	ENGINEERING SCIENCE, INC.
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	<u>Memorandum</u>
October 12, 200	)] , , , , , , , , , , , , , , , , , , ,
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	Major David Sheets
То:	Major David Sheets
	Mr. Stephen Absolom
	Mr. Kevin Healy
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From:	Todd Heino
Carl is at	Cost Courses for SEAD 4 and SEAD 50
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:

- 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.
- Risk-based Cleanup Goals (RBCGs) Option No. 1 Soils with concentrations exceeding the RBCGs will be excavated and disposed. Cleanup goals were backcalculated based on a cancer risk of 1x10<sup>-6</sup> 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<sup>-6</sup> 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	NYSDEC	EPA SSLs	RBCG	RBCG
Concern (ug/kg)	TAGMs		Option No. 1	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:

- 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.
- New York State TAGMs The TAGMs for lead and chromium are represented by the 95<sup>th</sup> percentile of the background concentrations.
- 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	Average Background	New York State TAGMs	ERCG Option No. 1	ERCG Option No. 2
Concern (mg/kg)	Background	TACIVIS	NO. 1	NO. 2
Lead	17.7	24.8	167	1,671
Chromium	20.1	29.6	324	3,237
(Total)				

# 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

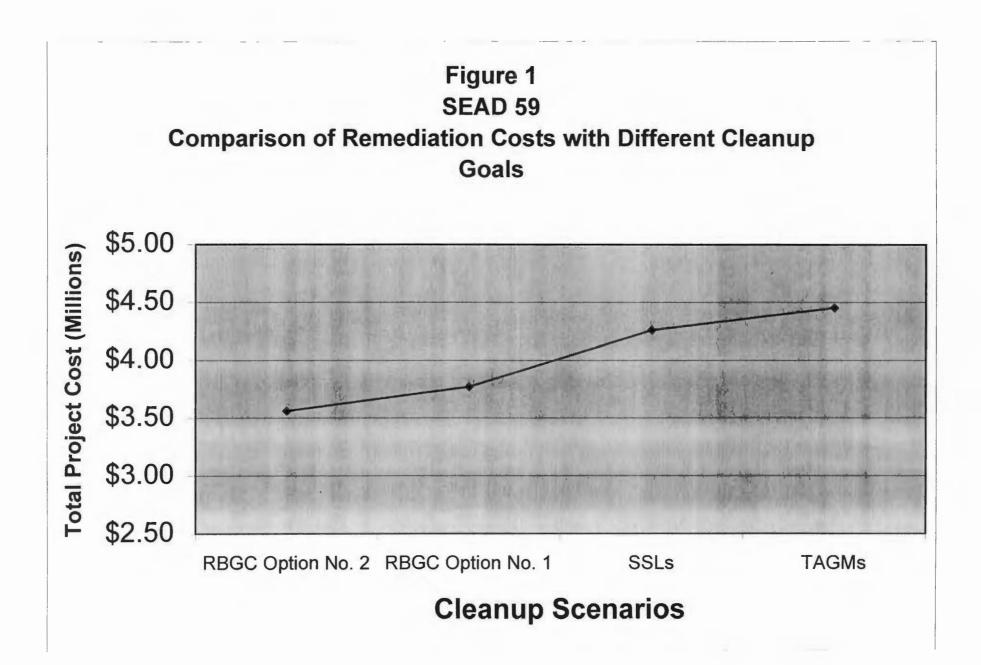
			Cleanu	p Goals	
-	Tasks	Proposed Risk- based Cleanup Goals Option No. 2	Proposed Risk- based Cleanup Goals Option No. 1	EPA Soil Screening Levels	New York State TAGMs
Constructio	on (1)				
	Mobilization	\$5,288	\$5,288	\$5,288	\$5,288
5	Sampling and Analysis	\$436,732	\$436,732	\$436,732	\$436,732
S	Site Work	\$307,744	\$307,744	\$307,744	\$307,744
۱	Wastewater	\$41,537	\$41,537	\$41,537	\$41,537
E	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					
F	Remedial Design	\$423,052	\$423,052	\$423,052	\$423,052
Operations	and Maintenance (2)				
F	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:

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(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%.



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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%

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#### 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.

Availiable Time (minutes)	Level 480	A Level 480	B Level 480	C Level D 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	300/480	370/480	410/480
	X100%	X100%	X100%	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%

Fri 12 Oct 2001 Tr Eff. Date 10/03/96 DETAILED ESTIMATE	i-Service Au PROJECT E Ave.Backgro	XOFF_: S		TIME 08:29:13 DETAIL PAGE 1					
33.01. Mobilization	QUANTY	Uom Manhol						TOTAL COST	UNIT COST
33. Remedial Action									
33.01. Mobilization									
USR AA Mobilization	1.00	EA	0 7	93	2,500	535	0	3,828	3827.72
33.02. Sampling, & Testing									
33.02.06. Sediment HTW AA For Disposal: TCLP, volatil organics (SW-846 Methods 1311&8240), soil (Severn Tre Lab, 9/99) (Assume 1 sample	nt	EA	0	0	0	0	2,400	2,400	120.00
every 150 cy) AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A soil (Severn Trent Lab, 9/99 (Assume 1 sample every 150 c	)	EA	0	0	0	0	4,600	4,600	230.00
AFH AA For Disposal: TCLP-Pest/PCB (SW-846 Methods 1311 & 8080)	s 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 La 9/99) (Assume 1 sample ever 150 cy)	20.00 & b,	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% Q		EA	0	0	0	0	14,700	14,700	175.00
USR AA Confirmatory: NYSDEC CLP TAL Inorganics, soil (Severn Tre Lab, 9/99) (Assume 1 test/1 LF + 20% for QC)	84.00 nt	EA	0	0	0	0	13,020	13,020	155.04
33.02.11. Soil HTW AA For Disposal: TCLP, volatil organics (SW-846 Methods 1311&8240), soil (Severn Tre Lab, 9/99) (Assume 1 sample	nt	EA	0	0	0	0	55,440	55,440	120.00
every 150 cy) AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A soil (Severn Trent Lab, 9/99 (Assume 1 sample every 150cy	)	EA	0	0	0	0	106, <b>26</b> 0	106,260	230.00
AFH AA For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 7470), soil (Severn Trent La 9/99) (Assume 1 sample ever 150cy)	462.00 & b,	EA	0	0	0	0	55,440	55,440	120.00

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33.02. Sampling, & Testing	QUANTY UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST	
USR AA Confirmatory: NYSDEC CLP TAL Inorganics, soil (Severn Tre Lab, 9/99) (Assume 1 test ev 100 lf + 20% QC)	410.00 EA	0						155.00	
33.03. Site Work									
33.03.02. Clearing and Gru 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 & br rake, light brush	ush 40.00 ACR	640	17,306	25,156	0	0	42,461	1061.54	
33.03.06. Roadways USR AA Grade 20ft wide roadway USR AA Roadway stone - 3" deep esl 25% of roadway		0	1,800 1,560	4,260 2,070		0 0	6,060 20,964	2.02 6.99	
33.03.08. Survey Remediati									
Survey remediatio USR AA Survey remediation area		0	30,000	5,000	5 <b>,3</b> 50	0	40,350	2017.50	
33.03.11. Erosion control B MIL AA Silt Fence: Installation an materials	d 15000 ∟F	3,150	75,000	7,500	24,075	0	106,575	7.11	
high, polypropylene 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 remo		101	2,550		-	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 Repor Including O&M Plan, S&A Plan QA Plan, Contingency Plan, Waste	t, 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 Pl	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" x 34"H, 16ga stl drum, 55gal DOT 17C		0	0	0	6,330	0	6,330	79.13	

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33.07. Building Remediation			MANHOUR				SUBCONTR	TOTAL COST	UNIT COS
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	ΕA	0	0	0	0	546	546	545.7
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	133.7
USR AA Extra fees for overpack use	80.00	EA	0	0	0	0	3,200	3,200	40.0
HTW AA Transport and Dispose haz waste	20.00	TON	0	0	0	0	2,340	2,340	117.0
, bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)	1000 00						4 000	1 000	1.0
USR AA Water treatment 33.09. Sediment Remediation	1000.00	GAL	0	0	0	0	1,000	1,000	1.0
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	20.0
USR AA Plastic sheeting for ground an d cover: 6mil polyethylene liner	75000	SF	0	0	0	6,420	0	6,420	0.0
	2076.00	CY	183	5,543	2,886	40,495	0	48,923	23.5
Transportation of sed				te landf	fill				
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	117.0
33.10. Soil Remediation									
33.10.02. Sitework - Surface S All fill, topsoil, ar the Sitework - Surfac	nd seedin			oil remed	diation are	e included	in		
L MIL AA Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	25952		0	0	0	0	519,040	519,040	20.0

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### Ave.Background Alternative Exc/Off-site Disposal 33. Remedial Action

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PROJECT EXOFF\_: SEAD-4 - OFF-SITE DISPOSAL

33.10.	So	il Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR	AA	Plastic sheeting for ground an d	86505	SF	0	0	0	7,405	0	7,405	0.09
MIL	AA	cover: 6mil polyethylene liner Loam or topsoil, furnish & place, imported, 6" deep	12976	СҮ	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
		Compaction, steel wheel tandem roller, 5 ton	12976		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 - Subsurfac	e Soils								
L MIL	AA	Excavate and stockpile (volumes used for estimate are 30%	22667	СҮ	0	0	0	0	453,340	453,340	20.00
USR	AA	greater than in-situ volumes) Plastic sheeting for ground an d	75556	SF	0	0	0	6,468	0	6,468	0.09
B MIL	AA	cover: 6mil polyethylene liner 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	4.6
AF		Fill, spread borrow w/dozer	20987	cv	252	7,555	13,642	0	0	21,197	1.0
AF		Compaction, steel wheel tandem roller, 5 ton	20987		149	4,407	3,778	0	0	8,185	0.39
		33.10.05. Sitework - Ditch So <sup>:</sup> All fill, topsoil, ar the Sitework - Surfac	nd seedi			oil remec	liation are	e included	in		
L MIL	AA	Excavate and stockpile (volumes used for estimate are 30% greater than in-situ volumes)	9109.00	СҮ	0	0	0	0	182,180	182,180	20.0
USR	AA	Plastic sheeting for ground an d	30363	SF	0	0	0	2,599	0	2,599	0.0
MIL	AA	cover: 6mil polyethylene liner Loam or topsoil, furnish &	4555.00	CY	402	12,162	6,331	88,850	0	107,344	23.5
USR	AA	place, imported, 6" deep 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	4.6
AF	AA	Fill, spread borrow w/dozer	4555.00	CY	55	1,640	2,961	0	0	4,601	1.0
AF		Compaction, steel wheel tandem roller, 5 ton	4555.00	CY	32	957	820	0	0	1,776	0.3
RSM	AA	Seeding, athletic field mix, 8#/MSFpush spreader	172.00	MSF	172	4,348	0	7,656	0	12,004	69.7

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## 33. Remedial Action

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PROJECT EXOFF : SEAD-4 - OFF-SITE DISPOSAL

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DETAILED ESTIMATE		Backgro			DETAIL PAGE 5					
33.10. Soil Remediation									TOTAL COST	UNIT COST
33.10.06. Disp	osal									
	portation of soil	l to ha:	zardo	us waste	landfill.	Assuming	that 25%	of		
HTW AA Transport and Di	spose haz waste	16010	TON	0	0	0	0	1,873,170	1,873,170	117.00
bulk solid, includes 6% disp fees (Earthwatch										
HTW AA Transport and Di waste, bulk	spose nonhaz	48029	TON	0	0	0	0	1,512,914	1,512,914	31.50
33.26. Demobilizat	ion									
TOTAL Decontaminate Ec	luipment	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	

Eff. Date 10/03/96		PROJECT EXC ve.Backgrour DJECT OWNER	nd Alternat	ive Exc/Of	f-site Disp	osal		SUMMA	RY PAGE 1
	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	<b>1</b> 10	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	569182.6
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	29579.8
33.03.06 Roadways	1.00 ACR	37,330	750	1,140	9,800	1,720	4,060	54,800	54799.2
33.03.08 Survey Remediatio	1.00 ACR	55,740	1,110	1,710	-	2,560	6,060	81,820	81821.6
33.03.11 Erosion control	1.00 LF	198,610	3,970	6,080	52,160	9,130	21,600	291,550	291546.6
TOTAL Site Work	1.00 EA	352,130	7,040	10,780	92,490	16,190	38,290	516,910	516906.9
33.06 Remedial Design	1.00 EA	423,050	0	12,690	0	15,250	36,080	487,070	487073.8
33.07 Building Remediation	1.00 EA	31,200	620	950	8,190	1,430	3,390	45,800	45799.2
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	203435.2
33.09.09 Disposal	1.00 EA	419,410	8,390	12,830	110,160	19,280	45,610	615,670	615669.8
TOTAL Sediment Remediat	1.00 EA	557,990	11,160	17,070	146,560	25,650	60,670	819,110	819105.1
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	1938307.3
33.10.04 Sitework - Subsur	1.00 EA	847,730		25,940		38,960	92,180	1,244,430	1244425.7
33.10.05 Sitework - Ditch	1.00 EA	463,480		14,180		21,300	50,400	680,360	680361.0
33.10.06 Disposal	1.00 EA	4,677,470	93,550	143,130	1,228,540	214,990	508,610	6,866,290	6866293.1
TOTAL Soil Remediation	1.00 EA	7,309,090	146,180	223,660	1,919,730	335,950	794,770	10,729,390	10729387.2
33.26 Demobilization									
33.26.04 Decontaminate Equ	1.00 EA	12,190	240	370	3,200	560	1,330	17,890	17887.6
33.26.06 Demobilization	1.00 EA	4,870	100	150		220	530	7,160	7155.0

Fri 12 Oct 2001 Eff. Date 10/03/96	Av	Service Auto PROJECT EXO ve.Backgroun DJECT OWNER	TIME 08:29:1						
	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

Fri 12 Oct 2001 Eff. Date 10/03/96	TIME 08:29:13			
ERROR REPORT		JECT EXOFF_: SEAD-4 - OFF-SITE DISPOSAL ackground Alternative Exc/Off-site Disposal	ERROR PAGE 1	
R2032: 330206	STLO8 Confirma	tory Detail item has zero quantity - no costs reported		
R2032: 330211	STLO8 Confirma	tory 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 \* \* \*

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No Backup Reports...

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TITLE PAGE 1

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%

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#### 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:

Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-4 - OFF-SITE DISPOSAL NYSDEC TAGM Alternative Exc/Off-site Disposal

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:

Level of Protection A - Productivity \_\_\_%
 Level of Protection B - Productivity \_\_\_%
 Level of Protection C - Productivity \_\_\_%
 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
Availiable Time (minutes)	480	480	480	480
Ion-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	300/480	370/480	410/480
	x100%	x100%	X100%	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%

Fri 12 Oct 2001 Eff. Date 10/03/96 DETAILED ESTIMATE

## Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-4 - OFF-SITE DISPOSAL NYSDEC TAGM Alternative Exc/Off-site Disposal 33. Remedial Action

DETAIL PAGE 1

01. Mot	bilization		M MANHOUR					TOTAL COST	UNIT CO
33. F	Remedial Action								
33	3.01. Mobilization								
JSR AA	Mobilization	1.00 E#	0	793	2,500	535	0	3,828	3827.
33	3.02. Sampling, & Testing								
	33.02.06. Sediment								
AA WTH	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	<b>N</b> 0	0	0	0	2,400	2,400	120
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 E/	A 0	0	0	0	4,600	4,600	230
AFH AA	For Disposal: TCLP-Pest/PCBs	20.00 E/	A 0	0	0	0	2,400	2,400	120
AFH AA	(SW-846 Methods 1311 & 8080), For Disposal: TCLP - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150 cy)	20.00 E/	A 0	0	0	0	2,400	2,400	120
AFH AA	Confirmatory: NYSDEC CLP-Pest/PCBs , soil (Severn Trent Lab, 9/99) (Assume 1 sample every 100 lf + 20% QC	84.00 E	A 0	0	0	0	14,700	14,700	175
USR AA	Confirmatory: NYSDEC CLP TAL Inorganics, soil (Severn Trent Lab, 9/99) (Assume 1 test/100 LF + 20% QC)	84.00 E	A 0	0	0	0	13,020	13,020	155
	33.02.11. Soil For Disposal: TCLP, volatile	195.00 E	A 0	0	0	0	23,400	23,400	120
	organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	175.00 2	, J	Ū	Ū	Ū	23,400	23,400	
AFH AA	Society (1960) For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)	195.00 E	A O	0	0	0	44,850	44,850	230
AFH AA	(NSGAME F Sample Clery Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every	195.00 E	A 0	0	0	0	23,400	23,400	120

Eff. Date 10/03/96 PROJECT EXOFF : SEAD-4 - OFF-SITE DISPOSAL DETAILED ESTIMATE NYSDEC TAGM Alternative Exc/Off-site Disposal DETAIL PAGE 2 33. Remedial Action LABOR EQUIPMNT MATERIAL SUBCONTR TOTAL COST 33.02. Sampling, & Testing QUANTY UOM MANHOUR LINIT COST \_\_\_\_\_ 84.00 EA 0 0 USR AA Confirmatory: NYSDEC CLP TAL 0 0 13.020 13.020 155.00 Inorganics, soil (Severn Trent Lab, 9/99) (Assume 1 test / 100 lf + 20% QC33.03. Site Work 33.03.02. Clearing and Grubbing 1,300 0 MIL AA Remove and dispose existing 1000.00 LF 52 n Ω 1,300 1.30 chain link fence: Site dml, chain link fence, remove & salvage for reuse 8,653 AF AA Clearing, brush w/dozer & brush 20.00 ACR 320 12,578 0 n 21,231 1061.54 rake, light brush 33.03.06. Roadways USR AA Grade 20ft wide roadway 3000.00 LF n 1,800 4,260 0 n 6,060 2.02 USR AA Roadway stone - 3" deep esl @ 3000.00 LF 0 1,560 2,070 17,334 n 20,964 6.99 25% of roadway 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 5500.00 LF 1,155 27,500 2,750 8,828 0 39,078 7.11 materials high, polypropylene 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 n 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 0 7,490 0 125,490 125490.00 B HTW AA Pre-final/Final Design Report, 1.00 EA 0 118,000 Including O&M Plan, S&A Plan, QA Plan, Contingency Plan, Waste 0 B HTW AA Remedial Action Workplan, 1.00 EA ٥ 47,500 0 2,675 50,175 50175.00 including QA/QC Plan, H&S Plan 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 47.00 CSF 8 190 15 13 0 218 4.63 within building: Cleanup, floor area, final 79.13 HTW HW packaging, overpacks, 18"dia 80.00 EA 0 0 n 6,330 0 6,330 x 34"H, 16ga stl drum, 55gal, DOT 17C

Tri-Service Automated Cost Engineering System (TRACES)

Fri 12 Oct 2001

TIME 08:31:08

## Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-4 - OFF-SITE DISPOSAL NYSDEC TAGM Alternative Exc/Off-site Disposal 33. Remedial Action

.07.	Building Remediation	QUANTY UOM		LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
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	545.7
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	133.7
USR	AA Extra fees for overpack use	80.00 EA	0	0	0	0	3,200	3,200	40.0
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	117.0
USR	R AA Water treatment	1000.00 GAL	. 0	0	0	0	1,000	1,000	1.0
	33.09. Sediment Remediation								
	33.09.04. Sitework							•	
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	20.0
USR	<pre>R AA Plastic sheeting for ground and cover: 6mil polyethylene liner (1000sf / roll; 1 roll = \$75) (Assume 1 pile or 150cy occupies 5000sf)</pre>	75000 SF	0	0	0	6,420	0	6,420	0.1
MIL		2076.00 CY	183	5,543	2,886	40,495	0	48,923	23.
	33.09.09. Disposal								
	Transportation of sed					0	207 445	707 /45	447
HTW	W AA Transport and Dispose haz waste	2595.00 10	0	0	0	0	303,615	303,615	117.
	, bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)								

Fri 12 Oct Eff. Date DETAILED E	10/03/96	Service Auto PROJECT EXO NYSDEC TAG	DFF_: SEA M Alternati	0-4 - OFF-	SITE DISPO -site Disp	SAL			IME 08:31:08 IL PAGE 4
33.10. So	il Remediation	QUANTY U						TOTAL COST	UNIT COST
33	3.10. Soil Remediation								
	33.10.02. Sitework - Surface								
	All fill, topsoil, the Sitework - Surf			soil remed	iation are	included	in		
L MIL AA	Excavate and stockpile (volume used for estimate are 30% greater than in-situ volumes)			0	0	0	275,980	275,980	20.00
USR AA	Plastic sheeting for ground a d	n 460000 SI	F O	0	0	39,376	0	39,376	0.09
MIL AA	cover: 6mil polyethylene liner Loam or topsoil, furnish & place, imported, 6" deep	6369.00 C	Y 562	17,005	8,853	124,234	0	150,092	23.57
USR AA	Common fill (6") - Material fo Backfill, includes cost of material (bank sand) and delivery (DeWitt 1999)	r 7515.00 TC	0 ИС	0	0	34,979	0	34,979	4.65
AF AA	Fill, spread borrow w/dozer	6369.00 C	Y 76	2,293	4,140	0	0	6,433	1.01
	Compaction, steel wheel tandem roller, 5 ton			1,337	1,146	0	0	2,484	0.39
RSM AA	Seeding, athletic field mix, 8#/MSFpush spreader	260.00 M	SF 260	6,573	0	11,573	0	18,146	69.79
L MIL AA	33.10.04. Sitework - Subsurf Excavate and stockpile (volume used for estimate are 30% greater than in-situ volumes)		Y O	0	0	0	92,740	92,740	20.00
USR AA	Plastic sheeting for ground a d		F 0	0	0	13,268	0	13,268	0.09
B MIL AA	cover: 6mil polyethylene liner Common fill (6") - Material for Backfill, includes cost of material (bank sand) and delivery (DeWitt 1999)		0 NO	0	0	23,505	0	23,505	4.65
AF AA	Fill, spread borrow w/dozer	4280.00 C	Y 51	1,541	2,782	0	0	4,323	1.01
AF AA	Compaction, steel wheel tandem roller, 5 ton	4280.00 C	Y 30	899	770	0	0	1,669	0.39
	33.10.05. Sitework - Ditch S All fill, topsoil,	and seeding		soil remed	liation are	e included	in		
L MIL AA	the Sitework - Surf Excavate and stockpile (volume used for estimate are 30%			0	0	0	117,480	117,480	20.00
USR AA	greater than in-situ volumes) Plastic sheeting for ground a d	in 195000 S	F O	0	0	16,692	0	16,692	0.09
MIL AA	cover: 6mil polyethylene liner Loam or topsoil, furnish & place, imported, 6" deep	2711.00 C	Y 239	7,238	3,768	52,881	0	63,888	23.57

			GM A	_ lternativ		SITE DISPC -site Disp n			DETA	IL PAGE 5
5.10. Sc	bil Remediation	QUANTY	UOM I	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR AA	A 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	A Fill, spread borrow w/dozer	2711.00	CY	33	976	1,762	0	0	2,738	1.01
	A Compaction, steel wheel tandem roller, 5 ton	2711.00	CY	19	569	488	0	0	1,057	0.3
RSM AA	A Seeding, athletic field mix, 8#/MSFpush spreader	110.00	MSF	110	2,781	0	4,896	0	7,677	69.7
	<b>33.10.06.</b> Disposal Transportation of so Assuming that 25% of				landfill					
HTW AA	A 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	117.0
HTW AA	A Transport and Dispose nonhaz waste, bulk	21038	TON	0	0	0	0	662,697	662,697	31.5
7	33.26. Demobilization									
	L 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	3528.4
TOTA	SEAD-4			3.182					3,387,979	

Tri-Service Automated Cost Engineering System (TRACES)

Fri 12 Oct 2001

ff.Date 10/03/96	**	PROJECT EXC Nysdec tage Project owner	SUMMARY PAGE 1						
	QUANTY UO	M CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COS
3 Remedial Action									
3.01 Mobilization	1.00 EA	5,290	110	160	1,390	240	570	7,760	7761.8
TOTAL Mobilization	1.00 EA	5,290	110	160	1,390	240	570	7,760	7761.8
3.02 Sampling, & Testing									
3.02.06 Sediment	1.00 EA	54,590	1,090	1,670	14,340	2,510	5,940	80,140	80138.5
3.02.11 Soil	1.00 EA		2,890			6,650	15,720	212,250	212249.6
TOTAL Sampling, & Testi	1.00 EA	199,180	3,980	6,090	52,310	9,160	21,660	292,390	292388.1
3.03 Site Work									
3.03.02 Clearing and Grub	3.00 AC	R 31,120	620	950	8,170	1,430	3,380	45,690	15229.
3.03.06 Roadways	1.00 AC	R 37,330	750	1,140	9,800	1,720	4,060	54,800	54799.
3.03.08 Survey Remediatio	1.00 AC		560	850		1,280	3,030	40,910	40910.
3.03.11 Erosion control	1.00 LF	72,820	1,460	2,230	19,130	3,350	7,920	106,900	106900.
TOTAL Site Work	1.00 EA	169,150	3,380	5,180	44,430	7,770	18,390	248,300	248298.
3.04 Remedial Design	1.00 EA	423,050	0	12,690	0	15,250	36,080	487,070	487073.
3.07 Building Remediation	1.00 EA		620	950	8,190	1,430	3,390	45,800	45799.
3.09 Sediment Remediation									
3.09.04 Sitework	1.00 EA	138,580	2,770	4,240	36,400	6,370	15,070	203,440	203435.
3.09.09 Disposal	1.00 EA		8,390	12,830	110,160	19,280	45,610	615,670	615669.
TOTAL Sediment Remediat	1.00 EA	557,990	11,160	17,070	146,560	25,650	60,670	819,110	819105.
3.10 Soil Remediation									
3.10.02 Sitework - Surfac	1.00 EA	728,660	14,570	22,300	191,380	33,490	79,230	1,069,640	1069642.
3.10.04 Sitework - Subsur	1.00 EA		3,740	5,730	49,160	8,600	20,350	274,780	274777.
3.10.05 Sitework - Ditch	1.00 EA		6,200			14,250	33,710	455,090	455091.
3.10.06 Disposal	1.00 EA	2,048,890	40,980	62,700	538,140	94,170	222,790	3,007,670	3007666.
TOTAL Soil Remediation	1.00 EA	3,274,750	65,500	100,210	860,110	150,520	356,090	4,807,180	4807177.
3.26 Demobilization									
3.26.04 Decontaminate Equ	1.00 EA	12,190	240	370	3,200	560	1,330	17,890	17887.
3.26.06 Demobilization	1.00 EA		100		1,280	220	530	7,160	7155.

Fri 12 Oct 2001 Eff. Date 10/03/96	F	ervice Automa PROJECT EXOFI NYSDEC TAGM / NECT OWNER SU		TIME 08:31:08 SUMMARY PAGE 2					
	QUANTY UOM	CONTRACT I	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

Fri 12 Oct 2001 Eff. Date 10/03/96	TIME 08:31:08				
ERROR REPORT	$\overline{I}$				
R2032: 330206 STL0	3 Confirmatory Detail item has zero quantity - no costs reported				
R2032: 330211 STL0	3 Confirmatory Detail item has zero quantity - no costs reported				
R2032: 330904 0293	2 0010 Seeding, ath Detail item has zero quantity - no costs reported				

\* \* \* END OF ERROR REPORT \* \* \*

## Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-4 - OFF-SITE DISPOSAL NYSDEC TAGM Alternative Exc/Off-site Disposal

SUMMARY REPORTS SUMMARY PAGE	
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No Backup Reports...

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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%

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TITLE PAGE 2

#### 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

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#### 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.

Availiable Time (minutes) Non-Productive Time (minutes):	Level 480	A Level 480	B Level 480	C Level D 480
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)		300	370	410
riodacerve rime (mrnacesy	100	200	510	410
Productivity:	160/480	300/480	370/480	410/480
	X100%	X100%	X100%	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

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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%

Fri 12 Oct 2001 Eff. Date 10/03/96 DETAILED ESTIMATE	PROJECT E	Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF_: SEAD-4 - OFF-SITE DISPOSAL Risk-Based Alternative 1 Exc/Off-site Disposal 33. Remedial Action						
33.01. Mobilization	QUANTY	UOM MANHOUR	LABOR	EQUIPMNT	MATERIAL		TOTAL COST	UNIT COST
33. Remedial Action								
33.01. Mobilization USR AA Mobilization	1.00	EA O	793	2,500	535	0	3,828	3827.7
33.02. Sampling, & Testin	g							
33.02.06. Sediment								
HTW AA For Disposal: TCLP, vo organics (SW-846 Method 1311&8240), soil (Sever Lab, 9/99) (Assume 1 s	n Trent	EA O	0	0	0	2,400	2,400	120.0
every 150 cy) AFH AA For Disposal: TCLP-SVO (SW-846 Methods 1311 & soil (Severn Trent Lab, (Assume 1 sample every	8270A), 9/99)	EA O	0	0	0	4,600	4,600	230.0
AFH AA For Disposal: TCLP-Pes (SW-846 Methods 1311 &	t/PCBs 20.00	EA 0	0	0	0	2,400	2,400	120.0
AFH AA For Disposal: TCLP - M (SW-846 Methods 1311 & 7470), soil (Severn Tre 9/99) (Assume 1 sample 150 cy)	etals 20.00 6010 & nt Lab,	EA O	0	0	0	2,400	2,400	120.0
AFH AA Confirmatory: NYSDEC CLP-Pest/PCBs, soil (S Trent Lab, 9/99) (Assu sample every 100 lf +	me 1	EA O	0	0	0	14,700	14,700	175.0
USR AA Confirmatory: NYSDEC CL Inorganics, soil (Sever Lab, 9/99) (Assume 1 t LF + 20% for QC)	P TAL 84.00 n Trent	EA O	0	0	0	13,020	13,020	155.0
33.02.11. Soil HTW AA For Disposal: TCLP, vo organics (SW-846 Method 1311&8240), soil (Sever Lab, 9/99) (Assume 1 s every 150 cy)	s n Trent	EA O	0	0	0	6,240	6,240	120.0
AFH AA For Disposal: TCLP-SVO (SW-846 Methods 1311 & soil (Severn Trent Lab, (Assume 1 sample every	8270A), 9/99)	EA O	0	0	0	11,960	11,960	230.0
AFH AA For Disposal: TCLP - M (SW-846 Methods 1311 & 7470), soil (Severn Tre 9/99) (Assume 1 sample 150cv)	etals 52.00 6010 & nt Lab,	EA O	0	. 0	0	6,240	6,240	120.00

150cy)

TIME 08:25:06

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### Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-4 - OFF-SITE DISPOSAL Risk-Based Alternative 1 Exc/Off-site Disposal 33. Remedial Action

DETAIL PAGE 2

3.02.		npling, & Testing	QUANTY			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	3.03. Site Work									
		33.03.02. Clearing and Grubbir	ng								
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									
		Grade 20ft wide roadway Roadway stone - 3" deep esl @ 25% of roadway	3000.00 3000.00		0 0	1,800 1,560	4,260 2,070	0 17,334	0 0	6,060 20,964	2.02
		33.03.08. Survey Remediation /									
		Survey remediation a		~ • • •	•	40.000					0047 5
USR	AA	Survey remediation area	8.00	DAY	0	12,000	2,000	2,140	0	16,140	2017.50
B MIL		materials	5000.00	LF	1,050	25,000	2,500	8,025	0	35,525	7.1
		high, polypropylene	5000 00		2	050	0	F 750	0	( 200	4.2
		Hay bales - stalked	5000.00		2	850	0	5,350	0	6,200	1.2
B MIL	AA	Maintain silt fence and remove	5000.00	Lŀ	34	850	0	5,350	0	6,200	1.2
		3.06. Remedial Design									
		Remedial Design Workplan	1.00			27,600			0		30168.0
		Preliminary Design Report	1.00		0	46,000	0		0		50280.0
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	125490.0
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	50175.0
B HTW	AA	Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.0
	3	3.07. Building Remediation									
MIL	AA	Clean up hazardous material within building: Cleanup,	47.00	CSF	8	190	15	13	0	218	4.6
HTW		floor area, final 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	79.1

### Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-4 - OFF-SITE DISPOSAL Risk-Based Alternative 1 Exc/Off-site Disposal 33. Remedial Action

DETAIL PAGE 3

ding Remediation					EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT CO
Waste Management, Inc. 5/99. Includes 7% NY tax. Does not		ΕA	0	0	0	0	546	546	545.
	80.00	DR	0	0	0	0	10,700	10,700	133.
Extra fees for overpack use	80.00	ΕA	0	0	0	0	3,200	3,200	40.
Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees	20.00	TON	0	0	0	0	2,340	2,340	117.
	1000.00	GAL	0	0	0	0	1,000	1,000	1.
	2249.00	CY	0	0	0	0	44,980	44,980	20
greater than in-situ volumes)									
d	75000	SF	0	0	0	6,420	0	6,420	0
Loam or topsoil, furnish & place, imported, 6" deep	2076.00	CY	183	5,543	2,886	40,495	0	48,923	23
33.09.09. Disposal				the lends					
Transport and Dispose haz waste ,				0	0	0	303,615	303,615	117
disposal taxes & fees (Earthwatch, 10/99)									
.10. Soil Remediation									
		ng i	tems for so	oil remed	diation ar	e included	in		
			egory. O	0	0	0	77,560	77,560	20
	Transportation of drums by dedicated van (Price quoted by Waste Management, Inc. 5/99. Includes 7% NY tax. Does not include overpack.) 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).) Extra fees for overpack use Transport and Dispose haz waste foulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99) Water treatment .09. Sediment Remediation 33.09.04. Sitework Excavate and stockpile (volumes) Plastic sheeting for ground an d cover: 6mil polyethylene liner Loam or topsoil, furnish & place, imported, 6" deep 33.09.09. Disposal Transport and Dispose haz waste , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99) .10. Soil Remediation	<pre>Image of the set of the set</pre>	<pre>Inansportation of drums by 1.00 EA dedicated van (Price quoted by Waste Management, Inc. 5/99. Includes 7% NY tax. Does not include overpack.) Disposal of drums (Price quoted 80.00 DR 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).) Extra fees for overpack use 80.00 EA Transport and Dispose haz waste 20.00 TON pulk solid, includes 6% disposal taxes &amp; fees (Earthwatch, 10/99) Water treatment 1000.00 GAL OP. Sediment Remediation 33.09.04. Sitework Excavate and stockpile (volumes 2249.00 CY used for estimate are 30% greater than in-situ volumes) Plastic sheeting for ground an 75000 SF d cover: 6mil polyethylene liner Loam or topsoil, furnish &amp; 2076.00 CY place, imported, 6" deep 33.09.09. Disposal Transportation of sediment to ha Transport and Dispose haz waste 2595.00 TON , bulk solid, includes 6% disposal taxes &amp; fees (Earthwatch, 10/99) .10. Soil Remediation 33.10.02. Sitework - Surface Soils All fill, topsoil, and seeding i the Sitework - Surface Soils cat Excavate and stockpile (volumes 3878.00 CY</pre>	<pre>(ransportation of drums by 1.00 EA 0 dedicated van (Price quoted by Vaste Management, Inc. 5/99. Includes 7% NY tax. Does not include overpack.) Disposal of drums (Price quoted 80.00 DR 0 Dy Waste Management Inc., 5/99. Includes 7% sales tax. Does Vol include transportation. Drice quoted under assumption that drums contain oily liquid of low viscosity containing PAHs, metals (and does not contain PCBs).) Extra fees for overpack use 80.00 EA 0 Transport and Dispose haz waste 20.00 TON 0 , Dulk solid, includes 6% disposal taxes &amp; fees (Earthwatch, 10/99) Water treatment 1000.00 GAL 0 .09. Sediment Remediation 33.09.04. Sitework Excavate and stockpile (volumes 2249.00 CY 0 used for estimate are 30% greater than in-situ volumes) Plastic sheeting for ground an 75000 SF 0 d cover: 6mil polyethylene liner Loam or topsoil, furnish &amp; 2076.00 CY 183 place, imported, 6" deep 33.09.09. Disposal Transportation of sediment to hazardous wase Transport and Dispose haz waste 2595.00 TON 0 , Dulk solid, includes 6% disposal taxes &amp; fees (Earthwatch, 10/99) .10. Soil Remediation 33.10.02. Sitework - Surface Soils All fill, topsoil, and seeding items for so the Sitework - Surface Soils category. Excavate and stockpile (volumes 3878.00 CY 0 </pre>	<pre>irransportation of drums by 1.00 EA 0 0 dedicated van (Price quoted by aaste Management, Inc. 5/99. includes 7% NY tax. Does not include overpack.) Disposal of drums (Price quoted 80.00 DR 0 0 ) Disposal of drums (Price quoted 80.00 DR 0 0 ) Disposal of drums (Price quoted 80.00 DR 0 0 ) Disposal of drums (Price quoted 80.00 DR 0 0 ) Disposal of drums (Price quoted 80.00 DR 0 0 ) Disposal of drums (Price quoted 80.00 DR 0 0 ) Disposal of drums (Price quoted 80.00 DR 0 0 ) Disposal of drums (Price quoted 80.00 DR 0 0 ) Disposal of drums (Price quoted 80.00 DR 0 0 ) Disposal of drums (Price quoted 80.00 DR 0 0 ) Disposal of drums contain oily liquid Di low viscosity containing 'AHs, metals (and does not contain PCBs).) :xtra fees for overpack use 80.00 EA 0 0 Iransport and Dispose haz waste 20.00 TON 0 0 ; Dulk solid, includes 6% disposal taxes &amp; fees (Earthwatch, 10/99) /// Aater treatment 1000.00 GAL 0 0 Do do Disposal famediation 33.09.04. Sitework Excavate and stockpile (volumes 2249.00 CY 0 0 do do Disposal in the situ volumes) Plastic sheeting for ground an 75000 SF 0 0 do cover: 6mil polyethylene liner Loam or topsoil, furnish &amp; 2076.00 CY 183 5,543 place, imported, 6" deep 33.09.09. Disposal Transport and Dispose haz waste 2595.00 TON 0 0 ; Dulk solid, includes 6% disposal taxes &amp; fees (Earthwatch, 10/99) .10. Soil Remediation 33.10.02. Sitework - Surface Soils All fill, topsoil, and seeding items for soil remer the Sitework - Surface Soils All fill, topsoil, and seeding items for soil remer the Sitework - Surface Soils category. Excavate and stockpile (volumes 3878.00 CY 0 0 </pre>	Transportation of drums by 1.00 EA 0 0 0 dedicated van (Price quoted by Waste Management, Inc. 5/99. Includes 7% NY tax. Does not include orpack.) Disposal of drums (Price quoted 80.00 DR 0 0 0 y Waste Management Inc., 5/99. Include transportation. Price quoted under assumption that drums contain oily liquid of low viscosity containing PAHs, metals (and does not contain PCBs).) Extra fees for overpack use 80.00 EA 0 0 0 , valk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99) Water treatment 1000.00 GAL 0 0 0 .09. Sediment Remediation 33.09.04. Sitework Excavate and stockpile (volumes 2249.00 CY 0 0 used for estimate are 30% greater than in-situ volumes) Plastic sheeting for ground an 75000 SF 0 0 d cover: 6mil polyethylene liner Loam or topsoil, furnish & 2076.00 CY 183 5,543 2,886 place, imported, 6" deep 33.09.09. Disposal Transportation of sediment to hazardous waste landfill Transport and Dispose haz waste 2595.00 TON 0 0 , bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99) .10. Soil Remediation 33.10.02. Sitework - Surface Soils All fill, topsoil, and seeding items for soil remediation ar the Sitework - Surface Soils All fill, topsoil, and seeding items for soil remediation ar the Sitework - Surface Soils category. Excavate and stockpile (volumes 3878.00 CY 0 0 0	<pre>iransportation of drums by 1.00 EA 0 0 0 0 dedicated van (Price quoted by aste Management, Inc. 5/99. includes 7% witax. Does not include 7% sales tax. Does NOT include transportation. Price quoted under assumption that drums contain oily liquid of low viscosity containing ANAs, metals (and does not contain PCBs).) Extra fees for overpack use 80.00 EA 0 0 0 0 Advis, metals (and does not contain PCBs).) Extra fees for overpack use 80.00 EA 0 0 0 0 Advis, metals (and does not contain PCBs).) Extra fees for overpack use 80.00 EA 0 0 0 0 Advis, metals (and does not contain PCBs).) Extra fees for overpack use 80.00 EA 0 0 0 0 Advis, metals (and does not contain PCBs).) Extra fees for overpack use 80.00 EA 0 0 0 0 Advis, metals fees (Earthwatch, 10/99) Wate treatment 1000.00 GAL 0 0 0 0 Advis treatment 1000.00 GAL 0 0 0 0 Advis treatment 2000 EF 0 0 0 6,420 Advis treatment 2076.00 CY 183 5,543 2,886 40,495 place, imported, 6" deep 33.09.0. Disposal Transport and Dispose haz waste 2595.00 TON 0 0 0 Advisor to a source of the second second</pre>	<pre>iransportation of drums by 1.00 EA 0 0 0 0 546 dedicated van (Price quoted by Waste Management, Inc. 5/99. Includes 7X states tax. Does of urums (Price quoted &amp; 80.00 DR 0 0 0 0 0 10,700 by Waste Management Inc., 5/99. Includes 7X sales tax. Does of include ransportation. Price quoted under assumption that drums contain oily liquid of low viscosity containing PANs, metals (and does not contain PCBs).) Extra fees for overpack use 80.00 EA 0 0 0 0 3,200 Fransport and Dispose haz waste 20.00 TON 0 0 0 0 2,340 Julk solid, includes 6% Jisposal taxes &amp; fees (Earthwatch, 10/99) Vater treatment 1000.00 GAL 0 0 0 0 1,000 Julk solid, inclumes) Plastic sheeting for ground an 75000 SF 0 0 0 6,420 0 Julk solid, furnish &amp; 2076.00 CY 183 5,543 2,886 40,495 0 place, imported, 6<sup>rd</sup> deep 33.09.09. Disposal Transportation of sediment to hazardous waste landfill Transport and Dispose haz waste 2595.00 TON 0 0 0 303,615 Julk solid, includes 6% Jisposal taxes &amp; fees (Earthwatch, 10/99) Julk solid, includes 6% Jisposal taxes &amp; July A July</pre>	<pre>iransportation of drums by 1.00 EA 0 0 0 0 546 546 dedicated van (Price quoted by aster Management, Inc. 5/99. includes 7% NY tax. Does not include overpack.) includes 7% NY tax. Does not include ransportation. Price quoted 80.00 DR 0 0 0 0 10,700 10,700 Water Management Inc., 5/99. Includes 7% aster Management Inc., 5/99. Includes Includes 6% Includes Includes 6% Includes Inc</pre>

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-4 - OFF-SITE DISPOSAL Risk-Based Alternative 1 Exc/Off-site Disposal 33. Remedial Action

3.10.	So	il Remediation		MOU	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
USR	۵۵	Plastic sheeting for ground an	129270	SF	0	0	0	11,066	0	11,066	0.0
UUK	~~	d cover: 6mil polyethylene liner					·		Ū	11,000	010
MIL	AA	Loam or topsoil, furnish & place, imported, 6" deep	1790.00	CY	158	4,779	2,488	34,916	0	42,183	23.5
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	4.6
AF	AA	Fill, spread borrow w/dozer	1790.00	CY	21	644	1,164	0	0	1,808	1.0
		Compaction, steel wheel tandem roller, 5 ton	1790.00	CY	13	376	322	0	0	698	0.3
RSM	AA	Seeding, athletic field mix, 8#/MSFpush spreader	73.00	MSF	73	1,845	0	3,249	0	5,095	69.7
		33.10.04. Sitework - Subsurfac	ce 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	20.0
USR	AA	Plastic sheeting for ground an	50000	SF	0	0	0	4,280	0	4,280	0.
		cover: 6mil polyethylene liner									
3 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.
AF	AA		1430.00	CY	17	515	930	0	0	1,444	1.
AF	AA	Compaction, steel wheel tandem roller, 5 ton	1430.00	CY	10	300	257	0	0	558	0.
		33.10.05. Sitework - Ditch So All fill, topsoil, a		ng i	tems for so	oil remed	liation are	e included	in		
		the Sitework - Surfa	ce Soils	cat	egory.						
L MIL	AA	Excavate and stockpile (volumes used for estimate are 30%	1013.00	CY	0	0	0	0	20,260	20,260	20.
USR	AA	greater than in-situ volumes) Plastic sheeting for ground an d	35000	SF	0	0	0	2,996	0	2,996	0.
		cover: 6mil polyethylene liner									
		Loam or topsoil, furnish & place, imported, 6" deep	467.00	CY	41	1,247	649	9,109	0	11,005	23.
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.
AF	AA	Fill, spread borrow w/dozer	467.00	CY	6	168	304	0	0	472	1.
		Compaction, steel wheel tandem roller, 5 ton	467.00	CY	3	98	84	0	0	182	0.
RSM	AA	Seeding, athletic field mix, 8#/MSFpush spreader	19.00	MSF	19	480	0	846	0	1,326	69.

Fri 12 Oct 20 Eff. Date 10			comated Cost	-	- /			т	IME 08:25:06
DETAILED ESTI			Alternative		-site Disp			DETA	IL PAGE 5
33.10. Soil R	Remediation							TOTAL COST	UNIT COST
3	33.10.06. Disposal Transportation of so	il to haza	ardous waste	e landfill.	Assuming	that 25%	of		
, bul	soil is hazardous. ansport and Dispose haz waste lk solid, cludes 6% disposal taxes &	1858.00 1 ,	ON O	0	0	0	217,386	217,386	117.00
HTW AA Tra	es (Earthwatch, 10/99) ensport and Dispose nonhaz ste, bulk	5573.00 1	'ON O	0	0	0	175,550	175,550	31.50
33.26	6. Demobilization								
TOTAL Dec	contaminate Equipment	1.00 E	A 0	1,321	5,000	2,500	0	8,821	8821.20
TOTAL Dem	nobilization	1.00 E	A 0	528	2,500	500	0	3,528	3528.48
TOTAL SEA	AD - 4		1,961	356,644	40,619	200,868	960,446	1,558,576	

Eff. Date 10/03/96	R	PROJECT EXC isk-Based #	DFF_: SEA	ND-4 - OFF- e 1 Exc/Off	ng System ( SITE DISPOS -site Dispo Rounded to	AL sal			IME 08:25:06 RY PAGE 1
	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 <b>,3</b> 90	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		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		12,830		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	<b>53,</b> 780	9,410	22,270	300,600	300600.67
33.10.04 Sitework - Subsur	1.00 EA	62,340				2,870	6,780		91510.68
33.10.05 Sitework - Ditch	1.00 EA	53,610		1,640	14,080	2,460	, 5,830		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			•	220	530		7155.04

Fri 12 Oct 2001 Eff. Date 10/03/96	ł	Service Auto PROJECT EXO Risk-Based A DJECT OWNER	FF_: SEA lternative	D-4 - OFF- 1 Exc/Off	SITE DISPOS -site Dispo	AL sal		-	IME 08:25:06 RY PAGE 2
	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

Fri 12 Oct 2001		Tri-Service Automated Cost Engineering System (TRACES)	TIME 08:25:06
Eff. Date 10/03/96 ERROR REPORT		PROJECT EXOFF_: SEAD-4 - OFF-SITE DISPOSAL Risk-Based Alternative 1 Exc/Off-site Disposal	ERROR PAGE 1
D2032. 330206	STI 08	Confirmatory Detail item has zero quantity - no costs reported	

R2032: 330206	SILU8	contirmatory	Detail	item nas 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 \* \* \*

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SUMMARY	REPORTS	SUMMARY PAGE
PROJECT	OWNER SUMMARY - SUBSYSTM	1
DETAILED	ESTIMATE	DETAIL PAGE
33. Rem	edial Action	
01.	Mobilization	1
02.	Sampling, & Testing	
	06. Sediment	1
	11. Soil	1
03.	Site Work	
	02. Clearing and Grubbing	2
	06. Roadways	2
	08. Survey Remediation Area	2
	11. Erosion control	2
06.	Remedial Design	2
07.	Building Remediation	2
09.	Sediment Remediation	
	04. Sitework	3
	09. Disposal	3
10.	Soil Remediation	
	02. Sitework - Surface Soils	
	04. Sitework - Subsurface Soils	4
	05. Sitework - Ditch Soils	4
	06. Disposal	5
26.	Demobilization	
	04. Decontaminate Equipment	5
	06. Demobilization	5

No Backup Reports...

\* \* \* END TABLE OF CONTENTS \* \* \*

TITLE PAGE 1

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%

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#### 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 %
- 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.

Availiable Time (minutes)	Level 480	A Level 480	B Level 480	C Level D 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%

Eff. Date 10/03/96 DETAILED ESTIMATE	Risk-Based Al	PROJECT EXOFF_: SEAD-4 - OFF-SITE DISPOSAL Risk-Based Alternative 2 Exc/Off-site Disposal 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. Sediment									
HTW AA For Disposal: TCLP, volat organics (SW-846 Methods	ile 20.00 EA	0	0	0	0	2,400	2,400	120.00	
1311&8240), soil (Severn Tu Lab, 9/99) (Assume 1 samp every 150 cy)									
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 827( soil (Severn Trent Lab, 9/9 (Assume 1 sample every 150	99)	0	0	0	0	4,600	4,600	230.00	
AFH AA For Disposal: TCLP-Pest/P( (SW-846 Methods 1311 & 8080	CBs 20.00 EA	0	0	0	0	2,400	2,400	120.00	
AFH AA For Disposal: TCLP - Metal (SW-846 Methods 1311 & 6010 7470), soil (Severn Trent I 9/99) (Assume 1 sample eve 150 cy)	ls 20.00 EA D & Lab,	0	0	0	0	2,400	2,400	120.00	
AFH AA Confirmatory: NYSDEC CLP-Pest/PCBs , soil (Seven Trent Lab, 9/99) (Assume ' sample every 100 lf + 20%	1	0	0	0	0	14,700	14,700	175.00	
USR AA Confirmatory: NYSDEC CLP T/ Inorganics, soil (Severn Tr Lab, 9/99) (Assume 1 test, LF + 20% for QC)	AL 84.00 EA rent	0	0	0	0	13,020	13,020	155.00	
33.02.11. Soil	15 00 51	0		0		4 000	4 999	420.00	
HTW AA For Disposal: TCLP, volat organics (SW-846 Methods 1311&8240), soil (Severn Tu Lab, 9/99) (Assume 1 samp every 150 cy)	rent	0	0	0	0	1,800	1,800	120.00	
AFH AA For Disposal: TCLP-SVOCs (SW-846 Methods 1311 & 8270 soil (Severn Trent Lab, 9/9 (Assume 1 sample every 1500	99)	0	0	0	0	3,450	3,450	230.00	
AFH AA For Disposal: TCLP - Meta (SW-846 Methods 1311 & 6010 7470), soil (Severn Trent I 9/99) (Assume 1 sample evo 150cy)	D & Lab,	0	0	0	0	1,800	1,800	120.00	

Tri-Service Automated Cost Engineering System (TRACES)

150cy)

Fri 12 Oct 2001

TIME 08:21:31

Fri 12 Oct Eff. Date DETAILED E	10/03/96	PROJECT	EXOF d Al	F_: SEAD	-4 - OFF- 2 Exc/Of	ng System SITE DISPO f-site Dis M	SAL			IME 08:21:3
33.02. Sam	npling, & Testing			MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
	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	155.0
33	3.03. Site Work									
	33.03.02. Clearing and Grubbi Remove and dispose existing chain link fence: Site dml, chain link fence, remove & salvage for reuse	ng 1000.00	LF	52	1,300	0	0	0	1,300	1.3
AF AA	Clearing, brush w/dozer & brush rake, light brush	15.00	ACR	240	6,490	9,433	0	0	15,923	1061.5
USR AA	33.03.06. Roadways Grade 20ft wide roadway Roadway stone - 3" deep esl a 25% of roadway	3000.00 3000.00		0 0	1,800 1,560	4,260 2,070	0 17,334	0		2.0
USR AA	33.03.08. Survey Remediation Survey remediation a Survey remediation area		DAY	0	10,500	1,750	1,873	0	14,123	2017.5
	33.03.11. Erosion control Silt Fence: Installation and materials high, polypropylene	4000.00	LF	840	20,000	2,000	6,420	0	28,420	7.1
B HTW AA	Hay bales - stalked Maintain silt fence and remove	4000.00 4000.00		1 27	680 680	0 0	4,280 4,280	0 0	4,960 4,960	1.2
	5.06. Remedial Design	1.00			27,600	0	2,568	0	30,168	30168.0
B HTW AA B HTW AA	Remedial Design Workplan Preliminary Design Report Pre-final/Final Design Report, Including O&M Plan, S&A Plan, QA Plan, Contingency Plan, Waste	1.00	EA	0 0 0	46,000 118,000	0 0 0	4,280 7,490	0	50,280	50280.0 125490.0
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	50175.0
	Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.0
MIL AA	3.07. Building Remediation Clean up hazardous material within building: Cleanup, floor area, final	47.00	CSF	8	190	15	13	0	218	4.6
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	79.1

	ilding Remediation			MANHOUR		EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
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	545.7
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	80.00	DR	0	0	0	0	10,700	10,700	133.7
	contain PCBs).)									
	Extra fees for overpack use Transport and Dispose haz waste	80.00 20.00		0 0	0 0	0	0	3,200 2,340	3,200 2,340	40.0 117.0
LISR AA	, bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99) Water treatment	1000.00	GAL	0	0	0	0	1,000	1,000	1.0
	3.09. Sediment Remediation		0,12	·	Ū	Ū	Ū	1,000	1,000	
	33.09.04. Sitework									
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	20.0
USR AA	Plastic sheeting for ground an d cover: 6mil polyethylene liner	75000	SF	0	0	0	6,420	0	6,420	0.0
MIL AA		2076.00	CY	183	5,543	2,886	40,495	0	48,923	23.5
	33.09.09. Disposal									
	Transportation of sec									
HTW AA	Transport and Dispose haz waste	2595.00	TON	0	0	0	0	303,615	303,615	117.0
	, bulk solid, includes 6% disposal taxes & fees (Earthwatch, 10/99)									
3	3.10. Soil Remediation									

Tri-Service Automated Cost Engineering System (TRACES)

PROJECT EXOFF\_: SEAD-4 - OFF-SITE DISPOSAL

Risk-Based Alternative 2 Exc/Off-site Oisposal

the Sitework - Surface Soils category. L MIL AA Excavate and stockpile (volumes 766.00 CY 0 0 0 15,320 15,320 20.00 used for estimate are 30%

greater than in-situ volumes)

DETAIL PAGE 3

# Fri 12 Oct 2001 Eff. Date 10/03/96 DETAILED ESTIMATE

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-4 - OFF-SITE DISPOSAL Risk-Based Alternative 2 Exc/Off-site Disposal 33. Remedial Action

TIME 08:21:31

DETAIL PAGE 4

.10. Soi	l Remediation	QUANTY UON		LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR AA	Plastic sheeting for ground an d	25549 SF	0	0	0	2,187	0	2,187	0.0
MIL AA	cover: 6mil polyethylene liner Loam or topsoil, furnish & place, imported, 6" deep	383.00 CY	34	1,023	532	7,471	0	9,026	23.57
	Common fill (6") - Material for Backfill, includes cost material (bank sand) and delivery (DeWitt 1999)	452.00 TOM	i 0	0	0	2,104	0	2,104	4.6
AF AA	Fill, spread borrow w/dozer	384.00 CY	5	138	250	0	0	388	1.0
	Compaction, steel wheel tandem roller, 5 ton	384.00 CY	3	81	69	0	0	150	0.3
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 - Subsurfac								
. 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	20.0
USR AA	Plastic sheeting for ground an d	9629.00 SF	0	0	0	824	0	824	0.0
3 MIL AA	cover: 6mil polyethylene liner Common fill (6") - Material for Backfill, includes cost of material (bank sand) and delivery (DeWitt 1999)	341.00 TOM	1 0	0	0	1,587	0	1,587	4.6
	Fill, spread borrow w/dozer	289.00 CY	3	104	188	0	0	292	1.0
	Compaction, steel wheel tandem roller, 5 ton	289.00 CY	2	61	52	0	0	113	0.3
	33.10.05. Sitework - Ditch Soi All fill, topsoil, an the Sitework - Surfac	d seeding i		oil remec	liation are	e included	in		
. 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	20.0
USR AA	Plastic sheeting for ground an d	29553 SF	0	0	0	2,530	0	2,530	0.0
MIL AA	cover: 6mil polyethylene liner Loam or topsoil, furnish & place, imported, 6" deep	443.00 CY	39	1,183	616	8,641	0	10,440	23.5
USR AA	Common fill (6") - Material for Backfill, includes cost material (bank sand) and delivery (DeWitt 1999)	523.00 TO	N O	0	0	2,434	0	2,434	4.6
AF AA	Fill, spread borrow w/dozer	443.00 CY	5	159	288	0	0	447	1.0
	Compaction, steel wheel tandem roller, 5 ton	443.00 CY	3	93	80		0	173	0.3
	Seeding, athletic field mix,	4.00 MS	F 4	101	0	178	0	279	69.7

Fri     12 Oct 2001     Tri-Service Automated Cost Engineering System (TRACES)     TIME (       Eff. Date     10/03/96     PROJECT EXOFF : SEAD-4 - OFF-SITE DISPOSAL											
DETAILED ESTIMATE Risk-Based Alternative 2 Exc/Off-site Disposal DETAI 33. Remedial Action											
33.10. Soil Remediation								SUBCONTR	TOTAL COST	UNIT COST	
	isposal ansportation of soi il is hazardous.	il to ha:	zardou	s waste	landfill.	Assuming	that 25%	of			
HTW AA Transport and , bulk solid,	Dispose haz waste isposal taxes &	560.00	TON	0	0	0	0	65,520	65,520	117.00	
HTW AA Transport and waste, bulk		1680.00	TON	0	0	0	0	52,920	52,920	31.50	
33.26. Demobili	zation										
TOTAL Decontaminate	Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821.20	
TOTAL Demobilization	n	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		

Eff. Date 10/03/96	R	PROJECT EXC isk-Based / JECT OWNER	Alternative	TIME 08:21:31 SUMMARY PAGE 1					
	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	54799.2
33.03.08 Survey Remediatio 33.03.11 Erosion control	1.00 ACR 1.00 LF	19,510 52,960	<b>39</b> 0 1,060	600 1,620	•	900 2,430	2,120 5,760	28,640 77,750	28637.58 77745.7
TOTAL Site Work	- 1.00 EA	133,590	2,670	4,090	35,090	6,140	14,530	196,110	196107.4
77.04 0.11 0.0	4 00 54	(37.050	0	12 (00		15 250	74 000	(87.070	( 83033 8
33.06 Remedial Design 33.07 Building Remediation	1.00 EA 1.00 EA	423,050 31,200	0 620	12,690 950	0 8,190	15,250 1,4 <b>3</b> 0	36,080 3,390	487,070 45,800	487073.89 45799.2
33.09 Sediment Remediation									
33.09.04 Sitework		138,580		4,240	36,400	6,370	15,070		203435.2
33.09.09 Disposal	1.00 EA	419,410	8,390	12,830	110,160	19,280	45,610	615,670	615669.8
TOTAL Sediment Remediat	1.00 EA	557,990	11,160	17,070	146,560	25,650	60,670	819,110	819105.1
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	61565.3
33.10.04 Sitework - Subsur	1.00 EA	11,870	240	360	•	550	1,290	17,430	17431.0
33.10.05 Sitework - Ditch	1.00 EA	47,030		•		2,160			69032.7
33.10.06 Disposal	1.00 EA -	163,610	3,270	5,010	42,970	7,520	17,790	240,170	240172.3
TOTAL Soil Remediation	1.00 EA	264,450	5,290	8,090	69,460	12,160	28,760	388,200	388201.4
33.26 Demobilization									
33.26.04 Decontaminate Equ	1.00 EA	12,190	240	370	3,200	560	1,330	17,890	17887.6
33.26.06 Demobilization	1.00 EA	4,870	100	150	1,280	220	530	7,160	7155.0

Fri 12 Oct 2001 Eff. Date 10/03/96						PROJECT EXOFF_: SEAD-4 - OFF-SITE DISPOSAL Risk-Based Alternative 2 Exc/Off-site Disposal								
	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					

Fri 12 Oct 2001 Eff. Date 10/03/96	TIME 08:21:31		
ERROR REPORT	Risk-Based Alternative 2 Exc/Off-site Disposal	ERROR PAGE 1	
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 \* \* \*

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-4 - OFF-SITE DISPOSAL Risk-Based Alternative 2 Exc/Off-site Disposal

D	ROJECT OWNER SUMMARY - SUBSYSTM ETAILED ESTIMATE 3. Remedial Action 01. Mobilization 02. Sampling, & Testing	DETAIL PAGE	
	<ol> <li>Remedial Action</li> <li>01. Mobilization</li> </ol>		
3	01. Mobilization	1	
		1	
	oz. Sampring, & resting		
	06. Sediment	1	
		1	
	03. Site Work 02. Clearing and Grubbing	2	
	• •	2	
		2	
		2	
	07. Building Remediation	2	
	09. Sediment Remediation		
	10. Soil Remediation		
		s4 4	
	26. Demobilization		

No Backup Reports...

\* \* \* END TABLE OF CONTENTS \* \* \*

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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%

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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:

Level of Protection A - Productivity \_\_\_%
 Level of Protection B - Productivity \_\_%
 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.

Availiable Time (minutes)	Level 480	A Level 480	B Level 480	C Level D 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	300/480	370/480	410/480
	X100%	x100%	x100%	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:

 $\cdot$  Time necessary to complete sampling may increase depending on the flow of water.

 $\cdot$  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%

Fri 12 Oct 2001 Eff. Date 10/03/96 DETAILED ESTIMATE

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT ANNUAL: ANNUAL MONITORING COSTS - FOR SEMI-ANNUAL LONG-TERM GW MONITORING - SEAD-4 33. Remedial Action

6.02. Sar	mpling, & Testing	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
33. F	Remedial Action									
33	3.02. Sampling, & Testing									
	33.02.01. Health and Safety									
HTW AA	Case of 25, disposable coveralls, Tyvek (Pine	1.00	EA	0	0	0	115	0.	115	114.
USR AA	Environmental Services 9/98) Poly Tyvek (case of 12) (Pine Environmental Services 9/98)	1.00	EA	0	0	0	74	0	74	73.
HTW AA	First aid kits, 36 ingredients	1.00	EA	0	0	0	88	0	88	88.
	Eye prot, safety glasses	2.00		0	0	0	12	0	12	6.
	Latex Gloves (100/box) (Pine Environmental Services 9/98)	4.00		0	0	0	42	0	42	10.
USR AA	North Respirator Cartridges (2 per/pkg) (Pine Environmental Services 9/98)	2.00	PK	0	0	0	9	0	9	4.
	33.02.02. Personnel									
AFH AA	Personnel per diem (2 people x 4	18.00	DAY	0	0	0	1,907	0	1,907	105
	days x 2 events)									
	Car or van mileage charge	2000.00		0	0	0	984	0	984	0
HTW AA	Daily rate, subcontracted	18.00	EA	0	0	0	0	12,240	12,240	680
	33.02.04. Sample Groundwater									
	Groundwater monitorir									
	Each monitoring well SVOCs.									
	Turbidimeter Rental (Pine Environmental Services 9/98)	2.00		0	0	160 690	0	0	160 690	80 345
	Hydrolab Rental (Hydrolab Corp. 9/98)	2.00								
	Bladder Pump Rental (Marschalk Corporation 9/98)	2.00		0	0	190	0	0	190	95
	Pump Controller Rental (Marschalk Corp. 9/98)	2.00		0	0	300	0	0	300	150
	12-volt Compressor Rental (Marschalk Corp. 9/98)	2.00		0	0	350	0	0		175
	Misc. Equipment Rental (Marschalk Corp. 9/98)	2,00		0	0	65	0	0		32
USR AA	Thermo Environmental 580B (OVM) Rental (US Environmental, 12/98)	2.00	WK	0	0	400	0	0	400	200
USR AA	Teflon Tubing (1/4" ID x 3/8") (Pine Environmental Services 9/98)	100.00	FT	0	Ò	0	268	0	268	ž
USR AA	Isobutylene Calibration Gas (Pine Environmental Services	2.00	EA	0	0	0	173	0	173	80

9/98)

### Tri-Service Automated Cost Engineering System (TRACES) PROJECT ANNUAL: ANNUAL MONITORING COSTS - FOR SEMI-ANNUAL LONG-TERM GW MONITORING - SEAD-4 33. Remedial Action

02. Sa	ampling, & Testing	QUANTY UOM						TOTAL COST	UNIT COS
JSR A/	A pH4 Buffer Solution (Cole-Parme	2.00 EA	0	0	0	22	0	22	11.2
JSR A	Instrument Co. 9/98) A pH7 Buffer Solution (Cole-Parme	2.00 EA	0	0	0	22	0	22	11.2
JSR A	r Instrument Co. 9/98) A 700 Conductivity Solution (Cole-Parmer Instrument Co.	2.00 EA	0	0	0	39	0	39	19.2
JSR A#	9/98) A 2060 Conductivity Solution	2.00 EA	0	0	0	39	0	39	19.3
	(Cole-Parmer Instrument Co. 9/98)								
ITW AA	A Custody seals (package of 10)	8.00 EA	0	0	0	126	0	126	15.
ITW A#	A 1gal,4/case,safe trans can w/vermiculite	2.00 EA	0	0	0	58	0	58	29.
AFH A#	A Packing Tape: Testing, packagin g & shipping, per roll	8.00 EA	0	0	0	13	0	13	1.
ITW AA	A Shipping coolers: Testing, packaging & shipping, 51# to 70# pkg, overnight dlvy	14.00 EA	0	0	0	0	1,096	1,096	78.
AFH A#	A Testing, packaging & shipping, bag ice	100.00 EA	0	0	0	0	119	119	1.
HTW A≉	A 48 quart ice chest, cooler & ic e chest	2.00 EA	0	0	0	0	55	55	27.
JSR AA	A Hydrolab Rental (Hydrolab Corp. 9/98)	2.00 WK	0	0	0	0	0	0	0.
	33.02.07. Analysis of Groundwa	iter							
ITW AA	A 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.
ITW AA	A Semi-volatile organics (NYSDEC CLP TCL Semi-VOCs modified - unit cost from Severn Trent Lab	16.00 EA	0	0	0	0	5,920	5,920	370.
AFH AA	9/98) A 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.
	33.02.12. Disposal of IDW								
JSR AJ	Disposal of Investiga A 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	1.00	O Wastes	0	0	0	134	134	133

Fri 12 Oct 2001 Tri-Service Automated Cost Engineering System (TRACES) PROJECT ANNUAL: ANNUAL MONITORING COSTS - FOR SEMI-ANNUAL Eff. Date 10/03/96 DETAILED ESTIMATE LONG-TERM GW MONITORING - SEAD-4

### 33. Remedial Action

3.02. Sampling, & Testing	QUANTY UOM MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
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	

.

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT ANNUAL: ANNUAL MONITORING COSTS - FOR SEMI-ANNUAL LONG-TERM GW MONITORING - SEAD-4

TIME 08:31:32

SUMMARY PAGE 1

### \*\* PROJECT OWNER SUMMARY - SUBSYSTM (Rounded to 10's) \*\*

	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

Fri 12 Oct 2001	Tri-Service Automated Cost Engineering System (TRACES)	TIME 08:31:32
Eff. Date 10/03/96 ERROR REPORT	PROJECT ANNUAL: ANNUAL MONITORING COSTS - FOR SEMI-ANNUAL LONG-TERM GW MONITORING - SEAD-4	ERROR PAGE 1
R2032: 330204	P0195 46422 32 oz HDPE b Detail item has zero quantity - no costs reported	

\* \* \* END OF ERROR REPORT \* \* \*

TIME 08:31:32

CONTENTS PAGE 1

SUMMARY REPORTS	SUMMARY PAGE
PROJECT OWNER SUMMARY - SUBSYSTM	1
DETAILED ESTIMATE	DETAIL PAGE
33. Remedial Action	
02. Sampling, & Testing	
01. Health and Safety	
02. Personnel	1
04. Sample Groundwater	
07. Analysis of Groundwater	2
12. Disposal of IDW	2

No Backup Reports...

\* \* \* END TABLE OF CONTENTS \* \* \*

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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%

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MCACES for Windows Software Copyright (c) 1985-1997 by Building Systems Design, Inc. Release 1.2 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 2,3,4,0ther 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:

LABOR ID: NAT99A EQUIP ID: NAT97C

Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL NYSDEC TAGM ALTERNATIVE (exoff3)

\_\_\_\_\_

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	А	-	Productivity	%
2.	Level	of	Protection	В	-	Productivity	%
3.	Level	of	Protection	С	-	Productivity	%
4.	Level	of	Protection	D	-	Productivity	85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

Availiable Time (minutes) Non-Productive Time (minutes):	Level 480	A Level 480	B Level 480	C Level D 480
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	300/480	370/480	410/480
	X100%	X100%	X100%	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%

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL NYSDEC TAGM ALTERNATIVE (exoff3) 33. Remedial Action

01. Mo	bilization		UOM MANHOUR		EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
33.	Remedial Action								
3	3.01. Mobilization								
USR AA	Mobilization	1.00	EA O	793	2,500	535	0	3,828	3827.7
3	3.02. Sampling, & Testing								
	33.02.06. Groundwater Groundwater - from ho	lding ta	inks						
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 O	0	0	0	2,625	2,625	175.0
AFH AA	For Disposal: NYSDEC CLP TAL SVOCs modified , groundwater, (Severn Trent Lab, 9/98) (Assume 1 sample per tank)	15.00	EA O	0	0	0	5,550	5,550	370.0
AFH AA	For Disposal: NYSDEC TAL - Inorganics, groundwater (Severn Trent Lab, 9/98) (Assume 1 sample per tank)	15.00	EA O	0	0	0	2,325	2,325	155.0
	33.02.11. Soil						1		
	For disposal; TCLP an Assuming 1 sample eve 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 O	0	0	0	31,200	31,200	120.0
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 O	0	0	0	59,800	59,800	230.0
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 O	0	0	0	31,200	31,200	120.0
μτω ΔΔ	33.02.13. Confirmatory-Soil - Confirmatory: NYSDEC CLP, volatile organics, soil (Severn	All Area 156.00		0	0	0	27,300	27,300	175.0

Fri 12 Oct 2001 Eff. Date 10/03/96 DETAILED ESTIMATE

### Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL NYSDEC TAGM ALTERNATIVE (exoff3) 33. Remedial Action

DETAIL PAGE 2

.02. Si	ampling, & Testing	QUANTY UO	MANHOUR	LABOR		MATERIAL		TOTAL COST	UNIT COS
AFH A	A Confirmatory: NYSDEC CLP-SVOCs , soil (Severn Trent Lab, 9/99) (Assume 1 sample every 50 ft of wall and floor of	156.00 EA	0	0	0	0	57,720	57,720	370.0
	excavation.								
AFH A	Confirmatory: NYSDEC CLP TAL - Metals , soil (Severn Trent	156.00 EA	0	0	0	0	24,180	24,180	155.
	33.02.16. Soil Boring Grid Sou from soil boring sour			no contan	ination be	etween Area	S		
	2,3,4, Others						40 500		475
HTW A	A 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.
AFH A	A 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.
AFH A	A 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.
	33.02.18. IDW from Soil Boring	JS							
HTW A/	A 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.
AFH A	A 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
AFH A	A 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.
:	33.03. Site Work								
	33.03.02. Clearing and Grubbin	ng							
AF A	A Clearing, brush w/dozer & brush rake, light brush	3.00 AC	R 48	1,298	1,887	0	0	3,185	1061.
	33.03.08. Survey Remediation A Survey remediation a	rea							
USR A	A Survey remediation area	10.00 DA	Y O	15,000	2,500	2,675	0	20,175	2017.
MIL A	33.03.11. Erosion control A Silt Fence: Installation and materials	16000 LF	3,360	80,000	8,000	25,680	0	113,680	7.
	high, polypropylene	1/000 1-	-	2 720	0	47 400	0	10.0/0	
HTU A	A Hay bales - stalked	16000 LF	5	2,720	0	17,120	0	19,840	1.

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL NYSDEC TAGM ALTERNATIVE (exoff3) 33. Remedial Action

DETAIL PAGE 3

3.04.	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	21.3
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	89.4
MIL	AA Fence, CL, double, 24' W, indl, gates, swing, 6' high	1.00	EA	0	0	0	435	0	435	435.3
	33.05. Wastewater									
	33.05. 1. Wastewater	4					40 7/7		40 7/7	40744 0
	AA Pump, cntfgl,6"D, horiz mtd, horiz splt, sgl stg,1500GPM,50H			0	0	0	10,767	0	10,767	10766.8
M HTW	AA 21,000 Gal, Steel, hold tank stationary	4.00	EA	0	0	0	5,264	0	5,264	1316.1
	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	10265.4
AFH	AA HTRW,PTTU, >= 12' high, install air strip tower, 1'- 3' diam.	1.00	EA	91	3,035	226	0	0	3,261	3261.0
HTW	AA HTRW, PT opt, air flow switch (loss of air flow - motor failure)	1.00	EA	0	0	0	512	0	512	511.8
	33.10. Soil Remediation									
	33.10.02. Sitework - Soils									
	Excavating Areas 1,2 Volumes are increase				and 10%	contingend	y. For We	ight		
	calculations, the vo	lume is	incr	eased by 1	0% only.					
	All fill, topsoil, a		-	tems for so	oil remea	liation are	e included	in		
	the Sitework - Soils	-						150 500		
USR	AA Excavate, stockpile, screen soi l	32925	CY	0	0	0	0	658,500	658,500	20.0
	(volumes used for estimate are	550000		•	•	0	17 000	•	17 000	0.0
USR	AA Plastic sheeting for ground: 6mil polyethylene liner (1000s1	550000	SF	0	0	0	47,080	0	47,080	0.0
	AA Cover stockpiles w/ plastic	550000	SE	0	0	0	47,080	0	47,080	0.0
IICD	sheeting: Plastic sheeting:		51	Ū	Ū	, i i i i i i i i i i i i i i i i i i i	47,000	Ū	47,000	0.0
USR	6mil polyethylene liner (1000s1 / roll; 1 roll = \$75)									
	6mil polyethylene liner (1000st	6240.00	CY	550	16,661	8,674	121,718	0	147,052	23.5

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL NYSDEC TAGM ALTERNATIVE (exoff3) 33. Remedial Action

	oil Remediation	QUANTY UON						TOTAL COST	UNIT CC
	this option, excavated materia with concentrations of COCs less than Clean up Goals will be used as backfill.	l							
AF A	A Fill, spread borrow w/dozer	14802 CY	178	5,329	9,621	0	0	14,950	1.
AF	Compaction, steel wheel tandem roller, 5 ton	14802 CY	105	3,108	2,664	0	0	5,773	0
RSM A	A Seeding, athletic field mix, 8#/MSFpush spreader	70.20 MSF	70	1,775	0	3,125	0	4,899	69
	33.10.04. Drum Removal Approx. 20 drums in	Area 1							
MIL A/	A Excavator for drum removal at Level B	20.00 EA	2	323	445	0	0	768	38
MIL A/	A Excavator for drum moving at Level B	20.00 EA	2	323	445	0	0	768	38
MIL A/	A Level B breathing unit, suit, overboots, gloves	4.00 EA	0	0	2,000	0	0	2,000	500
HTW A	33.10.06. Disposal: Disposal and Transp of debris and soil A HW packaging, overpacks, 18"di	in solid wast					oosal O	1,583	79
	x 34"H, 16ga stl drum, 55gal,								
	DOT 17C		•						
USR A	A Drums/Paint Cans: Transportati n	o 1.00 EA	0	0	0	0	546	546	54!
	A Drums/Paint Cans: Transportati		0	0	0	0 2,862	546 0	546 2,862	
USR A	A Drums/Paint Cans: Transportati n of Drums by dedicated van A Drums/Paint Cans: Disposal of Drums (Price quoted by Waste				0		0 800	2,862	14:
USR AA USR AA USR AA	A Drums/Paint Cans: Transportati n of Drums by dedicated van A Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management A Extra fees for overpack use A Debris: Transport and Dispose nonhaz waste, bulk solid waste	20.00 EA 20.00 EA 3799.00 TOM	0 0 0 0	0 0 0	0 0 0	2,862 0 0	0 800 119,669	2,862 800 119,669	14: 41 3
USR AA USR AA USR AA	A Drums/Paint Cans: Transportati n of Drums by dedicated van A Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management A Extra fees for overpack use A Debris: Transport and Dispose	20.00 EA 20.00 EA 3799.00 TOM	0 0 0 0	0	0	2,862 0 0	0 800	2,862	143 4( 31
USR AJ USR AJ USR AJ HTW AJ	<ul> <li>A Drums/Paint Cans: Transportati n of Drums by dedicated van</li> <li>A Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management</li> <li>A Extra fees for overpack use</li> <li>A Debris: Transport and Dispose nonhaz waste, bulk solid waste</li> <li>A Soils: Transport and Dispose nonhaz waste, bulk soil</li> </ul>	20.00 EA 20.00 EA 3799.00 TOM 34192 TOM	0 0 0 0	0 0 0 0	0 0 0 0	2,862 0 0	0 800 119,669	2,862 800 119,669	143 4( 31
USR AJ USR AJ USR AJ HTW AJ	<ul> <li>A Drums/Paint Cans: Transportati n of Drums by dedicated van</li> <li>A Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management</li> <li>A Extra fees for overpack use</li> <li>A Debris: Transport and Dispose nonhaz waste, bulk solid waste</li> <li>A Soils: Transport and Dispose nonhaz waste, bulk solid (Earthwatch, 7/00)</li> </ul>	20.00 EA 20.00 EA 3799.00 TON 34192 TON - 2.00 EA	0 0 0 0	0 0 0 0	0 0 0	2,862 0 0	0 800 119,669	2,862 800 119,669	545 143 40 31 31
USR AA USR AA USR AA HTW AA CIV AA	<ul> <li>A Drums/Paint Cans: Transportati n of Drums by dedicated van</li> <li>A Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management</li> <li>A Extra fees for overpack use</li> <li>A Debris: Transport and Dispose nonhaz waste, bulk solid waste</li> <li>A Soils: Transport and Dispose nonhaz waste, bulk solid waste</li> <li>(Earthwatch, 7/00)</li> <li>33.18. Confirmatory Soil Borings</li> <li>(A Mob/Demob</li> </ul>	20.00 EA 20.00 EA 3799.00 TON 34192 TON - 2.00 EA 1.00 EA		0 0 0 0	0 0 0 0	2,862 0 0 0 0	0 800 119,669 1,077,048 800 150	2,862 800 119,669 1,077,048 800 150	143 40 31 31 400
USR AJ USR AJ USR AJ HTW AJ CIV A AFH A	<ul> <li>A Drums/Paint Cans: Transportatin of Drums by dedicated van</li> <li>A Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management</li> <li>A Extra fees for overpack use</li> <li>A Debris: Transport and Dispose nonhaz waste, bulk solid waste</li> <li>A Soils: Transport and Dispose nonhaz waste, bulk solid waste</li> <li>A Soils: Transport and Dispose nonhaz waste, bulk soil (Earthwatch, 7/00)</li> <li>33.18. Confirmatory Soil Borings</li> <li>A Mob/Demob facility</li> <li>A Decon Pad</li> <li>A Decon Time</li> </ul>	20.00 EA 20.00 EA 3799.00 TON 34192 TON - 2.00 EA 1.00 EA 40.00 HR		0 0 0 0 0 0 0 0		2,862 0 0 0 0	0 800 119,669 1,077,048 800 150 6,000	2,862 800 119,669 1,077,048 800	143 4( 3) 3) 400 150 150
USR AJ USR AJ USR AJ HTW AJ CIV A AFH A	<ul> <li>A Drums/Paint Cans: Transportati n of Drums by dedicated van</li> <li>A Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management</li> <li>A Extra fees for overpack use</li> <li>A Debris: Transport and Dispose nonhaz waste, bulk solid waste</li> <li>A Soils: Transport and Dispose nonhaz waste, bulk solid waste</li> <li>(Earthwatch, 7/00)</li> <li>33.18. Confirmatory Soil Borings</li> <li>A Mob/Demob facility</li> <li>A Decon Pad</li> </ul>	20.00 EA 20.00 EA 3799.00 TON 34192 TON - 2.00 EA 1.00 EA 40.00 HR 15.00 EA			0 0 0 0	2,862 0 0 0 0 0 0 0 0 0 0	0 800 119,669 1,077,048 800 150 6,000 750	2,862 800 119,669 1,077,048 800 150 6,000 750	143 4( 31 31 400 150 150 51
USR AJ USR AJ USR AJ HTW AJ CIV AJ AFH A AFH A A AFH A	<ul> <li>A Drums/Paint Cans: Transportatin of Drums by dedicated van</li> <li>A Drums/Paint Cans: Disposal of Drums (Price quoted by Waste Management</li> <li>A Extra fees for overpack use</li> <li>A Debris: Transport and Dispose nonhaz waste, bulk solid waste</li> <li>A Soils: Transport and Dispose nonhaz waste, bulk solid waste</li> <li>A Soils: Transport and Dispose nonhaz waste, bulk soil (Earthwatch, 7/00)</li> <li>33.18. Confirmatory Soil Borings</li> <li>A Mob/Demob facility</li> <li>A Decon Pad</li> <li>A Decon Time</li> <li>A HW packaging, DOT steel drums,</li> </ul>	20.00 EA 20.00 EA 3799.00 TON 34192 TON - 2.00 EA 1.00 EA 40.00 HR		0 0 0 0 0 0 0 0		2,862 0 0 0 0	0 800 119,669 1,077,048 800 6,000 750 375	2,862 800 119,669 1,077,048 800 150 6,000	143 4( 3 3 40 15 15

33.18. Confirmatory Soil Borings -	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
L HTW AA Split spoon sampling OD	16.00	LF	0	0	0	0	192	192	12.0
L AFH AA Standby Time	4.00	HR	0	0	0	0	600	600	150.0
L AFH AA Grout Boreholes	280.00	LF	0	0	0	0	1,680	1,680	6.0
33.26. Demobilization									
TOTAL Decontaminate Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821.2
TOTAL Demobilization	1.00	EA	0	528	2,500	500	0	3,528	3528.4
33.31. Remedial Design									
B HTW AA Remedial Design Workplan	1.00	EA	0	27,600	0	2,568	0	30,168	30168.0
B HTW AA Preliminary Design Report	1.00	EA	0	46,000	0	4,280	0	50,280	50280.0
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	125490.0
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	50175.0
B HTW AA Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.0
33.33. Well Installation									
B CIV AA Mob/Demob facility	1.00	EA	0	0	0	0	600	600	600.0
L AFH AA Decon Pad	1.00	EA	0	0	0	0	150	150	150.0
B HTW AA Installation of Monitoring well threaded	4.00	EA	0	0	0	0	2,320	2,320	580.0
L HTW AA Monitor well, drilling, HS auger, 4.25" ID x 8" OD	40.00	LF	0	0	0	0	720	720	18.0
TOTAL SEAD-59			4,816	430,766	46,470	420,279	2,172,719	3,070,234	

DETAIL PAGE 5

TIME 07:47:44

	2001 10/03/96	PROJEC	Service Auto CT EXOFF_: NYSDE DJECT OWNER	SEAD-59 - C TAGM ALT	TIME 07:47 SUMMARY PAGE					
		QUANTY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COSI
33 Remed	dial Action									
33.01 Moł	oilization	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 San	npling, & 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	85167.5
33.02.18	IDW from Soil Bor	1.00 EA	19,340	390	590	5,080	890	2,100	28,390	28389.1
TOTAL	Sampling, & Testi	1.00 EA	411,510	8,230	12,590	108,080	18,910	44,750	604,080	604081.01
33.03 Sit	te Work									
33.03.02	Clearing and Grub	3.00 ACR	4,400	90	130	1,160	200	480	6,460	2152.58
	Survey Remediatio	1.00 ACR	27,870	560	850	7,320	1,280	3,030	40,910	40910.8
	Erosion control	1.00 LF	211,850	4,240	6,480	55,640	9,740	23,040	310,980	310983.0
TOTAL	Site Work	1.00 EA	244,120	4,880	7,470	64,120	11,220	26,540	358,350	358351.6
<b>33.</b> 04 Fer	ncing	1.00 EA	63,630	1,270	1,950	16,710	2,920	6,920	93,400	93400.6
33.05 Was	stewater									
33.05. 1	Wastewater	1.00 EA	22,150	440	680	5,820	1,020	2,410	32,510	32508.1
TOTAL	Wastewater	1.00 EA	22,150	440	680	5,820	1,020	2,410	32,510	32508.1
33.07 Ai	r Stripping	1.00 EA	19,390	390	590	5,090	890	2,110	28,470	28466.9
33.10 So	il 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	1969318.1
	Drum Removal	1.00 EA	4,880	100	150	1,280	220	530	7,170	7170.2
	Disposal:	1.00 EA	1,661,120	33,220	50 <b>,83</b> 0	436,290	76,350	180,630	2,438,440	2438441.1
TOTAL	Soil Remediation	1.00 EA	3,007,550	60,150	92,030	789,930	138,240	327,030	4,414,930	4414929.6
33.18 Coi	nfirmatory Soil Bo	1.00 EA	19,980	400	610	5,250	920	2,170	29,340	29336.1
33.26 Der	mobilization									
	Decontaminate Equ	1.00 EA	12,190	240	<b>3</b> 70	3,200	560	1,330	17,890	17887.6

Fri 12 Oct 2001	Tri-	Service Autom	ated Cost	Engineeri	ng System (	(TRACES)		т	IME 07:47:44
Eff. Date 10/03/96	PROJE	CT EXOFF_:	SEAD-59 -	EXCAVATIO	N/OFF-SITE	DISPOSAL			
		NYSDEC	TAGM ALT	ERNATIVE	(exoff3)			SUMMA	RY PAGE 2
	** PR	OJECT OWNER S	UMMARY -	SUBSYSTM (	Rounded to	10's) **			
••••	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
	4 00 51			400 740	4 444 000	40/ 700			(220025 5/
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 \* \* \*

<pre>PROJECT OWNER SUMMARY - SUBSYSTM DETAILED ESTIMATE 33. Remedial Action 01. Mobilization 02. Sampling, &amp; Testing 06. Groundwater 11. Soil 13. Confirmatory-Soil - All Areas</pre>	DETAIL PAGE
<ul> <li>33. Remedial Action</li> <li>01. Mobilization</li> <li>02. Sampling, &amp; Testing</li> <li>06. Groundwater</li> <li>11. Soil</li> </ul>	1
01. Mobilization. 02. Sampling, & Testing 06. Groundwater 11. Soil	1
02. Sampling, & Testing 06. Groundwater 11. Soil	1
06. Groundwater 11. Soil	
11. Soil	
	1
13. Confirmatory-Soil - All Areas	
	1
16. Soil Boring Grid South of Road	2
18. IDW from Soil Borings	2
03. Site Work	
02. Clearing and Grubbing	2
08. Survey Remediation Area	2
11. Erosion control	2
04. Fencing	
05. Wastewater	
1. Wastewater	
07. Air Stripping	3
10. Soil Remediation	
02. Sitework - Soils	
04. Drum Removal	4
06. Disposal:	4
18. Confirmatory Soil Borings	4
26. Demobilization	
04. Decontaminate Equipment	5
06. Demobilization	5
31. Remedial Design	5

No Backup Reports...

\* \* \* END TABLE OF CONTENTS \* \* \*

Fri 12 Oct 2001 Eff. Date 10/03/96

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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%

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#### 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 2,3,4,0ther 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:

Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL EPA SSLs ALTERNATIVE (exoff3)

\_\_\_\_\_

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:

Level of Protection A - Productivity \_\_\_\_%
 Level of Protection B - Productivity \_\_\_\_%
 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.

Availiable Time (minutes) Non-Productive Time (minutes):	Level 480	A Level 480		C Level D 480
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	300/480	370/480	410/480
	<b>X1</b> 00%	<b>X1</b> 00%	X100%	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

.1

Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL EPA SSLs ALTERNATIVE (exoff3)

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%

	bilization	QUANTY UOM						TOTAL COST	UNIT COS
33.	Remedial Action								
3	3.01. Mobilization								
USR AA	Mobilization	1.00 EA	0	793	2,500	535	0	3,828	3827.7
3	3.02. Sampling, & Testing								
	33.02.06. Groundwater								
	Groundwater - from ho			-	-		- /		
HTW AA	For Disposal: NYSDEC CLP TCL	15.00 EA	. 0	0	0	0	2,625	2,625	175.0
	VOCs, volatile organics ,								
	groundwater (Severn Trent Lab								
	9/98) (Assume 1 sample for each								
	tank)			_		-			
AFH AA	For Disposal: NYSDEC CLP TAL	15.00 EA	0	0	0	0	5,550	5,550	370.
	SVOCs modified , groundwater,								
	(Severn Trent Lab, 9/98)								
	(Assume 1 sample per tank)	45 00 04							
AFH AA	For Disposal: NYSDEC TAL -	15.00 EA	0	0	0	0	2,325	2,325	155.
	Inorganics, groundwater (Severn								
	Trent Lab, 9/98) (Assume 1								
	sample per tank)								
	sample per tank) 33.02.11. Soil	alveis requ	ired for po	n hazard	ous Landfi	II dieposa	.1		
	sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve								
HTW AA	sample per tank) 33.02.11. Soil For disposal; TCLP an							31,200	120.
HTW AA	sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples	ry 150 cy:	2 <b>3,</b> 025 cy	x 1.40/1	50 = 215 >	1.2 = 260	)	31,200	120.
HTW AA	sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile	ry 150 cy:	2 <b>3,</b> 025 cy	x 1.40/1	50 = 215 >	1.2 = 260	)	31,200	120.
HTW AA	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods</pre>	ry 150 cy:	2 <b>3,</b> 025 cy	x 1.40/1	50 = 215 >	1.2 = 260	)	31,200	120.
HTW AA	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;8240), soil (Severn Trent</pre>	ry 150 cy:	2 <b>3,</b> 025 cy	x 1.40/1	50 = 215 >	1.2 = 260	)	31,200	120.
	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample</pre>	ry 150 cy:	2 <b>3,</b> 025 cy	x 1.40/1	50 = 215 >	1.2 = 260	)	31,200	
	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;&amp;240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy)</pre>	гу 150 су: 260.00 ЕА	2 <b>3</b> ,025 cy 0	x 1.40/1	50 = 215 > O	1.2 = 260 0	31,200		
	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;&amp;240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP-SVOCs</pre>	гу 150 су: 260.00 ЕА	2 <b>3</b> ,025 cy 0	x 1.40/1	50 = 215 > O	1.2 = 260 0	31,200		
	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP-SVOCs (SW-846 Methods 1311 &amp; 8270A),</pre>	ry 150 cy: 260.00 EA 260.00 EA	2 <b>3</b> ,025 cy 0	x 1.40/1	50 = 215 > O	1.2 = 260 0	31,200		
AFH AA	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP-SVOCs (SW-846 Methods 1311 &amp; 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP - Metals</pre>	гу 150 су: 260.00 ЕА	2 <b>3</b> ,025 cy 0	x 1.40/1	50 = 215 > O	1.2 = 260 0	31,200		230.
AFH AA	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP-SVOCs (SW-846 Methods 1311 &amp; 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP - Metals (SW-846 Methods 1311 &amp; 6010 &amp;</pre>	ry 150 cy: 260.00 EA 260.00 EA	23,025 cy 0	x 1.40/1 0 0	50 = 215 > 0 0	1.2 = 260 0 0	31,200 59,800	59,800	230.
AFH AA	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP-SVOCs (SW-846 Methods 1311 &amp; 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP - Metals (SW-846 Methods 1311 &amp; 6010 &amp; 7470), soil (Severn Trent Lab,</pre>	ry 150 cy: 260.00 EA 260.00 EA	23,025 cy 0	x 1.40/1 0 0	50 = 215 > 0 0	1.2 = 260 0 0	31,200 59,800	59,800	230.
AFH AA	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP-SVOCs (SW-846 Methods 1311 &amp; 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP - Metals (SW-846 Methods 1311 &amp; 6010 &amp; 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every</pre>	ry 150 cy: 260.00 EA 260.00 EA	23,025 cy 0	x 1.40/1 0 0	50 = 215 > 0 0	1.2 = 260 0 0	31,200 59,800	59,800	230.
AFH AA	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP-SVOCs (SW-846 Methods 1311 &amp; 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP - Metals (SW-846 Methods 1311 &amp; 6010 &amp; 7470), soil (Severn Trent Lab,</pre>	ry 150 cy: 260.00 EA 260.00 EA	23,025 cy 0	x 1.40/1 0 0	50 = 215 > 0 0	1.2 = 260 0 0	31,200 59,800	59,800	230.
AFH AA	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP-SVOCs (SW-846 Methods 1311 &amp; 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP - Metals (SW-846 Methods 1311 &amp; 6010 &amp; 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every</pre>	ry 150 cy: 260.00 EA 260.00 EA 260.00 EA	23,025 cy 0	x 1.40/1 0 0	50 = 215 > 0 0	1.2 = 260 0 0	31,200 59,800	59,800	230.
AFH AA AFH AA	<pre>sample per tank) 33.02.11. Soil</pre>	ry 150 cy: 260.00 EA 260.00 EA 260.00 EA	23,025 cy 0	x 1.40/1 0 0	50 = 215 > 0 0	1.2 = 260 0 0	31,200 59,800	59,800	230. 120.
AFH AA AFH AA	<pre>sample per tank) 33.02.11. Soil</pre>	ry 150 cy: 260.00 EA 260.00 EA 260.00 EA	23,025 cy 0 0	x 1.40/1 0 0	50 = 215 > 0 0 0	1.2 = 260 0 0	31,200 59,800 31,200	59,800 31,200	230.0 120.1
AFH AA Afh Aa	<pre>sample per tank) 33.02.11. Soil For disposal; TCLP an Assuming 1 sample eve samples For Disposal: TCLP, volatile organics (SW-846 Methods 1311&amp;8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP-SVOCs (SW-846 Methods 1311 &amp; 8270A), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) For Disposal: TCLP - Metals (SW-846 Methods 1311 &amp; 6010 &amp; 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) 33.02.13. Confirmatory-Soil - Confirmatory: NYSDEC CLP, volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1</pre>	ry 150 cy: 260.00 EA 260.00 EA 260.00 EA	23,025 cy 0 0	x 1.40/1 0 0	50 = 215 > 0 0 0	1.2 = 260 0 0	31,200 59,800 31,200	59,800 31,200	230.0 120.0
AFH AA Afh Aa	<pre>sample per tank) 33.02.11. Soil</pre>	ry 150 cy: 260.00 EA 260.00 EA 260.00 EA	23,025 cy 0 0	x 1.40/1 0 0	50 = 215 > 0 0 0	1.2 = 260 0 0	31,200 59,800 31,200	59,800 31,200	120.0 230.0 120.0

Tri-Service Automated Cost Engineering System (TRACES)

PROJECT EXOFF : SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL

EPA SSLs ALTERNATIVE (exoff3)

Fri 12 Oct 2001

Eff. Date 10/03/96 DETAILED ESTIMATE TIME 07:49:01

DETAIL PAGE 1

Fri 12 Oct 2001 Eff. Date 10/03/96 DETAILED ESTIMATE

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL EPA SSLs ALTERNATIVE (exoff3) 33. Remedial Action

.02. Sa	mpling, & 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	370.0
AFH AA	Confirmatory: NYSDEC CLP TAL - Metals , soil (Severn Trent	156.00 EA	0	0	0	0	24,180	24,180	155.0
	33.02.16. Soil Boring Grid Sout from soil boring south 2,3,4, Others		o confirm ı	no contam	ination be	tween Area	s		
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	175.0
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	370.0
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	155.0
HTW AA	33.02.18. IDW from Soil Borings 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	175.0
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	370.0
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	155.0
3	3.03. Site Work								
AF AA	33.03.02. Clearing and Grubbing Clearing, brush w/dozer & brush rake, light brush	3.00 ACR	48	1,298	1,887	0	0	3,185	1061.
	33.03.08. Survey Remediation Ar Survey remediation are								
USR AA	Survey remediation area	10.00 DAY	0	15,000	2,500	2,675	0	20,175	2017.
MIL AA	33.03.11. Erosion control Silt Fence: Installation and materials high, polypropylene	16000 LF	3,360	80,000	8,000	25,680	0	113,680	7.
	Hay bales - stalked Maintain silt fence and remove	16000 LF 16000 LF	5 107	2,720 2,720	0 0	17,120 17,120	0 0	,	1. 1.

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL EPA SSLs ALTERNATIVE (exoff3) 33. Remedial Action

DETAIL PAGE 3

33.04. Fer	ncing			MANHOUR	LABOR	EQUIPMNT			TOTAL COST	UNIT COST
	3.04. Fencing	2000 00		407	2 ( 00	•	0	0	a (aa	4 70
	Site dml, chain link fence, remove & salvage for reuse	2000.00	LF	103	2,600	0	0	0	2,600	1.30
	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
	<pre>Fence, CL, set in conc, 6' H, indl, corner post, galv stl, 4" OD</pre>	4.00	EA	2	55	9	295	0	358	89.48
	Fence, CL, double, 24' W, indl, gates, swing, 6' high	1.00	EA	0	0	0	435	0	435	435.38
33	3.05. Wastewater									
	33.05. 1. Wastewater									
	Pump, cntfgl,6"D, horiz mtd, horiz splt, sgl stg,1500GPM,50HF	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	3.07. Air Stripping									
	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
	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, Volumes are increased			expansion	and 10%	contingenc	v. For we	ight		
	calculations, the vol					ee	,			
	All fill, topsoil, an					iation are	included	in		
	the Sitework - Soils	category	γ.							
USR AA	Excavate, stockpile, screen soi l	32925	CY	0	0	0	0	658,500	658,500	20.00
	(volumes used for estimate are									
	Plastic sheeting for ground:	550000	SF	0	0	0	47,080	0	47,080	0.09
	6mil polyethylene liner (1000sf Cover stockpiles w/ plastic	550000	S.E.	0	0	0	47,080	0	47,080	0.09
	<pre>sheeting: Plastic sheeting: 6mil polyethylene liner (1000sf / roll; 1 roll = \$75)</pre>	550000	31	U	0	0	47,080	0	47,000	0.09
	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

### Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL EPA SSLs ALTERNATIVE (exoff3) 33. Remedial Action

<b>3.1</b> 0.	Soi	il Remediation	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
		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	1.0
AF		Compaction, steel wheel tandem roller, 5 ton	14802	CY	105	3,108	2,664	0	0	5,773	0.
RSM	AA	Seeding, athletic field mix, 8#/MSFpush spreader	70.20	MSF	70	1,775	0	3,125	0	4,899	69.
		33.10.04. Drum Removal Approx. 20 drums in A	Area 1								
L MIL	AA	Excavator for drum removal at Level B	20.00	EA	2	323	445	0	0	768	38.
_ MIL	AA	Excavator for drum moving at Level B	20.00	EA	2	323	445	0	0	768	38.
LMIL	AA	Level B breathing unit, suit, overboots, gloves	4.00	EA	0	0	2,000	0	0	2,000	500.
нтw	AA	33.10.06. Disposal: Disposal and Transpo of debris and soil in HW packaging, overpacks, 18"dia x 34"H, 16ga stl drum, 55gal, DOT 17C	n solid w	aste			waste land O	dfill; disp 1,583	oosal O	1,583	79
USR	AA	Drums/Paint Cans: Transportatio n of Drums by dedicated van	1.00	EA	0	0	0	0	546	546	545
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
		Extra fees for overpack use	20.00		0	0	0	0	800	800	40
USR	AA	Debris: Transport and Dispose nonhaz waste, bulk solid waste	3799.00	TON	0	0	0	0	119,669	119,669	31
HTW		Soils: Transport and Dispose nonhaz waste, bulk soil (Earthwatch, 7/00)	30393	TON	0	0	0	0	957,380	957,380	31
	3	3.18. Confirmatory Soil Borings	-								
B CIV	AA	Mob/Demob facility	2.00	EA	0	0	0	0	800	800	400
. AFH	AA	Decon Pad	1.00	EA	0	0	0	0	150	150	150
. AFH	AA	Decon Time	40.00		0	0	0	0	6,000	6,000	150
4 HTW	AA	HW packaging, DOT steel drums, 55 gal,	15.00	EA	0	0	0	0	750	750	50
		Move drums	15.00	EA	0	0	0	0	375	375	25
L MIL	AA	Borings, auger holes in earth, no samples, 4" dia	280.00	LF	0	0	0	0	3,920	3,920	14

LABOR ID: NAT99A EQUIP ID: NAT97C

33.18. Conf	firmatory Soil Borings -			MANHOUR					TOTAL COST	UNIT COST
	Split spoon sampling DD	16.00	LF	0	0	0	0	192	192	12.00
L AFH AA S	Standby Time	4.00	HR	0	0	0	0	600	600	150.00
L AFH AA G	Grout Boreholes	280.00	LF	0	0	0	0	1,680	1,680	6.00
33.	.26. Demobilization									
TOTAL C	econtaminate Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821.20
TOTAL D	Demobilization	1.00	EA	0	528	2,500	500	0	3,528	3528.48
33.	.31. Remedial Design									
B HTW AA F	Remedial Design Workplan	1.00	EA	0	27,600	0	2,568	0	30,168	30168.00
B HTW AA F	Preliminary Design Report	1.00	EA	0	46,000	0	4,280	0	50,280	50280.0
1 G	Pre-final/Final Design Report, Including O&M Plan, S&A Plan, DA Plan, Contingency Plan, Waste	1.00	EA	0	118,000	,0	7,490	0	125,490	125490.0
	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 F	Project Closeout Plan	1.00	EA	0	48,000	. 0	2,140	0	50,140	50140.0
33.	33. Well Installation									
B CIV AA M	1ob/Demob Facility	1.00	EA	0	0	0	0	600	600	600.00
L AFH AA D	econ Pad	1.00	EΑ	0	0	0	0	150	150	150.00
	Installation of Monitoring well Threaded	4.00	EA	0	0	0	0	2,320	2,320	580.00
	Monitor well, drilling, HS auger, 4.25" ID x 8" OD	40.00	LF	0	0	0	0	720	720	18.00
TOTAL S	SEAD-59			4,816	430,766				2,932,483	

Fri 12 Oct 2001

Eff. Date 10/03/96

DETAILED ESTIMATE

Fri 12 Oct 2001 Eff. Date 10/03/96	PROJE	Service Aut CT EXOFF_: EPA DJECT OWNER	SEAD-59 · SSLs ALTER	• EXCAVATIO	DN/OFF-SITE exoff3)	DISPOSAL			TIME 07:49:01 NRY PAGE 1
	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		5,170	44,340	7,760	18,360	247,800	247796.91
33.02.13 Confirmatory-Soil	1.00 EA	150,850	-	4,620	39,620	6,930	16,400	221,440	221435.54
33.02.16 Soil Boring Grid 33.02.18 IDW from Soil Bor	1.00 EA 1.00 EA	58,020 19,340	1,160 390	1,780 590	15,240 5,080	2,670 890	6,310 2,100	85,170 28, <b>39</b> 0	85167.51 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	<b>93,</b> 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

Fri 12 Oct 2001 Eff. Date 10/03/96		Service Auto CT EXOFF :		-	÷			Т	IME 07:49:01
E11. Date 10/03/70		-	SSLs ALTER	NATIVE (e	exoff3)			SUMMA	RY PAGE 2
	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 33.33 Well Installation	1.00 EA 1.00 EA	4 <b>23,0</b> 50 5,240	<b>8,46</b> 0 0	12,950 160	111,110 0	19,450 190	46,000 450	621,020 6,030	621019.20 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

Fri 12 Oct 2001	Tri-Service Automated Cost Engineering System (TRACES)	TIME 07:49:01
Eff. Date 10/03/96 ERROR REPORT	PROJECT EXOFF_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL EPA SSLs ALTERNATIVE (exoff3)	ERROR PAGE 1

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No errors detected...

\* \* \* END OF ERROR REPORT \* \* \*

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL EPA SSLs ALTERNATIVE (exoff3)

	SUMMARY REPORTS	SUMMARY PAGE	
	PROJECT OWNER SUMMARY - SUBSYSTM		
	DETAILED ESTIMATE	DETAIL PAGE	
	33. Remedial Action		
	01. Mobilization		
	02. Sampling, & Testing		
	06. Groundwater		
	11. Soil		
	13. Confirmatory-Soil - All	Areas1	
	16. Soil Boring Grid South o	f Road2	
	18. IDW from Soil Borings	2	
	03. Site Work		
	02. Clearing and Grubbing	2	
	08. Survey Remediation Area.	2	
	-		
	04. Fencing		
	05. Wastewater		
	1. Wastewater		
	10. Soil Remediation		
	26. Demobilization	••••••••••••••••	
	-		
	JJ. Well Installation		
No Backup Reports			
no backup kepurta			

\* \* \* 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%

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#### 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 2,3,4,0ther 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:

Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 1 - Construction (exoff3)

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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	۰ ۱	Productivity	%
2.	Level	of	Protection E	3 -	Productivity	%
3.	Level	of	Protection 0	: -	Productivity	%
4.	Level	of	Protection D	) -	Productivity	85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

Availiable Time (minutes) Non-Productive Time (minutes):	Level 480	A Level 480	B Level 480	C Level D 480
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	300/480	370/480	410/480
	X100%	X100%	X100%	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)	<b>6</b> 0-140	60-140	40-140	30-70

Fri 12 Oct 2001 Eff. Date 10/03/96	Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL	TIME 07:42:35		
PROJECT NOTES	RISK-BASED ALTERNATIVE 1 - Construction (exoff3)	TITLE PAGE	4	
	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%

### Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 1 - Construction (exoff3) 33. Remedial Action

01. Mok	bilization	QUANTY	UOM I	MANHOUR					TOTAL COST	UNIT COS
33. F	Remedial Action									
33	3.01. Mobilization									
USR AA	Mobilization	1.00	EA	0	793	2,500	535	0	3,828	3827.7
33	3.02. Sampling, & Testing									
	33.02.06. Groundwater Groundwater - from ho	lding to	nka							
	For Disposal: NYSDEC CLP TCL VOCs, volatile organics , groundwater (Severn Trent Lab 9/98) (Assume 1 sample for each tank)	15.00		0	0	0	0	2,625	2,625	175.0
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	370.0
	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	155.0
	33.02.11. Soil For disposal; TCLP an	-1		and fam no		love loveti	II dianaaa	1		
	Assuming 1 sample eve samples									
AA WTH	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	120.0
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	230.0
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	120.0
	33.02.13. Confirmatory-Soil Confirmatory: NYSDEC CLP,	All Area 156.00		0	0	0	0	27,300	27,300	175.0

## Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 1 - Construction (exoff3)

DETAIL PAGE 2

<ol> <li>Remedial Actio</li> </ol>	n
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.02. Sa	ampling, & Testing		MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
AFH AA	A 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	370.0
AFH A	A Confirmatory: NYSDEC CLP TAL - Metals , soil (Severn Trent	156.00 EA	0	0	0	0	24,180	24,180	155.
	33.02.16. Soil Boring Grid Sou								
	from soil boring sout 2,3,4, Others	th of road to	confirm r	no contam	ination be	tween Area	s		
HTW AA	A 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.
AFH A	A 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.
AFH AA	A 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.
	33.02.18. IDW from Soil Boring	js							
HTW AA	A 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
AFH A	A 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
AFH A	A 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
3	33.03. Site Work								
	33.03.02. Clearing and Grubbin	ng							
AF A/	A Clearing, brush w/dozer & brush rake, light brush	3.00 ACR	48	1,298	1,887	0	0	3,185	1061
	33.03.08. Survey Remediation								
USR A	Survey remediation a A Survey remediation area	rea 10.00 DAY	0	15,000	2,500	2,675	0	20,175	2017
	33.03.11. Erosion control								
MIL A/	A Silt Fence: Installation and materials high, polypropylene	16000 LF	3,360	80,000	8,000	25,680	0	113,680	7
HTW A	A Hay bales - stalked	16000 LF	5	2,720	0	17,120	0	19,840	1
MIL A/	A Maintain silt fence and remove	16000 LF	107	2,720	0	17,120	0	19,840	1

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 1 - Construction (exoff3) 33. Remedial Action

DETAIL PAGE 3

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	21.3
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	89.4
MIL AA Fence, CL, double, 24' W, indl, gates, swing, 6' high	1.00	EA	0	0	0	435	0	435	435.3
33.05. Wastewater									
33.05. 1. Wastewater	1 00		0	0		40 7/7		40 7/7	
L MIL AA Pump, cntfgl,6"D, horiz mtd, horiz splt, sgl stg,1500GPM,50H			0	0	0	10,767	0	10,767	10766.8
M HTW AA 21,000 Gal, Steel, hold tank stationary	4.00	EA	0	0	0	5,264	0	5,264	1316.1
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	10265.4
AFH AA HTRW,PTTU, >= 12' high, install air strip tower, 1'- 3' diam.	1.00	EA	91	3,035	226	0	0	3,261	3261.0
HTW AA HTRW, PT opt, air flow switch (loss of air flow - motor failure)	1.00	EA	0	0	0	512	0	512	511.8
33.10. Soil Remediation									
33.10.02. Sitework - Soils									
Excavating Areas 1,2									
Volumes are increase			-		contingend	y. For we	eight	а.	
calculations, the vo All fill, topsoil, a					listion and	included	in		
the Sitework - Soils					inder off and	, moradea			
USR AA Excavate, stockpile, screen soi l			0	0	0	0	658,500	658,500	20.0
(volumes used for estimate are									
USR AA Plastic sheeting for ground:	550000	SF	0	0	0	47,080	0	47,080	0.0
6mil polyethylene liner (1000sf USR AA Cover stockpiles w/ plastic	550000	SF	0	0	0	47,080	0	47,080	0.0
sheeting: Plastic sheeting: 6mil polyethylene liner (1000sf / roll; 1 roll = \$75)									
MIL AA Loam or topsoil, furnish & place, imported, 6" deep	6240.00	СҮ	550	16,661	8,674	121,718	0	147,052	23.5
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	4.6

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 1 - Construction (exoff3) 33. Remedial Action

3.10. Sc	il Remediation		UOM MANHOUR		EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT CO
	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.
AF	Compaction, steel wheel tandem	14802		3,108	-	0	0	5,773	0.
	roller, 5 ton			-				•	
RSM AA	Seeding, athletic field mix,	70.20	MSF 70	1,775	0	3,125	0	4,899	69.
-	8#/MSFpush spreader								
	33.10.04. Drum Removal Approx. 20 drums in A	Area 1							
MIL AA	Excavator for drum removal at	20.00	EA 2	323	445	0	0	768	38.
	Level B						Ũ	100	50.
L MIL AA	LExcavator for drum moving at Level B	20,00	EA 2	323	445	0	0	768	38.
. MTI	Level B breathing unit, suit,	4.00	EA O	0	2,000	0	0	2,000	500
	overboots, gloves	100		Ū	2,000		Ū	2,000	500
	33.10.06. Disposal:								
	Disposal and Transpo	rtation o	fdrums to h	azardous	waste land	dfill; disp	osal		
	of debris and soil in								
HTW AA	HW packaging, overpacks, 18"dia	20.00	EA O	0	0	1,583	0	1,583	79
	x 34"H, 16ga stl drum, 55gal, DOT 17C								
	Drums/Paint Cans: Transportatio	1.00	EA O	0	0	0	546	546	545
USK AA	n	1100		0	•	Ŭ	540	540	242
	of Drums by dedicated van								
USR AA	Drums/Paint Cans: Disposal of	20.00	EA O	0	0	2,862	0	2,862	143
	Drums (Price quoted by Waste								
	Management								
	Extra fees for overpack use	20.00		0		0	800	800	40
USR AA	Debris: Transport and Dispose	3799.00	TON O	0	0	0	119,669	119,669	31
	nonhaz waste, bulk solid waste	40000				•	500 / /0	500 //0	
HTW AA	Soils: Transport and Dispose	18999	TON O	0	0	0	598,469	598,469	31
	nonhaz waste, bulk soil (Earthwatch, 7/00)								
3	3.18. Confirmatory Soil Borings	-							
B CIV AA	Mob/Demob	2.00	EA 0	0	0	0	800	800	400
	facility								
L AFH AA	A Decon Pad	1.00		0	0	0	150	150	150
	A Decon Time	40.00		0	0	0	6,000	6,000	150
M HTW AA	A HW packaging, DOT steel drums, 55 gal,	15.00	EA O	0	0	0	750	750	50
L AFH AA	A Move drums	15.00	EA O	0	0	0	375	375	25
	Borings, auger holes in earth,	280.00		0	0	0	3,920	3,920	14
	no samples, 4" dia								

## Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 1 - Construction (exoff3) 33. Remedial Action

TIME 07:42:35

33.18. Confirmatory Soil Borings -		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		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			27,600	0	2,568	0		30168.00
B HTW AA Preliminary Design Report	1.00			46,000	-	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	

Fri 12 Oct 2001 Eff. Date 10/03/96	PROJEC RI	T EXOFF_: SK-BASED AL	SEAD-59 - TERNATIVE	EXCAVATIO	ng System ( DN/OFF-SITE Fuction (exc Rounded to	DISPOSAL			IME 07:42:35 RY PAGE 1
	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		5,170		7,760	18,360	247,800	247796.91
33.02.13 Confirmatory-Soil		150,850	-		•	6,930	16,400	221,440	221435.54
33.02.16 Soil Boring Grid 33.02.18 IDW from Soil Bor	1.00 EA 1.00 EA	58,020 19,340	1,160 390	1,780 590	15,240 5,080	2,670 890	6,310 2,100	85,170 28, <b>39</b> 0	85167.51 28389.17
55.02.18 IDW From Solt Bor	1.00 EA	17,340			J,000		2,100	20,390	20309.17
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		27,870		850		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			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

Fri 12 Oct 2001 Tri-Service Automated Cost Engineering System (TRACES) Eff. Date 10/03/96 PROJECT EXOFF : SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL							Т	TIME 07:42:35	
Eff. Date 10/03/96	R	LT EXOFF_: ISK-BASED ALT OJECT OWNER S	FERNATIVE	1 - Constr	uction (exc	off3)		SUMMA	RY PAGE 2
	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 33.33 Well Installation	1.00 EA 1.00 EA	423,050 5,240	8,460 0	12,950 160	111,110 0	19,450 190	46,000 450	621,020 6,030	621019.20 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

Fri 12 Oct 2001 Eff. Date 10/03/96	Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF : SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL	TIME 07:42:35
ERROR REPORT	RISK-BASED ALTERNATIVE 1 - Construction (exoff3)	ERROR PAGE 1

No errors detected...

\* \* \* END OF ERROR REPORT \* \* \*

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 1 - Construction (exoff3)

SUMMARY	REPORTS	SUMMARY P	AGE
PROJECT	OWNER SUMMARY - SUBSYSTM		1
DETAILE	D ESTIMATE	DETAIL P/	AGE
33. Re	medial Action		
	Mobilization Sampling, & Testing		1
		eas	
	-	Road	
03.	Site Work D2 Clearing and Grubbing	••••••	2
	08. Survey Remediation Area	•••••••••••••••••••••••••••••••••••••••	2
04.			
05.	Wastewater 1 Wastewater		3
	Air Stripping		
10.	Soil Remediation 02. Sitework - Soils		3
	Confirmatory Soil Borings	••••••	
20.	Demobilization 04. Decontaminate Equipment		5
31			
		• • • • • • • • • • • • • • • • • • • •	

No Backup Reports...

\* \* \* END TABLE OF CONTENTS \* \* \*

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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%

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LABOR ID: NAT99A EQUIP ID: NAT97C

Currency in DOLLARS

#### 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 2,3,4,0ther 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:

LABOR ID: NAT99A EQUIP ID: NAT97C

Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 2-Trespasser (exoff3)

\_\_\_\_\_

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	В	-	Productivity	%
3.	Level	of	Protection	С	-	Productivity	%
4.	Level	of	Protection	D	-	Productivity	85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

Availiable Time (minutes)	Level 480	A Level 480		C Level D 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%	-	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%

RISK-BASED ALTERNATIVE 2-Trespasser (exoff3) DETAIL PAGE 1 DETAILED ESTIMATE 33. Remedial Action \_\_\_\_\_ QUANTY UOM MANHOUR LABOR EQUIPMNT MATERIAL SUBCONTR TOTAL COST UNIT COST 33.01. Mobilization ------33. Remedial Action 33.01. Mobilization 1.00 EA n 793 2,500 535 ٥ 3,828 3827.72 USR AA Mobilization 33.02. Sampling, & Testing 33.02.06. Groundwater Groundwater - from holding tanks 0 2.625 175.00 HTW AA For Disposal: NYSDEC CLP TCL 15.00 EA 0 0 0 2,625 VOCs, volatile organics , groundwater (Severn Trent Lab 9/98) (Assume 1 sample for each tank) 15.00 EA n ٥ n ٥ 5,550 5,550 370.00 AFH AA For Disposal: NYSDEC CLP TAL SVOCs modified , groundwater, (Severn Trent Lab, 9/98) (Assume 1 sample per tank) n 2,325 2,325 155.00 AFH AA For Disposal: NYSDEC TAL -15.00 EA ٥ 0 n Inorganics, groundwater (Severn Trent Lab, 9/98) (Assume 1 sample per tank) 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 260.00 EA 0 0 0 0 31,200 31,200 120.00 HTW AA For Disposal: TCLP, volatile organics (SW-846 Methods 1311&8240), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) 0 0 0 0 59,800 59,800 230.00 AFH AA For Disposal: TCLP-SVOCs 260.00 FA (SW-846 Methods 1311 & 8270A), 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 - Metals (SW-846 Methods 1311 & 6010 & 7470), soil (Severn Trent Lab, 9/99) (Assume 1 sample every 150cy) 33.02.13. Confirmatory-Soil - All Areas 0 0 0 n 27,300 27,300 175.00 HTW AA Confirmatory: NYSDEC CLP, 156.00 EA volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample every 50 ft of wall adn floor or excavation.

Tri-Service Automated Cost Engineering System (TRACES)

PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL

Fri 12 Oct 2001

Eff. Date 10/03/96

TIME 07:45:15

Eff. Date 10/03/96 PROJECT EXOFF : SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL DETAILED ESTIMATE RISK-BASED ALTERNATIVE 2-Trespasser (exoff3) DETAIL PAGE 33. Remedial Action \_\_\_\_\_ LABOR EQUIPMNT MATERIAL SUBCONTR TOTAL COST 33.02. Sampling, & Testing QUANTY UOM MANHOUR UNIT COST \_\_\_\_\_ -----AFH AA Confirmatory: NYSDEC CLP-SVOCs 156.00 EA 0 0 ۵ 0 57.720 57.720 370.00 , soil (Severn Trent Lab, 9/99) (Assume 1 sample every 50 ft of wall and floor of excavation. AFH AA Confirmatory: NYSDEC CLP TAL - 156.00 EA Ω n Λ Λ 24,180 24,180 155.00 Metals , soil (Severn Trent 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, 60.00 EA n n Ω 0 10,500 10,500 175.00 volatile organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample per boring) AFH AA Confirmatory: NYSDEC CLP-SVOCs 60.00 EA ٥ 0 0 Ω 22,200 22,200 370.00 , soil (Severn Trent Lab, 9/99) (Assume 1 sample per boring) AFH AA Confirmatory: NYSDEC CLP TAL -60.00 EA n ٥ ٥ n 9,300 9.300 155.00 Metals , soil (Severn Trent, 9/99) (Assume 1 sample per boring) 33.02.18. IDW from Soil Borings HTW AA IDW: NYSDEC CLP, volatile 20.00 EA n n Ω Ω 3,500 3,500 175.00 organics, soil (Severn Trent Lab, 9/99) (Assume 1 sample per drum.) AFH AA IDW: NYSDEC CLP-SVOCs , soil 20.00 EA 0 0 0 0 7,400 7,400 370.00 (Severn Trent Lab, 9/99) (Assume 1 sample per drum. AFH AA IDW: NYSDEC CLP TAL - Metals , 20.00 EA n n ٥ n 3,100 3,100 155.00 soil (Severn Trent - assume one sample per drum) 33.03. Site Work 33.03.02. Clearing and Grubbing 1,298 1,887 0 0 AF AA Clearing, brush w/dozer & brush 3.00 ACR 48 3,185 1061.54 rake, light brush 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 16000 LF 3,360 80,000 8,000 25,680 113,680 7.11 0 materials high, polypropylene 2,720 17,120 19,840 B HTW AA Hay bales - stalked 16000 LF 5 0 0 1.24 19,840 B MIL AA Maintain silt fence and remove 16000 LF 107 2,720 0 17,120 0 1.24

Tri-Service Automated Cost Engineering System (TRACES)

Fri 12 Oct 2001

Currency in DOLLARS

CREW ID: NAT99A UPB ID: UP99EA

TIME 07:45:15

2

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 2-Trespasser (exoff3) 33. Remedial Action

3.04.	Fencing		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' I indl, corner post, galv stl, OD		EA	2	55	9	295	0	358	89.4
MIL	AA Fence, CL, double, 24' W, in gates, swing, 6' high	ndl, 1.00	EA	0	0	0	435	0	435	435.3
	33.05. Wastewater									
	33.05. 1. Wastewater									
. MIL	AA Pump, cntfgl,6"D, horiz mtd horiz splt, sgl stg,1500GPM		EA	0	0	0	10,767	0	10,767	10766.8
и нты	AA 21,000 Gal, Steel, hold tan stationary	c 4.00	EA	0	0	0	5,264	0	5,264	1316.1
	33.07. Air Stripping									
HTW	AA HTRW,PTTU,1'dia,14.5'pkng h 30GPM,850CFM,FRP shell	gt, 1.00	EA	97	3,257	0	7,009	0	10,265	10265.4
AFH	AA HTRW,PTTU, >= 12' high, inst air strip tower, 1'- 3' diar		EA	91	3,035	226	0	0	3,261	3261.0
HTW	AA HTRW, PT opt, air flow switt (loss of air flow - motor failure)	:h 1.00	EA	0	0	0	512	0	512	511.8
	33.10. Soil Remediation									
	33.10.02. Sitework - Soil: Excavating Areas Volumes are incre	1,2,3,4, Ot		oversion	and 10%	contingon				
	calculations, the			•		contringenc	y. TOU We	igit		
	All fill, topsoi					liation are	included	in		
	the Sitework - So	oils categor	у.							
USR	AA Excavate, stockpile, screen l		CY	0	0	0	0	658,500	658,500	20.0
USR	(volumes used for estimate and A Plastic sheeting for ground	550000	SF	0	0	0	47,080	0	47,080	0.0
USR	6mil polyethylene liner (10 AA Cover stockpiles w/ plastic sheeting: Plastic sheeting 6mil polyethylene liner (10	550000 :	SF	0	0	0	47,080	0	47,080	0.0
MIL	/ roll; 1 roll = \$75) AA Loam or topsoil, furnish &	6240.00	CY	550	16,661	8,674	121,718	0	147,052	23.5
A.F.	place, imported, 6" deep AA Fill, spread borrow w/dozer	14802	CV.	178	5,329	9,621	0	0	14,950	1.0
AF AF	Compaction, steel wheel tan roller, 5 ton			105	3,108	2,664	0	0	5,773	0.3
				70		0	3,125		4,899	69.7

LABOR ID: NAT99A EQUIP ID: NAT97C

Currency in DOLLARS

## Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 2-Trespasser (exoff3) 33. Remedial Action

	il Remediation	QUANTY				EQUIPMNI			TOTAL COST	UNIT CO
	33.10.04. Drum Removal									
	Approx. 20 drums in	Area 1								
MIL AA	Excavator for drum removal at Level B	20.00	EA	2	323	445	0	0	768	38.
MIL AA	Excavator for drum moving at Level B	20.00	EA	2	323	445	0	0	768	38.
MIL AA	Level B breathing unit, suit, overboots, gloves	4.00	EA	0	0	2,000	0	0	2,000	500.
	33.10.06. Disposal:									
	Disposal and Transpo					waste land	lfill; disp	osal		
	of debris and soil							-		
HTW AA	HW packaging, overpacks, 18"dia x 34"H, 16ga stl drum, 55gal, DOT 17C	a 20.00	EA	0	0	0	1,583	0	1,583	79.
USR AA	Drums/Paint Cans: Transportation	1.00	EA	0	0	0	0	546	546	545
	of Drums by dedicated van					•	0.0/0		2 6/2	
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
USR AA	Extra fees for overpack use	20.00	EA	0	0	0	0	800	800	40
USR AA	Debris: Transport and Dispose nonhaz waste, bulk solid waste	3799.00	TON	0	0	0	0	119,669	119,669	31
HT₩ AA	Soils: Transport and Dispose nonhaz waste, bulk soil (Earthwatch, 7/00)	15196	TON	0	0	0	0	478,674	478,674	31
3	3.18. Confirmatory Soil Borings	-								
CIV AA	Mob/Demob facility	2.00	EA	0	0	0	0	800	800	400
AFH AA	Decon Pad	1.00		0	0	0	0	150	150	150
	Decon Time	40.00		0	0	0	0	6,000	6,000	150
	HW packaging, DOT steel drums, 55 gal,	15.00		0	0	0	0	750	750	50
	Move drums	15.00		0	0	0	0	375	375	25
	Borings, auger holes in earth, no samples, 4" dia	280.00		0	0	0	0	3,920	3,920	14
	Split spoon sampling OD	16.00		0	0	0	0	192	192	12
	Standby Time	4.00		0	0	0	0	600	600	150
AFH AA	Grout Boreholes	280.00	LF	0	0	0	0	1,680	1,680	6
	3.26. Demobilization									
TOTAL	Decontaminate Equipment	1.00	EA	0	1,321	5,000	2,500	0	8,821	8821
TOTAL										

## Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 2-Trespasser (exoff3) 33. Remedial Action

			MANHOUR		EQUIPMNI		SUBCONTR	TOTAL COST	UNIT COST
33.31. Remedial Design									
3 HTW AA Remedial Design Workp	lan 1.00	EA	0	27,600	0	2,568	0	30,168	30168.0
3 HTW AA Preliminary Design Re	port 1.00	EA	0	46,000	0	4,280	0	50,280	50280.0
3 HTW AA Pre-final/Final Desig Including O&M Plan, S QA Plan, Contingency Waste	&A Plan,	EA	0	118,000	0	7,490	0	125,490	125490.0
3 HTW AA Remedial Action Workp including QA/QC Plan,	•	EA	0	47,500	0	2,675	0	50,175	50175.0
3 HTW AA Project Closeout Plan	1.00	EA	0	48,000	0	2,140	0	50,140	50140.0
33.33. Well Installation	n								
3 CIV AA Mob/Demob facility	1.00	EA	0	0	0	0	600	600	600.0
AFH AA Decon Pad	1.00	EA	0	0	0	0	150	150	150.0
B HTW AA Installation of Monit threaded	oring well 4.00	EA	0	0	0	0	2,320	2,320	580.0
. HTW AA Monitor well, drillin auger, 4.25" ID x 8" (		LF	0	0	0	0	720	720	18.0
TOTAL SEAD-59			4,816	430,766				2,424,440	

Fri 12 Oct 2001 Eff. Date 10/03/96	PROJEC	T EXOFF_: RISK-BASED	SEAD-59 - ALTERNATIV	EXCAVATIO	ing System ( DN/OFF-SITE asser (exoff Rounded to	DISPOSAL			IME 07:45:15 RY PAGE 1
	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	•	670		•	21291.88
33.02.11 Soil	1.00 EA	168,800	-	5,170	-	7,760		247,800	247796.91
33.02.13 Confirmatory-Soil	1.00 EA	150,850		4,620	-	6,930	-	221,440	221435.54
33.02.16 Soil Boring Grid 33.02.18 IDW from Soil Bor	1.00 EA 1.00 EA	58,020 19,340		1,780 590		2,670 890	6,310 2,100	85,170 28,390	85167.51 28389.17
33.02.18 IDW ITCH SOTE BOI									20307117
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	<b>39,</b> 050	335,150	58,650	•	1,873,160	1873159.85
33.10.04 Drum Removal	1.00 EA	4,880			•	220		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

Fri 12 Oct 2001		Service Auto CT EXOFF :		-	ing System DN/OFF-SITE			TIME 07:45:15			
Eff. Date 10/03/96		RISK-BASED	ALTERNATIV	/E 2-Trespa	asser (exof	f3)		SUMMA	RY PAGE 2		
	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	•	12,950		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		

Fri 12 Oct 2001			Automated Cost Engineering System (TRACES)	TIME 07:45:15			
Eff. Date 10/03/96 PRC ERROR REPORT		•	_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL SED ALTERNATIVE 2-Trespasser (exoff3)	ERROR PAGE 1			
R2032: 331002	DEW01	Common fill	Detail item has zero quantity - no costs reported				

\* \* \* END OF ERROR REPORT \* \* \*

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT EXOFF\_: SEAD-59 - EXCAVATION/OFF-SITE DISPOSAL RISK-BASED ALTERNATIVE 2-Trespasser (exoff3)

SUMMAR	Y REPORTS	SUMMARY P	AGE
PROJEC	T OWNER SUMMARY - SUBSYSTM		1
DETAIL	ED ESTIMATE	DETAIL P	AGE
33. R	Remedial Action		
01	. Mobilization		1
02	2. Sampling, & Testing		
	06. Groundwater		1
	11. Soil		1
	13. Confirmatory-Soil - All Are	as	1
	16. Soil Boring Grid South of R	oad	2
	18. IDW from Soil Borings		2
03	3. Site Work		
	02. Clearing and Grubbing		2
	08. Survey Remediation Area		2
	11. Erosion control		2
04	Fencing		3
05	. Wastewater		
	1. Wastewater		3
07	7. Air Stripping		3
10	). Soil Remediation		
	02. Sitework - Soils		3
	04. Drum Removal		4
	06. Disposal:		4
18	3. Confirmatory Soil Borings		4
26	5. Demobilization		
	04. Decontaminate Equipment		4
31	1. Remedial Design		5
33	8. Well Installation		5

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%

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EQUIP ID: NAT97C

Currency in DOLLARS

TIME 07:56:19

# \_\_\_\_\_

**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.

 $\cdot$  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:

EQUIP ID: NAT97C

#### Currency in DOLLARS

\_\_\_\_\_

Level of Protection A - Productivity \_\_\_%
 Level of Protection B - Productivity \_\_\_%
 Level of Protection C - Productivity \_\_\_%
 Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

Availiable Time (minutes)	Level 480	A Level 480	B Level 480	C Level D 480
			100	100
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	300/480	370/480	410/480
	X100%	X100%	X100%	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	<b>60-1</b> 40	40-140	30-70

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

 $\cdot$  Time necessary to complete sampling may increase depending on the flow of water.

 $\cdot$  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%

## Tri-Service Automated Cost Engineering System (TRACES) PROJECT ANNUAL: ANNUAL MONITORING COSTS - FOR SEMI-ANNUAL ANNUAL MONITORING - SEAD 59 33. Remedial Action

3.02. Sa	mpling, & Testing		DM MANHOUR	LABOR		MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
33.	Remedial Action								
3	3.02. Sampling, & Testing								
	33.02.01. Health and Safety								
HTW AA	Case of 25, disposable coveralls, Tyvek (Pine	1.00 E	A O	0	0	115	0	115	114.6
	Environmental Services 9/98)								
USR AA	Poly Tyvek (case of 12) (Pine Environmental Services 9/98)	1.00 E	A O	0	0	74	0	74	73.8
HTW AA	First aid kits, 36 ingredients	1.00 E	A 0	0	0	80	0	80	79.9
	Eye prot, safety glasses	2.00 E	A 0	0	0	11	0	11	5.6
	Latex Gloves (100/box) (Pine Environmental Services 9/98)	4.00 B	K O	0	0	42	0	42	10.4
USR AA	North Respirator Cartridges (2 per/pkg) (Pine Environmental Services 9/98)	2.00 P	K 0	0	0	9	0	9	4.4
	33.02.02. Personnel								
AFH AA	Personnel per diem (2 people x 4	18.00 D	AY O	0	0	1,907	0	1,907	105.9
	days x 2 events)								
	Car or van mileage charge	2000.00 M		0	0	706	0	706	0.3
HTW AA	Daily rate, subcontracted	18.00 E	A 0	0	0	0	12,240	12,240	680.0
	33.02.04. Sample Groundwater Groundwater monitori	na coste f		re inclu	ded in thi	s estimate			
	Each monitoring well						•		
USR AA	Turbidimeter Rental (Pine	2.00 W		0	160	0	0	160	80.0
USR AA	Environmental Services 9/98) Hydrolab Rental (Hydrolab Corp.	2.00 W	c 0	0	690	0	0	690	345.0
	9/98)								
USR AA	Bladder Pump Rental (Marschalk Corporation 9/98)	2.00 W	¢ 0	0	190	0	0	190	95.0
USR AA	Pump Controller Rental (Marschalk Corp. 9/98)	2.00 W	¢ 0	0	300	0	0	300	150.0
USR AA	12-volt Compressor Rental	2.00 W	c 0	0	350	0	0	350	175.0
USR AA	(Marschalk Corp. 9/98) Misc. Equipment Rental	2.00 W	¢ 0	0	65	0	0	65	32.5
	(Marschalk Corp. 9/98)								
USR AA	Thermo Environmental 580B (OVM) Rental (US Environmental, 12/98)	2.00 W	¢ 0	0	400	0	0	400	200.0
USR AA	Teflon Tubing (1/4" ID x 3/8") (Pine Environmental Services	1000.00 F	r O	0	0	2,675	0	2,675	2.6
USR AA	9/98) Isobutylene Calibration Gas	2.00 E	A 0	0	0	173	0	173	86.4
	(Pine Environmental Services 9/98)								
USR AA	pH4 Buffer Solution (Cole-Parme	2.00 E	A 0	0	0	22	0	22	11.2
	Instrument Co. 9/98)								

Instrument Co. 9/98)

EQUIP ID: NAT97C

Currency in DOLLARS

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT ANNUAL: ANNUAL MONITORING COSTS - FOR SEMI-ANNUAL ANNUAL MONITORING - SEAD 59

33. Remedial Action

TIME 07:56:19

DETAIL PAGE 2

	Sampling, &	Testing			MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT CO
USR	AA pH7 Buffe	r Solution (Cole-Parme	2.00	EA	0	0	0	22	0	22	11.
	r										
	Instrumen	it Co. 9/98)									
USR		nctivity Solution Ther Instrument Co.	2.00	EA	0	0	0	39	0	39	19
	9/98)										
USR		luctivity Solution mer Instrument Co.	2.00	EA	0	0	0	39	0	39	19
нту ,	AA 32 oz HDP	E bottle, 12/case ng packaging and	72.00	EA	0	0	0	2,372	0	2,372	32
нту ,		eals (package of 10)	8.00	EA	0	0	0	126	0	126	15
		se,safe trans can	2.00		0	0	0	58	0	58	29
AFH	-	ape: Testing, packagin	8.00	EA	0	0	0	13	0	13	1
	g & shippin	ng, per roll									
HTW /	AA Shipping	coolers: Testing,	14.00	EA	0	0	0	0	1,096	1,096	78
	• • •	& shipping, 51# to									
	1 +1	overnight dlvy									
	bag ice	packaging & shipping,	100.00		0	0	0	-		119	
HTW		ice chest, cooler & ic	2.00	EA	0	0	0	0	55	55	2
	e chest										
	33.02.0	)7. Analysis of Groundwa	ter								
AFH		P TAL SVOCs( unit cost ern Trent Lab 9/98)	26.00	EA	0	0	0	0	9,620	9,620	37
AFH	AA NYSDEC CL	P TPH( unit cost from	26.00	EA	0	0	0	0	5,200	5,200	20
		ent Lab 9/98)									
AFH		S (NYSDEC CLP TAL	26.00	EA	0	0	0	0	4,030	4,030	15
	•	s - unit cost from ent Lab 9/98)									
	33.02.1	2. Disposal of IDW									
		Disposal of Investiga	1.00		d Wastes O	0	0	0	134	134	13
USK	(1 drum o	of purge water drums of purge water for 2 f sampling for 12	1.00		0	Ŭ	0	Ū	124	124	21
		Price quoted by Waste									
		nt Inc., 5/99. Includes									
		tax. Does NOT include									
	transport	ation. Price quoted									
		sumption that drums									
		oily liquid of low									
		containing PAHs,									
	metals (a	and does not contain									

Fri 12 Oct 2001	Tri-Service Automated Cost Engineering System (TRACES) PROJECT ANNUAL: ANNUAL MONITORING COSTS - FOR SEMI-ANNUAL ANNUAL MONITORING - SEAD 59 33. Remedial Action					т	TIME 07:56:19		
Eff. Date 10/03/96 DETAILED ESTIMATE						DETA	IL PAGE 3		
33.02. Sampling, & Testing	QUANTY UOM MANHO	UR LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST		
TOTAL ANNUAL MONITORING COSTS		0 0	2,155	8,483	32,494	43,132			

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT ANNUAL: ANNUAL MONITORING COSTS - FOR SEMI-ANNUAL ANNUAL MONITORING - SEAD 59 \*\* PROJECT OWNER SUMMARY - SUBSYSTM (Rounded to 10's) \*\*

SUMMARY PAGE 1

	QUANTY UOM	CONTRACT DE	S CONT	ESCALATN	CONTINGN	OTHER	CON MGMT	TOTAL COST	UNIT COST
								• • • • • • • • • • • • • • • • • • • •	
33 Remedial Action									
33.02 Sampling, & Testing									
55.02 Sampling, a resulty									
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 <b>.36</b>
TOTAL Remedial Action	- 1.00 EA	52,450	0	1,570	0	1,620	0	55,640	55644.36

Fri 12 Oct 2001 Eff. Date 10/03/96 ERROR REPORT

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No errors detected...

\* \* \* END OF ERROR REPORT \* \* \*

# Tri-Service Automated Cost Engineering System (TRACES) PROJECT ANNUAL: ANNUAL MONITORING COSTS - FOR SEMI-ANNUAL ANNUAL MONITORING - SEAD 59

Y REPORTS T OWNER SUMMARY - SUBSYSTM	SUMMARY P/	
ED ESTIMATE	DETAIL P	AGE
 emedial Action Sampling, & Testing 01. Kealth and Safety 02. Personnel 04. Sample Groundwater 07. Analysis of Groundwater 12. Disposal of IDW		1 1 2

No Backup Reports...

\* \* \* END TABLE OF CONTENTS \* \* \*