512	511.81
	33.10. Soil Remediation									
	33.10.02. Sitework - Soils Excavating Areas 1,2,3,4, Others Volumes are increased by 30% for expansion and 10% contingency. For weight calculations, the volume is increased by 10% only. All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Soils category.									
USR AA	Excavate, stockpile, screen soi l (volumes used for estimate are	32925	CY	0	0	0	0	658,500	658,500	20.00
USR AA	Plastic sheeting for ground: 6mil polyethylene liner (1000sf	550000	SF	0	0	0	47,080	0	47,080	0.09
USR AA	Cover stockpiles w/ plastic sheeting: Plastic sheeting: 6mil polyethylene liner (1000sf / roll; 1 roll = $75)	550000	SF	0	0	0	47,080	0	47,080	0.09
MIL AA	Loam or topsoil, furnish & place, imported, 6" deep	6240.00	CY	550	16,661	8,674	121,718	0	147,052	23.57
USR AA	Common fill (6") - Material for Backfill, includes cost of material (bank sand) and delivery (DeWitt, 1999) For	6303.00	TON	0	0	0	29,337	0	29,337	4.65

33.10. Soil Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
this option, excavated material with concentrations of COCs less than Clean up Goals will be used as backfill.									
AF AA Fill, spread borrow w/dozer	14802	CY	178	5,329	9,621	0	0	14,950	1.01
AF Compaction, steel wheel tandem roller, 5 ton	14802	CY	105	3,108	2,664	0	0	5,773	0.39
RSM AA Seeding, athletic field mix, 8#/MSFpush spreader	70.20	MSF	70	1,775	0	3,125	0	4,899	69.79
33.10.04. Drum Removal Approx. 20 drums in Area 1									
L MIL AA Excavator for drum removal at Level B	20.00	EA	2	323	445	0	0	768	38.40
L MIL AA Excavator for drum moving at Level B	20.00	EA	2	323	445	0	0	768	38.40
L MIL AA Level B breathing unit, suit, overboots, gloves	4.00	EA	0	0	2,000	0	0	2,000	500.00
33.10.06. Disposal: Disposal and Transportation of drums to hazardous waste landfill; disposal of debris and soil in solid waste landfill.									
HTW AA HW packaging, overpacks, 18"dia x 34"H, 16ga stl drum, 55gal, DOT 17C	20.00	EA	0	0	0	1,583	0	1,583	79.13
USR AA Drums/Paint Cans: Transportatio n of Drums by dedicated van	1.00	EA	0	0	0	0	546	546	545.70
USR AA Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management	20.00	EA	0	0	0	2,862	0	2,862	143.11
USR AA Extra fees for overpack use	20.00	EA	0	0	0	0	800	800	40.00
USR AA Debris: Transport and Dispose nonhaz waste, bulk solid waste	3799.00	TON	0	0	0	0	119,669	119,669	31.50
HTW AA Soils: Transport and Dispose nonhaz waste, bulk soil (Earthwatch, 7/00)	30393	TON	0	0	0	0	957,380	957,380	31.50
33.18. Confirmatory Soil Borings -									
B CIV AA Mob/Demob facility	2.00	EA	0	0	0	0	800	800	400.00
L AFH AA Decon Pad	1.00	EA	0	0	0	0	150	150	150.00
L AFH AA Decon Time	40.00	HR	0	0	0	0	6,000	6,000	150.00
M HTW AA HW packaging, DOT steel drums, 55 gal,	15.00	EA	0	0	0	0	750	750	50.00
L AFH AA Move drums	15.00	EA	0	0	0	0	375	375	25.00
L MIL AA Borings, auger holes in earth, no samples, 4" dia	280.00	LF	0	0	0	0	3,920	3,920	14.00

33.18. Confirmatory Soil Borings -	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
L HTW AA Split spoon sampling OD	16.00	LF	0	0	0	0	192	192	12.00
L AFH AA Standby Time	4.00	HR	0	0	0	0	600	600	150.00
L AFH AA Grout Boreholes	280.00	LF	0	0	0	0	1,680	1,680	6.00
33.26. Demobilization									
TOTAL Decontaminate Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821.20
TOTAL Demobilization	1.00	EA	0	528	2,500	500	0	3,528	3528.48
33.31. Remedial Design									
B HTW AA Remedial Design Workplan	1.00	EA	0	27,600	0	2,568	0	30,168	30168.00
B HTW AA Preliminary Design Report	1.00	EA	0	46,000	0	4,280	0	50,280	50280.00
B HTW AA Pre-final/Final Design Report, Including O&M Plan, S&A Plan, QA Plan, Contingency Plan, Waste	1.00	EA	0	118,000	0	7,490	0	125,490	125490.00
B HTW AA Remedial Action Workplan, including QA/QC Plan, H&S Plan	1.00	EA	0	47,500	0	2,675	0	50,175	50175.00
B HTW AA Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.00
33.33. Well Installation									
B CIV AA Mob/Demob facility	1.00	EA	0	0	0	0	600	600	600.00
L AFH AA Decon Pad	1.00	EA	0	0	0	0	150	150	150.00
B HTW AA Installation of Monitoring well threaded	4.00	EA	0	0	0	0	2,320	2,320	580.00
L HTW AA Monitor well, drilling, HS auger, 4.25" ID x 8" OD	40.00	LF	0	0	0	0	720	720	18.00
TOTAL SEAD-59			4,816	430,766	46,470	402,196	2,053,051	2,932,483	

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33 Remedial Action										
33.01 Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
TOTAL Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
33.02 Sampling, & Testing										
33.02.06 Groundwater	1.00	EA	14,500	290	440	3,810	670	1,580	21,290	21291.88
33.02.11 Soil	1.00	EA	168,800	3,380	5,170	44,340	7,760	18,360	247,800	247796.91
33.02.13 Confirmatory-Soil	1.00	EA	150,850	3,020	4,620	39,620	6,930	16,400	221,440	221435.54
33.02.16 Soil Boring Grid	1.00	EA	58,020	1,160	1,780	15,240	2,670	6,310	85,170	85167.51
33.02.18 IDW from Soil Bor	1.00	EA	19,340	390	590	5,080	890	2,100	28,390	28389.17
TOTAL Sampling, & Testi	1.00	EA	411,510	8,230	12,590	108,080	18,910	44,750	604,080	604081.01
33.03 Site Work										
33.03.02 Clearing and Grub	3.00	ACR	4,400	90	130	1,160	200	480	6,460	2152.58
33.03.08 Survey Remediatio	1.00	ACR	27,870	560	850	7,320	1,280	3,030	40,910	40910.82
33.03.11 Erosion control	1.00	LF	211,850	4,240	6,480	55,640	9,740	23,040	310,980	310983.09
TOTAL Site Work	1.00	EA	244,120	4,880	7,470	64,120	11,220	26,540	358,350	358351.66
33.04 Fencing	1.00	EA	63,630	1,270	1,950	16,710	2,920	6,920	93,400	93400.60
33.05 Wastewater										
33.05. 1 Wastewater	1.00	EA	22,150	440	680	5,820	1,020	2,410	32,510	32508.19
TOTAL Wastewater	1.00	EA	22,150	440	680	5,820	1,020	2,410	32,510	32508.19
33.07 Air Stripping	1.00	EA	19,390	390	590	5,090	890	2,110	28,470	28466.90
33.10 Soil Remediation										
33.10.02 Sitework - Soils	1.00	EA	1,316,560	26,330	40,290	345,800	60,510	143,160	1,932,650	1932650.00
33.10.04 Drum Removal	1.00	EA	4,880	100	150	1,280	220	530	7,170	7170.29
33.10.06 Disposal:	1.00	EA	1,495,810	29,920	45,770	392,870	68,750	162,650	2,195,780	2195777.64
TOTAL Soil Remediation	1.00	EA	2,817,260	56,350	86,210	739,950	129,490	306,340	4,135,600	4135597.94
33.18 Confirmatory Soil Bo	1.00	EA	19,980	400	610	5,250	920	2,170	29,340	29336.15
33.26 Demobilization										
33.26.04 Decontaminate Equ	1.00	EA	12,190	240	370	3,200	560	1,330	17,890	17887.61

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33.26.06 Demobilization	1.00	EA	4,870	100	150	1,280	220	530	7,160	7155.04
TOTAL Demobilization	1.00	EA	17,060	340	520	4,480	780	1,860	25,040	25042.66
33.31 Remedial Design	1.00	EA	423,050	8,460	12,950	111,110	19,450	46,000	621,020	621019.20
33.33 Well Installation	1.00	EA	5,240	0	160	0	190	450	6,030	6027.73
TOTAL Remedial Action	1.00	EA	4,048,670	80,870	123,890	1,062,010	186,040	440,120	5,941,590	5941593.87

No errors detected...

* * * END OF ERROR REPORT * * *

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

SEAD-59
EXCAVATION/OFF-SITE DISPOSAL
Risk-based Cleanup Goals for
Construction Scenario

Designed By: Parsons ES
Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 10/11/01
Effective Date of Pricing: 10/03/96
Est Construction Time: 120 Days

Sales Tax: 7.0%

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The following is a summary of the activities that are presently included in Alternative 3.

Off-Site Disposal: Excavate/Off-site Disposal
- Mobilize, site prep, clear/grub, erosion control, and survey
- Excavate soils in Area 1, 2, 3, 4 and Others.
- Screen excavated soils to remove debris, drums, paint cans.
- Install 40 soil borings in a grid pattern in the Area south of the raod between Areas 2,3,4,Other to fill the data gap by confirming that there is no contamination in this area.
- Treat water by air stripping.
- Dispose of drums in off-site hazardous waste landfill and construction debris in off-site solid waste landfill.
- Dispose soils with concentrations > Cleanup Goals at off site landfill.
- Backfill excavations with excavated soils with concentrations < goals.
- Cover Area 1 with 2' vegetative cover.
- Cover areas south of the road with crushed stone.
- Demobilize
- Install 4 new monitoring wells
- Ground water monitoring for 5 years (costed separately)

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

The following list are the areas where there is the biggest potential for changes in cost due to uncertainties:

- Quantities of soil over TAGMs could increase based on the results of the confirmatory sampling done in the excavation.
- The quantities of soil requiring disposal as hazardous waste could increase based on the results of the confirmatory sampling done in the soil piles.

Contractor costs are calculated as a percentage of running total as
- 5 % for field office support
- 15 % for home office support
- 10 % for profit
- 4 %for bond

Owner's cost are calculated as a percentage of running total as
- 2 % for design contingency
- 3 % for escalation
- 25 % for construction contingency
- 3.5 % for other costs
- 8 % for construction management

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.5%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total, use	3.5%

33. Remedial Action

33.01. Mobilization	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33. Remedial Action									
33.01. Mobilization									
USR AA Mobilization	1.00	EA	0	793	2,500	535	0	3,828	3827.72
33.02. Sampling, & Testing									
33.02.06. Groundwater									
Groundwater - from holding tanks									
HTW AA For Disposal: NYSDEC CLP TCL VOCs, volatile organics , groundwater (Severn Trent Lab 9/98) (Assume 1 sample for each tank)	15.00	EA	0	0	0	0	2,625	2,625	175.00
AFH AA For Disposal: NYSDEC CLP TAL SVOCs modified , groundwater, (Severn Trent Lab, 9/98) (Assume 1 sample per tank)	15.00	EA	0	0	0	0	5,550	5,550	370.00
AFH AA For Disposal: NYSDEC TAL - Inorganics, groundwater (Severn Trent Lab, 9/98) (Assume 1 sample per tank)	15.00	EA	0	0	0	0	2,325	2,325	155.00
33.02.11. Soil									
For disposal; TCLP analysis required for non hazardous landfill disposal. Assuming 1 sample every 150 cy: 23,025 cy x 1.40/150 = 215 x 1.2 = 260 samples									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	31,200	31,200	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	59,800	59,800	230.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	31,200	31,200	120.00
33.02.13. Confirmatory-Soil - All Areas									
HTW AA Confirmatory: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample every 50 ft of wall adn floor or excavation.	156.00	EA	0	0	0	0	27,300	27,300	175.00

33. Remedial Action

33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
AFH AA Confirmatory: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample every 50 ft of wall and floor of excavation.	156.00	EA	0	0	0	0	57,720	57,720	370.00
AFH AA Confirmatory: NYSDEC CLP TAL - Metals , soil (Severn Trent	156.00	EA	0	0	0	0	24,180	24,180	155.00
33.02.16. Soil Boring Grid South of Road from soil boring south of road to confirm no contamination between Areas 2,3,4, Others									
HTW AA Confirmatory: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	10,500	10,500	175.00
AFH AA Confirmatory: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	22,200	22,200	370.00
AFH AA Confirmatory: NYSDEC CLP TAL - Metals , soil (Severn Trent, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	9,300	9,300	155.00
33.02.18. IDW from Soil Borings									
HTW AA IDW: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample per drum.)	20.00	EA	0	0	0	0	3,500	3,500	175.00
AFH AA IDW: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample per drum.	20.00	EA	0	0	0	0	7,400	7,400	370.00
AFH AA IDW: NYSDEC CLP TAL - Metals , soil (Severn Trent - assume one sample per drum)	20.00	EA	0	0	0	0	3,100	3,100	155.00
33.03. Site Work									
33.03.02. Clearing and Grubbing									
AF AA Clearing, brush w/dozer & brush rake, light brush	3.00	ACR	48	1,298	1,887	0	0	3,185	1061.54
33.03.08. Survey Remediation Area Survey remediation area									
USR AA Survey remediation area	10.00	DAY	0	15,000	2,500	2,675	0	20,175	2017.50
33.03.11. Erosion control									
B MIL AA Silt Fence: Installation and materials high, polypropylene	16000	LF	3,360	80,000	8,000	25,680	0	113,680	7.11
B HTW AA Hay bales - stalked	16000	LF	5	2,720	0	17,120	0	19,840	1.24
B MIL AA Maintain silt fence and remove	16000	LF	107	2,720	0	17,120	0	19,840	1.24

	33.04. Fencing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
	33.04. Fencing									
MIL AA	Site dml, chain link fence, remove & salvage for reuse	2000.00	LF	103	2,600	0	0	0	2,600	1.30
MIL AA	Fence, CL scty, std FE-6, 6' high, no gates/signs	2000.00	LF	96	2,820	0	39,847	0	42,667	21.33
MIL AA	Fence, CL, set in conc, 6' H, indl, corner post, galv stl, 4" OD	4.00	EA	2	55	9	295	0	358	89.48
MIL AA	Fence, CL, double, 24' W, indl, gates, swing, 6' high	1.00	EA	0	0	0	435	0	435	435.38
	33.05. Wastewater									
	33.05. 1. Wastewater									
L MIL AA	Pump, cntfgl,6"D, horiz mtd, horiz splt, sgl stg,1500GPM,50HP	1.00	EA	0	0	0	10,767	0	10,767	10766.88
M HTW AA	21,000 Gal, Steel, hold tank stationary	4.00	EA	0	0	0	5,264	0	5,264	1316.10
	33.07. Air Stripping									
HTW AA	HTRW,PTTU,1'dia,14.5'pkng hgt, 30GPM,850CFM,FRP shell	1.00	EA	97	3,257	0	7,009	0	10,265	10265.47
AFH AA	HTRW,PTTU, >= 12' high, install air strip tower, 1'- 3' diam.	1.00	EA	91	3,035	226	0	0	3,261	3261.05
HTW AA	HTRW, PT opt, air flow switch (loss of air flow - motor failure)	1.00	EA	0	0	0	512	0	512	511.81
	33.10. Soil Remediation									
	33.10.02. Sitework - Soils Excavating Areas 1,2,3,4, Others Volumes are increased by 30% for expansion and 10% contingency. For weight calculations, the volume is increased by 10% only. All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Soils category.									
USR AA	Excavate, stockpile, screen soi l (volumes used for estimate are	32925	CY	0	0	0	0	658,500	658,500	20.00
USR AA	Plastic sheeting for ground: 6mil polyethylene liner (1000sf	550000	SF	0	0	0	47,080	0	47,080	0.09
USR AA	Cover stockpiles w/ plastic sheeting: Plastic sheeting: 6mil polyethylene liner (1000sf / roll; 1 roll = $75)	550000	SF	0	0	0	47,080	0	47,080	0.09
MIL AA	Loam or topsoil, furnish & place, imported, 6" deep	6240.00	CY	550	16,661	8,674	121,718	0	147,052	23.57
USR AA	Common fill (6") - Material for Backfill, includes cost of material (bank sand) and delivery (DeWitt, 1999) For	6303.00	TON	0	0	0	29,337	0	29,337	4.65

	33.10. Soil Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
	this option, excavated material with concentrations of COCs less than Clean up Goals will be used as backfill.									
AF AA	Fill, spread borrow w/dozer	14802	CY	178	5,329	9,621	0	0	14,950	1.01
AF	Compaction, steel wheel tandem roller, 5 ton	14802	CY	105	3,108	2,664	0	0	5,773	0.39
RSM AA	Seeding, athletic field mix, 8#/MSFpush spreader	70.20	MSF	70	1,775	0	3,125	0	4,899	69.79
	33.10.04. Drum Removal									
	Approx. 20 drums in Area 1									
L MIL AA	Excavator for drum removal at Level B	20.00	EA	2	323	445	0	0	768	38.40
L MIL AA	Excavator for drum moving at Level B	20.00	EA	2	323	445	0	0	768	38.40
L MIL AA	Level B breathing unit, suit, overboots, gloves	4.00	EA	0	0	2,000	0	0	2,000	500.00
	33.10.06. Disposal:									
	Disposal and Transportation of drums to hazardous waste landfill; disposal of debris and soil in solid waste landfill.									
HTW AA	HW packaging, overpacks, 18"dia x 34"H, 16ga stl drum, 55gal, DOT 17C	20.00	EA	0	0	0	1,583	0	1,583	79.13
USR AA	Drums/Paint Cans: Transportation of Drums by dedicated van	1.00	EA	0	0	0	0	546	546	545.70
USR AA	Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management	20.00	EA	0	0	0	2,862	0	2,862	143.11
USR AA	Extra fees for overpack use	20.00	EA	0	0	0	0	800	800	40.00
USR AA	Debris: Transport and Dispose nonhaz waste, bulk solid waste	3799.00	TON	0	0	0	0	119,669	119,669	31.50
HTW AA	Soils: Transport and Dispose nonhaz waste, bulk soil (Earthwatch, 7/00)	18999	TON	0	0	0	0	598,469	598,469	31.50
	33.18. Confirmatory Soil Borings -									
B CIV AA	Mob/Demob facility	2.00	EA	0	0	0	0	800	800	400.00
L AFH AA	Decon Pad	1.00	EA	0	0	0	0	150	150	150.00
L AFH AA	Decon Time	40.00	HR	0	0	0	0	6,000	6,000	150.00
M HTW AA	HW packaging, DOT steel drums, 55 gal,	15.00	EA	0	0	0	0	750	750	50.00
L AFH AA	Move drums	15.00	EA	0	0	0	0	375	375	25.00
L MIL AA	Borings, auger holes in earth, no samples, 4" dia	280.00	LF	0	0	0	0	3,920	3,920	14.00

33. Remedial Action

33.18. Confirmatory Soil Borings -	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
L HTW AA Split spoon sampling OD	16.00	LF	0	0	0	0	192	192	12.00
L AFH AA Standby Time	4.00	HR	0	0	0	0	600	600	150.00
L AFH AA Grout Boreholes	280.00	LF	0	0	0	0	1,680	1,680	6.00
33.26. Demobilization									
TOTAL Decontaminate Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821.20
TOTAL Demobilization	1.00	EA	0	528	2,500	500	0	3,528	3528.48
33.31. Remedial Design									
B HTW AA Remedial Design Workplan	1.00	EA	0	27,600	0	2,568	0	30,168	30168.00
B HTW AA Preliminary Design Report	1.00	EA	0	46,000	0	4,280	0	50,280	50280.00
B HTW AA Pre-final/Final Design Report, Including O&M Plan, S&A Plan, QA Plan, Contingency Plan, Waste	1.00	EA	0	118,000	0	7,490	0	125,490	125490.00
B HTW AA Remedial Action Workplan, including QA/QC Plan, H&S Plan	1.00	EA	0	47,500	0	2,675	0	50,175	50175.00
B HTW AA Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.00
33.33. Well Installation									
B CIV AA Mob/Demob facility	1.00	EA	0	0	0	0	600	600	600.00
L AFH AA Decon Pad	1.00	EA	0	0	0	0	150	150	150.00
B HTW AA Installation of Monitoring well threaded	4.00	EA	0	0	0	0	2,320	2,320	580.00
L HTW AA Monitor well, drilling, HS auger, 4.25" ID x 8" OD	40.00	LF	0	0	0	0	720	720	18.00
TOTAL SEAD-59			4,816	430,766	46,470	402,196	1,694,140	2,573,572	

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33 Remedial Action										
33.01 Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
TOTAL Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
33.02 Sampling, & Testing										
33.02.06 Groundwater	1.00	EA	14,500	290	440	3,810	670	1,580	21,290	21291.88
33.02.11 Soil	1.00	EA	168,800	3,380	5,170	44,340	7,760	18,360	247,800	247796.91
33.02.13 Confirmatory-Soil	1.00	EA	150,850	3,020	4,620	39,620	6,930	16,400	221,440	221435.54
33.02.16 Soil Boring Grid	1.00	EA	58,020	1,160	1,780	15,240	2,670	6,310	85,170	85167.51
33.02.18 IDW from Soil Bor	1.00	EA	19,340	390	590	5,080	890	2,100	28,390	28389.17
TOTAL Sampling, & Testi	1.00	EA	411,510	8,230	12,590	108,080	18,910	44,750	604,080	604081.01
33.03 Site Work										
33.03.02 Clearing and Grub	3.00	ACR	4,400	90	130	1,160	200	480	6,460	2152.58
33.03.08 Survey Remediatio	1.00	ACR	27,870	560	850	7,320	1,280	3,030	40,910	40910.82
33.03.11 Erosion control	1.00	LF	211,850	4,240	6,480	55,640	9,740	23,040	310,980	310983.09
TOTAL Site Work	1.00	EA	244,120	4,880	7,470	64,120	11,220	26,540	358,350	358351.66
33.04 Fencing	1.00	EA	63,630	1,270	1,950	16,710	2,920	6,920	93,400	93400.60
33.05 Wastewater										
33.05. 1 Wastewater	1.00	EA	22,150	440	680	5,820	1,020	2,410	32,510	32508.19
TOTAL Wastewater	1.00	EA	22,150	440	680	5,820	1,020	2,410	32,510	32508.19
33.07 Air Stripping	1.00	EA	19,390	390	590	5,090	890	2,110	28,470	28466.90
33.10 Soil Remediation										
33.10.02 Sitework - Soils	1.00	EA	1,316,560	26,330	40,290	345,800	60,510	143,160	1,932,650	1932650.00
33.10.04 Drum Removal	1.00	EA	4,880	100	150	1,280	220	530	7,170	7170.29
33.10.06 Disposal:	1.00	EA	1,000,020	20,000	30,600	262,650	45,960	108,740	1,467,980	1467978.66
TOTAL Soil Remediation	1.00	EA	2,321,470	46,430	71,040	609,730	106,700	252,430	3,407,800	3407798.95
33.18 Confirmatory Soil Bo	1.00	EA	19,980	400	610	5,250	920	2,170	29,340	29336.15
33.26 Demobilization										
33.26.04 Decontaminate Equ	1.00	EA	12,190	240	370	3,200	560	1,330	17,890	17887.61

	QUANTY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33.26.06 Demobilization	1.00 EA	4,870	100	150	1,280	220	530	7,160	7155.04
TOTAL Demobilization	1.00 EA	17,060	340	520	4,480	780	1,860	25,040	25042.66
33.31 Remedial Design	1.00 EA	423,050	8,460	12,950	111,110	19,450	46,000	621,020	621019.20
33.33 Well Installation	1.00 EA	5,240	0	160	0	190	450	6,030	6027.73
TOTAL Remedial Action	1.00 EA	3,552,880	70,950	108,710	931,790	163,250	386,210	5,213,790	5213794.89

No errors detected...

* * * END OF ERROR REPORT * * *

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

SEAD-59
EXCAVATION/OFF-SITE DISPOSAL
Risk-based Cleanup Goals for
Trespasser Scenario

Designed By: Parsons ES
Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 10/11/01
Effective Date of Pricing: 10/03/96
Est Construction Time: 120 Days

Sales Tax: 7.0%

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The following is a summary of the activities that are presently included in Alternative .

Off-Site Disposal: Excavate/Off-site Disposal
- Mobilize, site prep, clear/grub, erosion control, and survey
- Excavate soils in Area 1, 2, 3, 4 and Others.
- Screen excavated soils to remove debris, drums, paint cans.
- Install 40 soil borings in a grid pattern in the Area south of the raod between Areas 2,3,4,Other to fill the data gap by confirming that there is no contamination in this area.
- Treat water by air stripping.
- Dispose of drums in off-site hazardous waste landfill and construction debris in off-site solid waste landfill.
- Dispose soils with concentrations > Cleanup Goals at off site landfill.
- Backfill excavations with excavated soils with concentrations < goals.
- Cover Area 1 with 2' vegetative cover.
- Cover areas south of the road with crushed stone.
- Demobilize
- Install 4 new monitoring wells
- Ground water monitoring for 5 years (costed separately)

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

The following list are the areas where there is the biggest potential for changes in cost due to uncertainties:

- Quantities of soil over cleanup goals could increase based on the results of the
confirmatory sampling done in the excavation.
- The quantities of soil requiring disposal as hazardous waste could increase based on the results of the confirmatory sampling done in the soil piles.

Contractor costs are calculated as a percentage of running total as
- 5 % for field office support
- 15 % for home office support
- 10 % for profit
- 4 %for bond

Owner's cost are calculated as a percentage of running total as
- 2 % for design contingency
- 3 % for escalation
- 25 % for construction contingency
- 3.5 % for other costs
- 8 % for construction management

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.5%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total, use	3.5%

33.01. Mobilization	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33. Remedial Action									
33.01. Mobilization									
USR AA Mobilization	1.00	EA	0	793	2,500	535	0	3,828	3827.72
33.02. Sampling, & Testing									
33.02.06. Groundwater									
Groundwater - from holding tanks									
HTW AA For Disposal: NYSDEC CLP TCL VOCs, volatile organics , groundwater (Severn Trent Lab 9/98) (Assume 1 sample for each tank)	15.00	EA	0	0	0	0	2,625	2,625	175.00
AFH AA For Disposal: NYSDEC CLP TAL SVOCs modified , groundwater, (Severn Trent Lab, 9/98) (Assume 1 sample per tank)	15.00	EA	0	0	0	0	5,550	5,550	370.00
AFH AA For Disposal: NYSDEC TAL - Inorganics, groundwater (Severn Trent Lab, 9/98) (Assume 1 sample per tank)	15.00	EA	0	0	0	0	2,325	2,325	155.00
33.02.11. Soil									
For disposal; TCLP analysis required for non hazardous landfill disposal. Assuming 1 sample every 150 cy: 23,025 cy x 1.40/150 = 215 x 1.2 = 260 samples									
HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	31,200	31,200	120.00
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	59,800	59,800	230.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	260.00	EA	0	0	0	0	31,200	31,200	120.00
33.02.13. Confirmatory-Soil - All Areas									
HTW AA Confirmatory: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample every 50 ft of wall adn floor or excavation.	156.00	EA	0	0	0	0	27,300	27,300	175.00

33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
AFH AA Confirmatory: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample every 50 ft of wall and floor of excavation.	156.00	EA	0	0	0	0	57,720	57,720	370.00
AFH AA Confirmatory: NYSDEC CLP TAL - Metals , soil (Severn Trent	156.00	EA	0	0	0	0	24,180	24,180	155.00
33.02.16. Soil Boring Grid South of Road from soil boring south of road to confirm no contamination between Areas 2,3,4, Others									
HTW AA Confirmatory: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	10,500	10,500	175.00
AFH AA Confirmatory: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	22,200	22,200	370.00
AFH AA Confirmatory: NYSDEC CLP TAL - Metals , soil (Severn Trent, 9/99) (Assume 1 sample per boring)	60.00	EA	0	0	0	0	9,300	9,300	155.00
33.02.18. IDW from Soil Borings									
HTW AA IDW: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample per drum.)	20.00	EA	0	0	0	0	3,500	3,500	175.00
AFH AA IDW: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample per drum.	20.00	EA	0	0	0	0	7,400	7,400	370.00
AFH AA IDW: NYSDEC CLP TAL - Metals , soil (Severn Trent - assume one sample per drum)	20.00	EA	0	0	0	0	3,100	3,100	155.00
33.03. Site Work									
33.03.02. Clearing and Grubbing									
AF AA Clearing, brush w/dozer & brush rake, light brush	3.00	ACR	48	1,298	1,887	0	0	3,185	1061.54
33.03.08. Survey Remediation Area Survey remediation area									
USR AA Survey remediation area	10.00	DAY	0	15,000	2,500	2,675	0	20,175	2017.50
33.03.11. Erosion control									
B MIL AA Silt Fence: Installation and materials high, polypropylene	16000	LF	3,360	80,000	8,000	25,680	0	113,680	7.11
B HTW AA Hay bales - stalked	16000	LF	5	2,720	0	17,120	0	19,840	1.24
B MIL AA Maintain silt fence and remove	16000	LF	107	2,720	0	17,120	0	19,840	1.24

	33.04. Fencing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
	33.04. Fencing									
MIL AA	Site dml, chain link fence, remove & salvage for reuse	2000.00	LF	103	2,600	0	0	0	2,600	1.30
MIL AA	Fence, CL scty, std FE-6, 6' high, no gates/signs	2000.00	LF	96	2,820	0	39,847	0	42,667	21.33
MIL AA	Fence, CL, set in conc, 6' H, indl, corner post, galv stl, 4" OD	4.00	EA	2	55	9	295	0	358	89.48
MIL AA	Fence, CL, double, 24' W, indl, gates, swing, 6' high	1.00	EA	0	0	0	435	0	435	435.38
	33.05. Wastewater									
	33.05. 1. Wastewater									
L MIL AA	Pump, cntfgl,6"D, horiz mtd, horiz splt, sgl stg,1500GPM,50HP	1.00	EA	0	0	0	10,767	0	10,767	10766.88
M HTW AA	21,000 Gal, Steel, hold tank stationary	4.00	EA	0	0	0	5,264	0	5,264	1316.10
	33.07. Air Stripping									
HTW AA	HTRW,PTTU,1'dia,14.5'pkng hgt, 30GPM,850CFM,FRP shell	1.00	EA	97	3,257	0	7,009	0	10,265	10265.47
AFH AA	HTRW,PTTU, >= 12' high, install air strip tower, 1'- 3' diam.	1.00	EA	91	3,035	226	0	0	3,261	3261.05
HTW AA	HTRW, PT opt, air flow switch (loss of air flow - motor failure)	1.00	EA	0	0	0	512	0	512	511.81
	33.10. Soil Remediation									
	33.10.02. Sitework - Soils Excavating Areas 1,2,3,4, Others Volumes are increased by 30% for expansion and 10% contingency. For weight calculations, the volume is increased by 10% only. All fill, topsoil, and seeding items for soil remediation are included in the Sitework - Soils category.									
USR AA	Excavate, stockpile, screen soi l (volumes used for estimate are	32925	CY	0	0	0	0	658,500	658,500	20.00
USR AA	Plastic sheeting for ground: 6mil polyethylene liner (1000sf	550000	SF	0	0	0	47,080	0	47,080	0.09
USR AA	Cover stockpiles w/ plastic sheeting: Plastic sheeting: 6mil polyethylene liner (1000sf / roll; 1 roll = $75)	550000	SF	0	0	0	47,080	0	47,080	0.09
MIL AA	Loam or topsoil, furnish & place, imported, 6" deep	6240.00	CY	550	16,661	8,674	121,718	0	147,052	23.57
AF AA	Fill, spread borrow w/dozer	14802	CY	178	5,329	9,621	0	0	14,950	1.01
AF	Compaction, steel wheel tandem roller, 5 ton	14802	CY	105	3,108	2,664	0	0	5,773	0.39
RSM AA	Seeding, athletic field mix, 8#/MSFpush spreader	70.20	MSF	70	1,775	0	3,125	0	4,899	69.79

33.10. Soil Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33.10.04. Drum Removal Approx. 20 drums in Area 1									
L MIL AA Excavator for drum removal at Level B	20.00	EA	2	323	445	0	0	768	38.40
L MIL AA Excavator for drum moving at Level B	20.00	EA	2	323	445	0	0	768	38.40
L MIL AA Level B breathing unit, suit, overboots, gloves	4.00	EA	0	0	2,000	0	0	2,000	500.00
33.10.06. Disposal: Disposal and Transportation of drums to hazardous waste landfill; disposal of debris and soil in solid waste landfill.									
HTW AA HW packaging, overpacks, 18"dia x 34"H, 16ga stl drum, 55gal, DOT 17C	20.00	EA	0	0	0	1,583	0	1,583	79.13
USR AA Drums/Paint Cans: Transportation of Drums by dedicated van	1.00	EA	0	0	0	0	546	546	545.70
USR AA Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management	20.00	EA	0	0	0	2,862	0	2,862	143.11
USR AA Extra fees for overpack use	20.00	EA	0	0	0	0	800	800	40.00
USR AA Debris: Transport and Dispose nonhaz waste, bulk solid waste	3799.00	TON	0	0	0	0	119,669	119,669	31.50
HTW AA Soils: Transport and Dispose nonhaz waste, bulk soil (Earthwatch, 7/00)	15196	TON	0	0	0	0	478,674	478,674	31.50
33.18. Confirmatory Soil Borings -									
B CIV AA Mob/Demob facility	2.00	EA	0	0	0	0	800	800	400.00
L AFH AA Decon Pad	1.00	EA	0	0	0	0	150	150	150.00
L AFH AA Decon Time	40.00	HR	0	0	0	0	6,000	6,000	150.00
M HTW AA HW packaging, DOT steel drums, 55 gal,	15.00	EA	0	0	0	0	750	750	50.00
L AFH AA Move drums	15.00	EA	0	0	0	0	375	375	25.00
L MIL AA Borings, auger holes in earth, no samples, 4" dia	280.00	LF	0	0	0	0	3,920	3,920	14.00
L HTW AA Split spoon sampling OD	16.00	LF	0	0	0	0	192	192	12.00
L AFH AA Standby Time	4.00	HR	0	0	0	0	600	600	150.00
L AFH AA Grout Boreholes	280.00	LF	0	0	0	0	1,680	1,680	6.00
33.26. Demobilization									
TOTAL Decontaminate Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821.20
TOTAL Demobilization	1.00	EA	0	528	2,500	500	0	3,528	3528.48

33.31. Remedial Design	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33.31. Remedial Design									
B HTW AA Remedial Design Workplan	1.00	EA	0	27,600	0	2,568	0	30,168	30168.00
B HTW AA Preliminary Design Report	1.00	EA	0	46,000	0	4,280	0	50,280	50280.00
B HTW AA Pre-final/Final Design Report, Including O&M Plan, S&A Plan, QA Plan, Contingency Plan, Waste	1.00	EA	0	118,000	0	7,490	0	125,490	125490.00
B HTW AA Remedial Action Workplan, including QA/QC Plan, H&S Plan	1.00	EA	0	47,500	0	2,675	0	50,175	50175.00
B HTW AA Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.00
33.33. Well Installation									
B CIV AA Mob/Demob facility	1.00	EA	0	0	0	0	600	600	600.00
L AFH AA Decon Pad	1.00	EA	0	0	0	0	150	150	150.00
B HTW AA Installation of Monitoring well threaded	4.00	EA	0	0	0	0	2,320	2,320	580.00
L HTW AA Monitor well, drilling, HS auger, 4.25" ID x 8" OD	40.00	LF	0	0	0	0	720	720	18.00
TOTAL SEAD-59			4,816	430,766	46,470	372,859	1,574,345	2,424,440	

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33 Remedial Action										
33.01 Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
TOTAL Mobilization	1.00	EA	5,290	110	160	1,390	240	570	7,760	7761.84
33.02 Sampling, & Testing										
33.02.06 Groundwater	1.00	EA	14,500	290	440	3,810	670	1,580	21,290	21291.88
33.02.11 Soil	1.00	EA	168,800	3,380	5,170	44,340	7,760	18,360	247,800	247796.91
33.02.13 Confirmatory-Soil	1.00	EA	150,850	3,020	4,620	39,620	6,930	16,400	221,440	221435.54
33.02.16 Soil Boring Grid	1.00	EA	58,020	1,160	1,780	15,240	2,670	6,310	85,170	85167.51
33.02.18 IDW from Soil Bor	1.00	EA	19,340	390	590	5,080	890	2,100	28,390	28389.17
TOTAL Sampling, & Testi	1.00	EA	411,510	8,230	12,590	108,080	18,910	44,750	604,080	604081.01
33.03 Site Work										
33.03.02 Clearing and Grub	3.00	ACR	4,400	90	130	1,160	200	480	6,460	2152.58
33.03.08 Survey Remediatio	1.00	ACR	27,870	560	850	7,320	1,280	3,030	40,910	40910.82
33.03.11 Erosion control	1.00	LF	211,850	4,240	6,480	55,640	9,740	23,040	310,980	310983.09
TOTAL Site Work	1.00	EA	244,120	4,880	7,470	64,120	11,220	26,540	358,350	358351.66
33.04 Fencing	1.00	EA	63,630	1,270	1,950	16,710	2,920	6,920	93,400	93400.60
33.05 Wastewater										
33.05. 1 Wastewater	1.00	EA	22,150	440	680	5,820	1,020	2,410	32,510	32508.19
TOTAL Wastewater	1.00	EA	22,150	440	680	5,820	1,020	2,410	32,510	32508.19
33.07 Air Stripping	1.00	EA	19,390	390	590	5,090	890	2,110	28,470	28466.90
33.10 Soil Remediation										
33.10.02 Sitework - Soils	1.00	EA	1,276,040	25,520	39,050	335,150	58,650	138,750	1,873,160	1873159.85
33.10.04 Drum Removal	1.00	EA	4,880	100	150	1,280	220	530	7,170	7170.29
33.10.06 Disposal:	1.00	EA	834,540	16,690	25,540	219,190	38,360	90,750	1,225,060	1225059.62
TOTAL Soil Remediation	1.00	EA	2,115,460	42,310	64,730	555,630	97,230	230,030	3,105,390	3105389.76
33.18 Confirmatory Soil Bo	1.00	EA	19,980	400	610	5,250	920	2,170	29,340	29336.15
33.26 Demobilization										
33.26.04 Decontaminate Equ	1.00	EA	12,190	240	370	3,200	560	1,330	17,890	17887.61

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33.26.06 Demobilization	1.00	EA	4,870	100	150	1,280	220	530	7,160	7155.04
TOTAL Demobilization	1.00	EA	17,060	340	520	4,480	780	1,860	25,040	25042.66
33.31 Remedial Design	1.00	EA	423,050	8,460	12,950	111,110	19,450	46,000	621,020	621019.20
33.33 Well Installation	1.00	EA	5,240	0	160	0	190	450	6,030	6027.73
TOTAL Remedial Action	1.00	EA	3,346,870	66,830	102,410	877,680	153,780	363,810	4,911,390	4911385.70

R2032: 331002 DEW01 Common fill Detail item has zero quantity - no costs reported

* * * END OF ERROR REPORT * * *

SUMMARY REPORTS SUMMARY PAGE

DETAILED ESTIMATE DETAIL PAGE

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

ANNUAL MONITORING COSTS
FOR SEMI-ANNUAL
GROUNDWATER MONITORING
SEAD - 59

Designed By: Parsons ES
Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 11/22/99
Effective Date of Pricing: 10/03/96

Sales Tax: 7.0%

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The scope of work for the contractors is summarized below.

· Sample 11 wells (total of 13 samples including 1 dup and 1 qa sample)for metals, TPH, SVOCs analyses.
· Assumptions: 2-person crew, 6 wells sampled per day locations
1 day for set-up, 1 day for de-mob, no air travel; 2 events per year, and metals, TPH, SVOC laboratory analyses.

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

The following list the areas where there is the biggest potential for changes in cost due to uncertainties:

· Time necessary to complete sampling may increase depending on the flow of water.
· This estimate does not include the potential for additional wells or the repair of existing wells.

Contractor costs are calculated as a percentage of running total as
0.5 % for field office support
10.0 % for home office support
10.0 % for profit
0.0 % for bond

Owner's cost are calculated as a percentage of running total as
0.0 % for design contingency
3.0 % for escalation
0.0 % for construction contingency
3.0 % for other costs
0.0 % for construction management

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.0%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%

Total, use	3.0%

	33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
	33. Remedial Action									
	33.02. Sampling, & Testing									
	33.02.01. Health and Safety									
HTW AA	Case of 25, disposable coveralls, Tyvek (Pine Environmental Services 9/98)	1.00	EA	0	0	0	115	0	115	114.69
USR AA	Poly Tyvek (case of 12) (Pine Environmental Services 9/98)	1.00	EA	0	0	0	74	0	74	73.83
HTW AA	First aid kits, 36 ingredients	1.00	EA	0	0	0	80	0	80	79.93
HTW AA	Eye prot, safety glasses	2.00	EA	0	0	0	11	0	11	5.62
M HTW AA	Latex Gloves (100/box) (Pine Environmental Services 9/98)	4.00	BX	0	0	0	42	0	42	10.43
USR AA	North Respirator Cartridges (2 per/pkg) (Pine Environmental Services 9/98)	2.00	PK	0	0	0	9	0	9	4.49
	33.02.02. Personnel									
AFH AA	Personnel per diem (2 people x 4 days x 2 events)	18.00	DAY	0	0	0	1,907	0	1,907	105.93
AFH AA	Car or van mileage charge	2000.00	MI	0	0	0	706	0	706	0.35
HTW AA	Daily rate, subcontracted	18.00	EA	0	0	0	0	12,240	12,240	680.00
	33.02.04. Sample Groundwater									
	Groundwater monitoring costs for one year are included in this estimate. Each monitoring well is sampled semi-annually for TAL metals.									
USR AA	Turbidimeter Rental (Pine Environmental Services 9/98)	2.00	WK	0	0	160	0	0	160	80.00
USR AA	Hydrolab Rental (Hydrolab Corp. 9/98)	2.00	WK	0	0	690	0	0	690	345.00
USR AA	Bladder Pump Rental (Marschalk Corporation 9/98)	2.00	WK	0	0	190	0	0	190	95.00
USR AA	Pump Controller Rental (Marschalk Corp. 9/98)	2.00	WK	0	0	300	0	0	300	150.00
USR AA	12-volt Compressor Rental (Marschalk Corp. 9/98)	2.00	WK	0	0	350	0	0	350	175.00
USR AA	Misc. Equipment Rental (Marschalk Corp. 9/98)	2.00	WK	0	0	65	0	0	65	32.50
USR AA	Thermo Environmental 580B (OVM) Rental (US Environmental, 12/98)	2.00	WK	0	0	400	0	0	400	200.00
USR AA	Teflon Tubing (1/4" ID x 3/8") (Pine Environmental Services 9/98)	1000.00	FT	0	0	0	2,675	0	2,675	2.68
USR AA	Isobutylene Calibration Gas (Pine Environmental Services 9/98)	2.00	EA	0	0	0	173	0	173	86.40
USR AA	pH4 Buffer Solution (Cole-Parmer Instrument Co. 9/98)	2.00	EA	0	0	0	22	0	22	11.24

33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR AA pH7 Buffer Solution (Cole-Parmer Instrument Co. 9/98)	2.00	EA	0	0	0	22	0	22	11.24
USR AA 700 Conductivity Solution (Cole-Parmer Instrument Co. 9/98)	2.00	EA	0	0	0	39	0	39	19.26
USR AA 2060 Conductivity Solution (Cole-Parmer Instrument Co. 9/98)	2.00	EA	0	0	0	39	0	39	19.26
HTW AA 32 oz HDPE bottle, 12/case (including packaging and	72.00	EA	0	0	0	2,372	0	2,372	32.95
HTW AA Custody seals (package of 10)	8.00	EA	0	0	0	126	0	126	15.75
HTW AA 1gal,4/case,safe trans can w/vermiculite	2.00	EA	0	0	0	58	0	58	29.21
AFH AA Packing Tape: Testing, packaging & shipping, per roll	8.00	EA	0	0	0	13	0	13	1.65
HTW AA Shipping coolers: Testing, packaging & shipping, 51# to 70# pkg, overnight dlvy	14.00	EA	0	0	0	0	1,096	1,096	78.27
AFH AA Testing, packaging & shipping, bag ice	100.00	EA	0	0	0	0	119	119	1.19
HTW AA 48 quart ice chest, cooler & ice chest	2.00	EA	0	0	0	0	55	55	27.62
33.02.07. Analysis of Groundwater									
AFH AA NYSDEC CLP TAL SVOCs(unit cost from Severn Trent Lab 9/98)	26.00	EA	0	0	0	0	9,620	9,620	370.00
AFH AA NYSDEC CLP TPH(unit cost from Severn Trent Lab 9/98)	26.00	EA	0	0	0	0	5,200	5,200	200.00
AFH AA TAL metals (NYSDEC CLP TAL Inorganics - unit cost from Severn Trent Lab 9/98)	26.00	EA	0	0	0	0	4,030	4,030	155.00
33.02.12. Disposal of IDW									
Disposal of Investigation Derived Wastes									
USR AA Disposal of purge water drums (1 drum of purge water for 2 rounds of sampling for 12 wells) (Price quoted by Waste Management Inc., 5/99. Includes 7% sales tax. Does NOT include transportation. Price quoted under assumption that drums contain oily liquid of low viscosity containing PAHs, metals (and does not contain PCBs).)	1.00		0	0	0	0	134	134	133.75

33.02. Sampling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
TOTAL ANNUAL MONITORING COSTS	0		0	2,155	8,483	32,494		43,132	

	QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CONTINGN	OTHER	CON MGMT	TOTAL COST	UNIT COST
33 Remedial Action										
33.02 Sampling, & Testing										
33.02.01 Health and Safety	1.00	EA	400	0	10	0	10	0	430	426.26
33.02.02 Personnel	1.00	EA	18,060	0	540	0	560	0	19,160	19161.89
33.02.04 Sample Groundwate	1.00	EA	10,900	0	330	0	340	0	11,570	11565.13
33.02.07 Analysis of Groun	1.00	EA	22,920	0	690	0	710	0	24,320	24318.53
33.02.12 Disposal of IDW	1.00	EA	160	0	0	0	10	0	170	172.55
TOTAL Sampling, & Testi	1.00	EA	52,450	0	1,570	0	1,620	0	55,640	55644.36
TOTAL Remedial Action	1.00	EA	52,450	0	1,570	0	1,620	0	55,640	55644.36

No errors detected...

* * * END OF ERROR REPORT * * *

No Backup Reports...

* * * END TABLE OF CONTENTS * * *