AR TARGET SHEET

The following document was too large to scan as one unit, therefore, it has been broken down into sections.

EDMC#:	0027912
SECTION:	8 of 8
DOCUMENT #:	DOE/RL-92-67, DRAFT C
TITLE:	Draft RI/FS Report for 1100-EM-1 OU, Hanford

GROUNDWATER REMEDIATION
300 GPM AIR STRIPPING

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HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
GROUNDWATER REMEDIATION
300 GPM, AIR STRIPPING

Designed By:
Estimated By:

Prepared By: USACE/CENPW COST ENGR BRANCH

Date: 12/11/92
Est Construction Time: 50 Days

M C A C E S G O L D E D I T I O N
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HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Alternative Estimates

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "02", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is FY 93. S & A is estimated at 20%, and consists of NPW's Project Management @ 5%, Construction Management @ 10%, and Engineering During Construction @ 5%. See Contingency Notes (Title Page 3) for explanation of Contingency percentages. Contingency was applied at Level 5/6 in the estimate, to allow use of different percentages for the various types of work (see Settings for which percentage was applied). See Detail notes (pg. 1) for explanation of Contractor Indirect percentages used. E&D and Escalation will be added by the NPW-Hanford Project Manager.

Groundwater Remediation, Scheme 2, 300 gpm, Air Stripping

This estimate covers initial construction cost for Extraction Scheme 2, Groundwater Remediation, which includes: 300 gpm flow (3 wells), with Air Stripping, Reverse Osmosis, and Evaporator cleaning, and recharge into ground in a 600 LF, 10' W x 4' D drain trench. The design life of this Scheme is 13 years. O&M costs are estimated separately.

1. Normal Contingency for this level of estimate is 20-30%.
2. Using 50% Contingency for Setup & Testing items, as they are undefined.
3. Using 30% Contingency based on uncertainty of the quantities given.

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1100-EM-1, G.W. REMED., SCHEME 2, AIR STRIPPING
** PROJECT OWNER SUMMARY - LEVEL 2 (Rounded to 1000's) **

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 REMEDIAL ACTION							
02 01 MOBILIZATION & PREPARATORY WORK		10,000	2,000	6,000	18,000		
02 02 MONITOR, SAMPLE, TEST, ANALYSIS		45,000	9,000	11,000	65,000		
02 06 GROUNDWATER COLLECTION & CONTROL		298,000	60,000	93,000	451,000		
02 13 PHYSICAL TREATMENT		2,008,000	402,000	603,000	3,012,000		
02 21 DEMOBILIZATION		8,000	2,000	2,000	11,000		
REMEDIAL ACTION		2,369,000	474,000	714,000	3,557,000		
HANFORD: REMEDIATION		2,369,000	474,000	714,000	3,557,000		

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U.S. Army Corps of Engineers
PROJECT GW300A: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, AIR STRIPPING
** PROJECT OWNER SUMMARY - LEVEL 6 (Rounded to 10's) **

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SUMMARY PAGE 2

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 REMEDIAL ACTION							
02 01 MOBILIZATION & PREPARATORY WORK							
02 01 01 MOB OF EQUIPMENT & PERSONNEL							
02 01 01 01 TRANSPORTATION							
02 01 01 01 01 Equipment Mob, Detailed List							
Equipment Mob, Detailed List		2,120	420	510	3,050		1
TRANSPORTATION		2,120	420	510	3,050		
MOB OF EQUIPMENT & PERSONNEL		2,120	420	510	3,050		
02 01 04 SETUP/CONSTRUCT TEMP FACILITIES							
02 01 04 01 TRAILERS AND BUILDINGS							
02 01 04 01 01 Office Trailers - setup							
02 01 04 01 01 01 Office Trailers - setup	100.00 HR	3,780	760	2,270	6,800	68.01	2
Office Trailers - setup		3,780	760	2,270	6,800		
TRAILERS AND BUILDINGS		3,780	760	2,270	6,800		
02 01 04 02 DECONTAMINATION FACILITIES							
02 01 04 02 01 Personnel Decon Facilities							
02 01 04 02 01 01 Personnel Decon Facilities	80.00 HR	3,020	600	1,810	5,440	68.01	2
Personnel Decon Facilities		3,020	600	1,810	5,440		
02 01 04 02 02 Equip/Vehicle Decon Facilities							
02 01 04 02 02 01 Equip/Vehicle Decon Facilities		1,520	300	910	2,740		2

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
Equip/Vehicle Decon Facilities		1,520	300	910	2,740		
DECONTAMINATION FACILITIES		4,550	910	2,730	8,190		
SETUP/CONSTRUCT TEMP FACILITIES		8,330	1,670	5,000	14,990		
MOBILIZATION & PREPARATORY WORK		10,450	2,090	5,500	18,040		
02 02 MONITOR, SAMPLE, TEST, ANALYSIS							
02 02 91 QA/Safety Monitoring							
02 02 91 01 QA/Safety Monitoring							
02 02 91 01 01 QA/Safety Monitoring							
02 02 91 01 01 01 QA/Safety Monitoring	6.50 WK	44,810	8,960	10,750	64,530	9927.64	1
QA/Safety Monitoring		44,810	8,960	10,750	64,530		
QA/Safety Monitoring		44,810	8,960	10,750	64,530		
QA/Safety Monitoring		44,810	8,960	10,750	64,530		
MONITOR, SAMPLE, TEST, ANALYSIS		44,810	8,960	10,750	64,530		
02 06 GROUNDWATER COLLECTION & CONTROL							
02 06 01 EXTRACTION AND INJECTION WELLS							
02 06 01 01 WELL DRILLING & CONSTRUCTION							
02 06 01 01 01 WELL DRILLING & CONSTRUCTION							
02 06 01 01 01 01 WELL DRILLING & CONSTRUCTION	3.00 EA	202,850	40,570	60,850	304,270	101424.17	1
WELL DRILLING & CONSTRUCTION		202,850	40,570	60,850	304,270		
WELL DRILLING & CONSTRUCTION		202,850	40,570	60,850	304,270		
EXTRACTION AND INJECTION WELLS		202,850	40,570	60,850	304,270		

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 06 02 SUBSURFACE DRAINAGE							
02 06 02 01 INJECTION OF TREATED GROUNDWATER							
02 06 02 01 01 Sump & Discharge Pump							
Sump & Discharge Pump		17,270	3,450	5,180	25,910		1
02 06 02 01 02 Recharge Trenches							
Recharge Trenches	600.00 LF	61,000	12,200	21,960	95,170	158.61	3
INJECTION OF TREATED GROUNDWATER		78,280	15,660	27,140	121,070		
SUBSURFACE DRAINAGE		78,280	15,660	27,140	121,070		
02 06 07 PUMPING/COLLECTION							
02 06 07 04 GROUNDWATER PUMPING F/ REMED ACT							
02 06 07 04 01 Pumping System to A.S./UV Oxid							
02 06 07 04 01 01 Pump, and Control valves		12,480	2,500	3,740	18,720		1
02 06 07 04 01 02 Manhole for Valving	3.00 EA	4,320	860	1,300	6,490	2161.97	1
Pumping System to A.S./UV Oxid		16,800	3,360	5,040	25,200		
GROUNDWATER PUMPING F/ REMED ACT		16,800	3,360	5,040	25,200		
PUMPING/COLLECTION		16,800	3,360	5,040	25,200		
GROUNDWATER COLLECTION & CONTROL		297,930	59,590	93,040	450,550		
02 13 PHYSICAL TREATMENT							
02 13 07 AIR STRIPPING							
02 13 07 05 MOBILIZATION/SETUP/TESTING							

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 13 07 05 01 Mobilization/Setup/Testing							
02 13 07 05 01 01 Mobilization & Setup		2,005,480	401,100	601,640	3,008,210		1
02 13 07 05 01 02 Startup Testing		2,120	420	1,270	3,820		3
Mobilization/Setup/Testing		2,007,600	401,520	602,920	3,012,030		
MOBILIZATION/SETUP/TESTING		2,007,600	401,520	602,920	3,012,030		
02 13 07 10 OPERATION (LONG TERM-OVER 3 YRS)							
AIR STRIPPING		2,007,600	401,520	602,920	3,012,030		
PHYSICAL TREATMENT		2,007,600	401,520	602,920	3,012,030		
02 21 DEMOBILIZATION							
02 21 04 DEMOB OF EQUIPMENT & PERSONNEL							
02 21 04 01 TRANSPORTATION							
02 21 04 01 01 DeMob - Equipment/Facilities							
DeMob - Equipment/Facilities		7,950	1,590	1,910	11,450		1
TRANSPORTATION		7,950	1,590	1,910	11,450		
DEMOB OF EQUIPMENT & PERSONNEL		7,950	1,590	1,910	11,450		
DEMOBILIZATION		7,950	1,590	1,910	11,450		
REMEDIAL ACTION		2,368,740	473,750	714,120	3,556,610		
HANFORD: REMEDIATION		2,368,740	473,750	714,120	3,556,610		

Mon 14 Dec 1992

U.S. Army Corps of Engineers
PROJECT GW300A: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, AIR STRIPPING
** PROJECT INDIRECT SUMMARY - LEVEL 2 (Rounded to 10's) **

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SUMMARY PAGE 6

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 REMEDIAL ACTION									
02 01 MOBILIZATION & PREPARATORY WORK		7,880	1,180	450	760	70	100	10,450	
02 02 MONITOR, SAMPLE, TEST, ANALYSIS		33,800	5,070	1,940	3,270	290	440	44,810	
02 06 GROUNDWATER COLLECTION & CONTROL		224,710	33,710	12,920	21,710	1,930	2,950	297,930	
02 13 PHYSICAL TREATMENT		1,514,250	227,140	87,070	146,280	12,990	19,880	2,007,600	
02 21 DEMOBILIZATION		6,000	900	350	580	50	80	7,950	
REMEDIAL ACTION		1,786,640	268,000	102,730	172,590	15,330	23,450	2,368,740	
HANFORD: REMEDIATION		1,786,640	268,000	102,730	172,590	15,330	23,450	2,368,740	
S & A								473,750	
SUBTOTAL								2,842,490	
CONTINGENCY								714,120	
TOTAL INCL OWNER COSTS								3,556,610	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 REMEDIAL ACTION									
02 01 MOBILIZATION & PREPARATORY WORK									
02 01 01 MOB OF EQUIPMENT & PERSONNEL									
02 01 01 01 TRANSPORTATION									
02 01 01 01 01 Equipment Mob, Detailed List									
Equipment Mob, Detailed List		1,600	240	90	150	10	20	2,120	
TRANSPORTATION		1,600	240	90	150	10	20	2,120	
MOB OF EQUIPMENT & PERSONNEL		1,600	240	90	150	10	20	2,120	
02 01 04 SETUP/CONSTRUCT TEMP FACILITIES									
02 01 04 01 TRAILERS AND BUILDINGS									
02 01 04 01 01 Office Trailers - setup									
02 01 04 01 01 01 Office Trailers - setup	100.00 HR	2,850	430	160	280	20	40	3,780	37.79
Office Trailers - setup		2,850	430	160	280	20	40	3,780	
TRAILERS AND BUILDINGS		2,850	430	160	280	20	40	3,780	
02 01 04 02 DECONTAMINATION FACILITIES									
02 01 04 02 01 Personnel Decon Facilities									
02 01 04 02 01 01 Personnel Decon Facilities	80.00 HR	2,280	340	130	220	20	30	3,020	37.79
Personnel Decon Facilities		2,280	340	130	220	20	30	3,020	
02 01 04 02 02 Equip/Vehicle Decon Facilities									
02 01 04 02 02 01 Equip/Vehicle Decon Facilities		1,150	170	70	110	10	20	1,520	

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U.S. Army Corps of Engineers
PROJECT GW300A: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, AIR STRIPPING
** PROJECT INDIRECT SUMMARY - LEVEL 6 (Rounded to 10's) **

TIME 08:27:21
SUMMARY PAGE 8

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
Equip/Vehicle Decon Facilities		1,150	170	70	110	10	20	1,520	
DECONTAMINATION FACILITIES		3,430	510	200	330	30	50	4,550	
SETUP/CONSTRUCT TEMP FACILITIES		6,280	940	360	610	50	80	8,330	
MOBILIZATION & PREPARATORY WORK		7,880	1,180	450	760	70	100	10,450	
02 02 MONITOR, SAMPLE, TEST, ANALYSIS									
02 02 91 QA/Safety Monitoring									
02 02 91 01 QA/Safety Monitoring									
02 02 91 01 01 QA/Safety Monitoring									
02 02 91 01 01 01 QA/Safety Monitoring	6.50 WK	33,800	5,070	1,940	3,270	290	440	44,810	6894.19
QA/Safety Monitoring		33,800	5,070	1,940	3,270	290	440	44,810	
QA/Safety Monitoring		33,800	5,070	1,940	3,270	290	440	44,810	
QA/Safety Monitoring		33,800	5,070	1,940	3,270	290	440	44,810	
MONITOR, SAMPLE, TEST, ANALYSIS		33,800	5,070	1,940	3,270	290	440	44,810	
02 06 GROUNDWATER COLLECTION & CONTROL									
02 06 01 EXTRACTION AND INJECTION WELLS									
02 06 01 01 WELL DRILLING & CONSTRUCTION									
02 06 01 01 01 WELL DRILLING & CONSTRUCTION									
02 06 01 01 01 01 WELL DRILLING & CONSTRUCTION	3.00 EA	153,000	22,950	8,800	14,780	1,310	2,010	202,850	67616.11
WELL DRILLING & CONSTRUCTION		153,000	22,950	8,800	14,780	1,310	2,010	202,850	
WELL DRILLING & CONSTRUCTION		153,000	22,950	8,800	14,780	1,310	2,010	202,850	
EXTRACTION AND INJECTION WELLS		153,000	22,950	8,800	14,780	1,310	2,010	202,850	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 06 02 SUBSURFACE DRAINAGE									
02 06 02 01 INJECTION OF TREATED GROUNDWATER									
02 06 02 01 01 Sump & Discharge Pump									
Sump & Discharge Pump		13,030	1,950	750	1,260	110	170	17,270	
02 06 02 01 02 Recharge Trenches									
Recharge Trenches	600.00 LF	46,010	6,900	2,650	4,440	390	600	61,000	101.67
INJECTION OF TREATED GROUNDWATER		59,040	8,860	3,390	5,700	510	780	78,280	
SUBSURFACE DRAINAGE		59,040	8,860	3,390	5,700	510	780	78,280	
02 06 07 PUMPING/COLLECTION									
02 06 07 04 GROUNDWATER PUMPING F/ REMED ACT									
02 06 07 04 01 Pumping System to A.S./UV Oxid									
02 06 07 04 01 01 Pump, and Control valves		9,410	1,410	540	910	80	120	12,480	
02 06 07 04 01 02 Manhole for Valving	3.00 EA	3,260	490	190	320	30	40	4,320	1441.31
Pumping System to A.S./UV Oxid		12,670	1,900	730	1,220	110	170	16,800	
GROUNDWATER PUMPING F/ REMED ACT		12,670	1,900	730	1,220	110	170	16,800	
PUMPING/COLLECTION		12,670	1,900	730	1,220	110	170	16,800	
GROUNDWATER COLLECTION & CONTROL		224,710	33,710	12,920	21,710	1,930	2,950	297,930	
02 13 PHYSICAL TREATMENT									
02 13 07 AIR STRIPPING									
02 13 07 05 MOBILIZATION/SETUP/TESTING									

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 13 07 05 01 Mobilization/Setup/Testing									
02 13 07 05 01 01 Mobilization & Setup		1,512,650	226,900	86,980	146,120	12,980	19,860	2,005,480	
02 13 07 05 01 02 Startup Testing		1,600	240	90	150	10	20	2,120	
Mobilization/Setup/Testing		1,514,250	227,140	87,070	146,280	12,990	19,880	2,007,600	
MOBILIZATION/SETUP/TESTING		1,514,250	227,140	87,070	146,280	12,990	19,880	2,007,600	
02 13 07 10 OPERATION (LONG TERM-OVER 3 YRS)									
AIR STRIPPING		1,514,250	227,140	87,070	146,280	12,990	19,880	2,007,600	
PHYSICAL TREATMENT		1,514,250	227,140	87,070	146,280	12,990	19,880	2,007,600	
02 21 DEMOBILIZATION									
02 21 04 DEMOB OF EQUIPMENT & PERSONNEL									
02 21 04 01 TRANSPORTATION									
02 21 04 01 01 DeMob - Equipment/Facilities									
DeMob - Equipment/Facilities		6,000	900	350	580	50	80	7,950	
TRANSPORTATION		6,000	900	350	580	50	80	7,950	
DEMOB OF EQUIPMENT & PERSONNEL		6,000	900	350	580	50	80	7,950	
DEMOBILIZATION		6,000	900	350	580	50	80	7,950	
REMEDIAL ACTION		1,786,640	268,000	102,730	172,590	15,330	23,450	2,368,740	
HANFORD: REMEDIATION		1,786,640	268,000	102,730	172,590	15,330	23,450	2,368,740	
S & A								473,750	
SUBTOTAL								2,842,490	
CONTINGENCY								714,120	
TOTAL INCL OWNER COSTS								3,556,610	

0 AA. REMEDIAL GENERAL CONTRACTOR	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

02. REMEDIAL ACTION
02 01. MOBILIZATION & PREPARATORY WORK
02 01 01. MOB OF EQUIPMENT & PERSONNEL

02 01 01 01. TRANSPORTATION

02 01 01 01 01. Equipment Mob, Detailed List

USR AA <01505 1101 > Mob, Field Office Trailer	1.00 EA	0.00	0.00 0	0.00 0	250.00 250	0.00 0	0.00 0	250.00 250	250.00
USR AA <01505 1102 > Mob, Crane, Hy, SP, 16-25 Ton, Rough Terrain, 4WD, 100-mi Rad	1.00 EA	0.00	0.00 0	0.00 0	500.00 500	0.00 0	0.00 0	500.00 500	500.00
USR AA <01505 3102 > Mob, Loader/Backhoe, 1-1.5 CY, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	200.00 200	0.00 0	0.00 0	200.00 200	200.00
USR AA <01505 7111 > Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	125.00 125	0.00 0	0.00 0	125.00 125	125.00
USR AA <01505 7123 > Mob, End Dump trailer, 12 CY, w/CLT8000 Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	125.00 125	0.00 0	0.00 0	125.00 125	125.00
USR AA <01505 8412 > Mob, Compactor, VIB, 32" Plate, 100-mi Radius	2.00 EA	0.00	0.00 0	0.00 0	75.00 150	0.00 0	0.00 0	75.00 150	75.00
USR AA <01505 8431 > Mob, Drill Rig, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	250.00 250	0.00 0	0.00 0	250.00 250	250.00

Mon 14 Dec 1992

DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT GW300A: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, AIR STRIPPING
02. REMEDIAL ACTION

TIME 08:27:21

DETAIL PAGE 2

02 01. MOBILIZATION & PREPARATORY WORK	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
Equipment Mob, Detailed List					0	0	1,600	0	0	1,600	
TRANSPORTATION					0	0	1,600	0	0	1,600	
MOB OF EQUIPMENT & PERSONNEL					0	0	1,600	0	0	1,600	

02 01. MOBILIZATION & PREPARATORY WORK	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 01 04. SETUP/CONSTRUCT TEMP FACILITIES									
02 01 04 01. TRAILERS AND BUILDINGS									
02 01 04 01 01. Office Trailers - setup									
02 01 04 01 01 01. Office Trailers - setup Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added.									
Office Trailers - setup	100.00 HR		0	2,500	250	100	0	2,850	28.50
Office Trailers - setup			0	2,500	250	100	0	2,850	
TRAILERS AND BUILDINGS			0	2,500	250	100	0	2,850	
02 01 04 02. DECONTAMINATION FACILITIES									
02 01 04 02 01. Personnel Decon Facilities									
02 01 04 02 01 01. Personnel Decon Facilities Allow 80 mhrs for setup of Decontamination trailer. This is a self-contained unit which includes changing rooms and showers. An allowance for some equipment and material has been added.									
Personnel Decon Facilities	80.00 HR		0	2,000	200	80	0	2,280	28.50
Personnel Decon Facilities			0	2,000	200	80	0	2,280	
02 01 04 02 02. Equip/Vehicle Decon Facilities									
02 01 04 02 02 01. Equip/Vehicle Decon Facilities Allow 40 mhrs for setup of equipment decon facilities. An allowance for equipment and materials has been added.									
Equip/Vehicle Decon Facilities			0	1,000	100	50	0	1,150	
Equip/Vehicle Decon Facilities			0	1,000	100	50	0	1,150	
DECONTAMINATION FACILITIES			0	3,000	300	130	0	3,430	

Mon 14 Dec 1992

DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT GW300A: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, AIR STRIPPING
02. REMEDIAL ACTION

TIME 08:27:21

DETAIL PAGE 4

02 01. MOBILIZATION & PREPARATORY WORK	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
SETUP/CONSTRUCT TEMP FACILITIES					0	5,500	550	230	0	6,280	

02 02. MONITOR, SAMPLE, TEST, ANALYSIS	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST

02 02. MONITOR, SAMPLE, TEST, ANALYSIS
02 02 91. QA/Safety Monitoring

02 02 91 01. QA/Safety Monitoring

02 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

02 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

WHC HPT: 40 Hrs @ $50/Hr = $2,000
COE Safety Rep: 40 Hrs @ $70/Hr = 2,800
COE S.A. for QA: 8 Hrs @ $50/Hr 400

$5,200/wk

Estimated duration of job is 7 weeks, with 1 week for Mob, Setup, & Demob, so use 6.5 WK.

QA/Safety Monitoring	6.50	WK		0	33,800	0	0	0	33,800	5200.00
QA/Safety Monitoring				0	33,800	0	0	0	33,800	
QA/Safety Monitoring				0	33,800	0	0	0	33,800	
QA/Safety Monitoring				0	33,800	0	0	0	33,800	

02 06. GROUNDWATER COLLECTION & CONTROL	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST

02 06. GROUNDWATER COLLECTION & CONTROL
This feature covers the groundwater collection, control, and recharge system, exclusive of the treatment system. Major equipment suppliers have provided costs for the following items:

well pump: Flint & Walling, United Pipe & Supply
air release valves: APCP Valves
strainer: Hayward Strainer Company Control Factors, Inc.
flow control valves: Griswold Controls
flow meters: Signet

02 06 01. EXTRACTION AND INJECTION WELLS

02 06 01 01. WELL DRILLING & CONSTRUCTION

02 06 01 01 01. WELL DRILLING & CONSTRUCTION

02 06 01 01 01 01. WELL DRILLING & CONSTRUCTION
For Extraction Scheme 2, three 60 VLF wells will be required. A well point type well will probably be all that is needed, however, as the type and construction of the extractions wells has not been defined, it is assumed for this estimate that a monitoring type well may be required. This is a conservative assumption, as well points are much cheaper than monitoring wells. Assume 2 days to drill and 2 days to develope each well.

USR AA <02580 1001 > 6" Dia, Extraction well			0.00	0.00	0.00	0.00	850.00	850.00	
From a recent quote to drill monitoring wells in the 1100 Area, use $850/VLF. This cost includes: drilling, installation and development. All SubContr overhead markups, & all safety items are also covered in the unit cost.	180.00 VLF N/A	0.00	0	0	0	0	153,000	153,000	850.00
WELL DRILLING & CONSTRUCTION	3.00 EA		0	0	0	0	153,000	153,000	51000.00
WELL DRILLING & CONSTRUCTION			0	0	0	0	153,000	153,000	
WELL DRILLING & CONSTRUCTION			0	0	0	0	153,000	153,000	

02 06. GROUNDWATER COLLECTION & CONTROL	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
EXTRACTION AND INJECTION WELLS					0	0	0	0	153,000	153,000	

02 06. GROUNDWATER COLLECTION & CONTROL	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 06 02. SUBSURFACE DRAINAGE											
02 06 02 01. INJECTION OF TREATED GROUNDWATER											
02 06 02 01 01. Sump & Discharge Pump Allow 6 days for two crews.											
M USR AA <02533 1012 > Submersible Sump Pump, 350 GPM, 3 HP, 15' Head, 3" Discharge PACO #401406	1.00	EA	MPLUE	0.50	5.00 5	141.36 141	1.86 2	3880.80 3,881	0.00 0	4024.02 4,024	4024.02
M USR AA <15101 1105 > 3" Bronze, 125# Gate Valve Threaded, Brazed or Soldered	3.00	EA	MPLUE	2.38	1.05 3	29.76 89	0.39 1	80.85 243	0.00 0	111.00 333	111.00
M USR AA <15110 1104 > 4" Single Disc Type Check Valve IB Wafer Type- 125#	1.00	EA	MPLUE	2.00	1.25 1	35.34 35	0.47 0	188.65 189	0.00 0	224.46 224	224.46
M USR AA <15122 1103 > 2" air release valve, APCO #50	1.00	EA	MPLUE	2.00	1.25 1	35.34 35	0.47 0	53.90 54	0.00 0	89.71 90	89.71
M USR AA <02560 5201 > 4' Dia x6' Deep, Precast Manhole 8" Tk, Add: $750 for excavation and backfilling.	1.00	EA	CODEJ	0.25	13.00 13	324.03 324	47.49 47	377.30 377	750.00 750	1498.82 1,499	1498.82
B MIL AA <15064 4111 > 3" PVC Drain & Sewer Pipe	1100.00	LF	MPLUE	30.00	0.08 92	2.36 2,592	0.03 34	0.54 593	0.00 0	2.93 3,219	2.93
L MIL AA <15064 4112 > 4" PVC Drain & Sewer Pipe	375.00	LF	MPLUE	20.00	0.13 47	3.53 1,325	0.05 17	0.65 243	0.00 0	4.23 1,585	4.23
L MIL AA <15064 4121 > 3" 90 Degree Elbow, PVC D&S	5.00	EA	MPLUE	5.00	0.50 3	14.14 71	0.19 1	1.19 6	0.00 0	15.51 78	15.51
L MIL AA <15064 4151 > 3" Tee, PVC Drain & Sewer	3.00	EA	MPLUE	4.00	0.63 2	17.67 53	0.23 1	1.14 3	0.00 0	19.05 57	19.05
M USR AA <15061 2391 > 4" x 2" Reducer, Eccentric	1.00	EA	MPLUE	4.00	0.63 1	17.67 18	0.23 0	7.01 7	0.00 0	24.91 25	24.91
M USR AA <15101 1108 > 2" Bronze 125# Gate Valve Threaded	1.00	EA	MPLUE	2.00	1.25 1	35.34 35	0.47 0	26.95 27	0.00 0	62.76 63	62.76
B USR AA <15173 1108 > Flowmeter, Signet P51530-PO sensor, P58440 display.	3.00	EA	MPLUE	1.00	2.50 8	70.68 212	0.93 3	539.00 1,617	0.00 0	610.61 1,832	610.61

02 06. GROUNDWATER COLLECTION & CONTROL	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
Sump & Discharge Pump			176	4,931	108	7,239	750	13,028	
02 06 02 01 02. Recharge Trenches This item covers installation of a 600 LF, 10' W x 4' D recharge trench. Allow 12 days for installation of trench.									
USR AA <02520 5013 > Exc, 10'x4' Undergrnd Trench Drn			0.06	1.62	0.47	0.00	0.00	2.09	
Excavation, Q: 1,300 CY, use: 1,450 LCY (also includes trench for piping from well to cleaner unit, and to recharge trench).	1450.00 LCY CODEG	25.00	87	2,352	678	0	0	3,030	2.09
L MIL AA <02225 3104 > Haul waste, 12 CY Truck, 1-Mi			0.03	0.66	0.57	0.00	0.00	1.22	
20 MPH, 4.2 Cycles/Hr. Assume waste soil hauled to a close by area for dumping.	1450.00 LCY COEID	40.00	36	957	819	0	0	1,776	1.22
USR AA <02520 5013 > Backfill w/ Pipe bedding & Cmpct			0.22	5.40	0.79	26.95	0.00	33.14	
Assume pipe bedding bought and delivered for $25/LCY.	1100.00 LCY CODEJ	15.00	238	5,941	871	29,645	0	36,456	33.14
USR AA <02511 2105 > 12" D, Perf PVC Pipe, Underdrain			0.13	3.24	0.47	4.04	0.00	7.76	
	600.00 LF CODEJ	25.00	78	1,944	285	2,426	0	4,655	7.76
B MIL AA <15064 4153 > 12" Tee, PVC Drain & Sewer			0.63	17.67	0.23	21.56	0.00	39.46	
	1.00 EA MPLUE	4.00	1	18	0	22	0	39	39.46
B MIL AA <15064 4165 > 12"x4" Reducer, Drain & Sewer			0.63	17.67	0.23	37.73	0.00	55.63	
	1.00 EA MPLUE	4.00	1	18	0	38	0	56	55.63
Recharge Trenches	600.00 LF		441	11,229	2,654	32,130	0	46,012	76.69
INJECTION OF TREATED GROUNDWATER			617	16,160	2,762	39,369	750	59,040	
SUBSURFACE DRAINAGE			617	16,160	2,762	39,369	750	59,040	

02 06. GROUNDWATER COLLECTION & CONTROL	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 06 07. PUMPING/COLLECTION											
02 06 07 04. GROUNDWATER PUMPING F/ REMED ACT											
02 06 07 04 01. Pumping System to A.S./UV Oxid											
02 06 07 04 01 01. Pump, and Control valves Estimate 5 days for two crews.											
B MIL AA <15061 1108 > 3" D, Galv Steel Pipe					0.38	10.87	0.14	4.04	0.00	15.06	
ASTM A-53, T&C, Sch 40	150.00	LF	MPLUE	6.50	58	1,631	21	606	0	2,259	15.06
M USR AA <15083 1108 > 4" Simplex Basket Strainer.					1.25	35.34	0.47	652.19	0.00	688.00	
Hayward Co., flanged connections	1.00	EA	MPLUE	2.00	1	35	0	652	0	688	688.00
Model 72, cast iron.											
M USR AA <15101 1105 > 1" Bronze, 125# Gate Valve					1.05	29.76	0.39	16.17	0.00	46.32	
Threaded, Brazed or Soldered	3.00	EA	MPLUE	2.38	3	89	1	49	0	139	46.32
M USR AA <15110 1103 > 3" Single Disc Type Check Valve					1.25	35.34	0.47	134.75	0.00	170.56	
IB Wafer Type- 125#	3.00	EA	MPLUE	2.00	4	106	1	404	0	512	170.56
M USR AA <15121 1106 > 3" Auto pressure-compensating					1.25	35.34	0.47	603.68	0.00	639.49	
constant-flow control valve.	1.00	EA	MPLUE	2.00	1	35	0	604	0	639	639.49
Griswold Controls model #3332A.											
M USR AA <15146 2001 > 100 GPH Submersible Pump					20.00	576.14	86.32	970.20	0.00	1632.67	
6" Disch for Wells, 50-150'Deep	3.00	EA	MPLUS	0.18	60	1,728	259	2,911	0	4,898	1632.67
F&W #6P080A05, 5 HP											
M USR AA <15122 1103 > 1" air release valve, APCO #50					1.25	35.34	0.47	32.34	0.00	68.15	
	1.00	EA	MPLUE	2.00	1	35	0	32	0	68	68.15
B USR AA <15182 1008 > Fbgs Cover for 4" D Pipe, 2" Thk					0.10	2.00	0.05	2.43	0.00	4.48	
With Fire Retardant Jacket	30.00	LF	N/A	0.00	3	60	2	73	0	134	4.48
M USR AA <15061 2391 > 3" x 1" Reducer, Eccentric					0.63	17.67	0.23	7.01	0.00	24.91	
	3.00	EA	MPLUE	4.00	2	53	1	21	0	75	24.91
Pump, and Control valves					133	3,774	287	5,352	0	9,412	

02 06. GROUNDWATER COLLECTION & CONTROL	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 06 07 04 01 02. Manhole for Valving Estimate 2 days.									
M USR AA <02560 5201 > 4' Dia x4' Deep, Precast Manhole			13.00	324.03	47.49	215.60	500.00	1087.12	
8" Tk, Add: $500 for excavation and backfilling.	3.00 EA CODEJ	0.25	39	972	142	647	1,500	3,261	1087.12
Manhole for Valving	3.00 EA		39	972	142	647	1,500	3,261	1087.12
Pumping System to A.S./UV Oxid			172	4,746	429	5,999	1,500	12,674	
GROUNDWATER PUMPING F/ REMED ACT			172	4,746	429	5,999	1,500	12,674	
PUMPING/COLLECTION			172	4,746	429	5,999	1,500	12,674	

02 13. PHYSICAL TREATMENT	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 13. PHYSICAL TREATMENT									
02 13 07. AIR STRIPPING									
02 13 07 05. MOBILIZATION/SETUP/TESTING									
02 13 07 05 01. Mobilization/Setup/Testing Assume 1 week needed for Mob-in, setup, and testing.									
02 13 07 05 01 01. Mobilization & Setup									
USR AA <01944 8001 > Mob of Air stripper/Rev Osmosis			0.00	0.00	1380000	0.00	0.00	1380000.00	
Assume at 10% of unit cost.	0.10 PCT	0.00	0	0	138,000	0	0	138,000	1380000.00
USR AA <01944 8001 > 300 gpm, Air Stripper Unit			0.00	0.00	0.00	0.00	24000.00	24000.00	
4' D x 25' Tower, 15' packing, 3 HP blower. Cost from Frank Lenzo, Hydro Group, Bridgeport, NJ, 1-800-524-2725.	1.00 LS	0.00	0	0	0	0	24,000	24,000	24000.00
USR AA <01944 8001 > Concrete pad, assume 10'x10'			0.00	0.00	0.00	646.80	0.00	646.80	
Cost for 2.0 CY @ $300/CY	1.00 LS	0.00	0	0	0	647	0	647	646.80
USR AA <01944 8001 > 300 gpm, Reverse Osmosis Unit			0.00	0.00	0.00	0.00	350000.00	350000.00	
Culligan brand. Cost from Frank Rouse, Water Quality Control, WA (Includes multi-media filters)	1.00 LS	0.00	0	0	0	0	350,000	350,000	350000.00
USR AA <01944 8001 > 300 gpm, Evaporator Unit			0.00	0.00	0.00	0.00	1000000	1000000.00	
Budget cost for evaporator unit from Stan Macek, Dedert Corp., Evaporator Division, Olympia Fields, IL.	1.00 LS	0.00	0	0	0	0	1,000,000	1,000,000	1000000.00
Mobilization & Setup			0	0	138,000	647	1,374,000	1,512,647	
02 13 07 05 01 02. Startup Testing Assume a week of testing needed.									
Startup Testing			0	1,250	250	100	0	1,600	
Mobilization/Setup/Testing			0	1,250	138,250	747	1,374,000	1,514,247	
MOBILIZATION/SETUP/TESTING			0	1,250	138,250	747	1,374,000	1,514,247	

02 13. PHYSICAL TREATMENT	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 13 07 10. OPERATION (LONG TERM-OVER 3 YRS)											
O & M costs will be estimated separately.											
OPERATION (LONG TERM-OVER 3 YRS)					0	0	0	0	0	0	
AIR STRIPPING					0	1,250	138,250	747	1,374,000	1,514,247	

02 21. DEMOBILIZATION	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 21. DEMOBILIZATION									
02 21 04. DEMOB OF EQUIPMENT & PERSONNEL									
02 21 04 01. TRANSPORTATION									
02 21 04 01 01. DeMob - Equipment/Facilities Assume Demob at 75% of Mob and Setup.									
DeMob - Equipment/Facilities			0	0	6,000	0	0	6,000	
TRANSPORTATION			0	0	6,000	0	0	6,000	
DEMOB OF EQUIPMENT & PERSONNEL			0	0	6,000	0	0	6,000	
HANFORD: REMEDIATION			789	61,456	149,591	46,344	1,529,250	1,786,641	

Mon 14 Dec 1992

U.S. Army Corps of Engineers
PROJECT GW300A: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, AIR STRIPPING
** CREW BACKUP **

TIME 08:30:26

BACKUP PAGE 1

SRC	ITEM ID	DESCRIPTION	NO.	UOM	RATE	**** LABOR **** HOURS	COST	**** EQUIP **** HOURS	COST	TOTAL COST
	CODEG	1 B-eqoprmed + 1 Backhoe Loader, 55 Hp			PROD = 100%				CREW HOURS =	58
MIL	B-LABORER L	Laborer (Semi-Skilled)	0.50	HR	23.33	0.50	11.67			11.67
MIL	B-EQOPRMEDF	Eq Oper, Medium	1.00	HR	28.89	1.00	28.89			28.89
MIL	L50CS002 E	LDR,W/BH,WH,1.0CY FE BKT/24"DIP	1.00	HR	11.69			1.00	11.69	11.69
	TOTAL					1.50	40.56	1.00	11.69	52.25
	CODEJ	2 B-laborer + 1 Backhoe Loader, 55 Hp			PROD = 100%				CREW HOURS =	113
MIL	B-LABORER F	Laborer (Semi-Skilled)	0.25	HR	23.83	0.25	5.96			5.96
MIL	B-LABORER L	Laborer (Semi-Skilled)	2.00	HR	23.33	2.00	46.66			46.66
MIL	B-EQOPRMEDL	Eq Oper, Medium	1.00	HR	28.39	1.00	28.39			28.39
MIL	L50CS002 E	LDR,W/BH,WH,1.0CY FE BKT/24"DIP	1.00	HR	11.69			1.00	11.69	11.69
MIL	XMIXX020 E	Small Tools	0.13	HR	1.39			0.13	0.18	0.18
	TOTAL					3.25	81.01	1.13	11.87	92.88
	COEID	1 B-trkdvrhv + 1 Dump Truck, 12 Cy			PROD = 100%				CREW HOURS =	36
MIL	B-TRKDVRHVL	Truck Drivers, Heavy	1.00	HR	26.39	1.00	26.39			26.39
MIL	T40XX010 E	TRUCK OPT,REAR DUMP BODY, 12 CY	1.00	HR	2.63			1.00	2.63	2.63
MIL	T50GM016 E	TRK, HWY, 3 AXLE, 41000 GVW, 6X	1.00	HR	19.97			1.00	19.97	19.97
	TOTAL					1.00	26.39	2.00	22.60	48.99
	MPLUE	1 B-plumber + Small Tools			PROD = 100%				CREW HOURS =	94
MIL	B-LABORER L	Laborer (Semi-Skilled)	1.00	HR	23.33	1.00	23.33			23.33
MIL	B-PLUMBER L	Plumbers	1.00	HR	31.40	1.00	31.40			31.40
MIL	B-PLUMBER F	Plumbers	0.50	HR	31.90	0.50	15.95			15.95
MIL	XMIXX020 E	Small Tools	0.67	HR	1.39			0.67	0.93	0.93
	TOTAL					2.50	70.68	0.67	0.93	71.61
	MPLUS	2 B-plumber + 1- 14 Ton Crane, Hydraulic			PROD = 100%				CREW HOURS =	17
MIL	B-LABORER L	Laborer (Semi-Skilled)	1.00	HR	23.33	1.00	23.33			23.33
MIL	B-EQOPRMEDL	Eq Oper, Medium	0.50	HR	28.39	0.50	14.20			14.20
MIL	B-PLUMBER F	Plumbers	1.00	HR	31.90	1.00	31.90			31.90
MIL	B-PLUMBER L	Plumbers	1.00	HR	31.40	1.00	31.40			31.40
MIL	C75GV001 E	CRANE,HYD,SELF,ROUGH TER,4WD,18	0.50	HR	28.66			0.50	14.33	14.33
MIL	XMIXX020 E	Small Tools	0.56	HR	1.39			0.56	0.78	0.78
	TOTAL					3.50	100.83	1.06	15.11	115.93

Mon 14 Dec 1992

U.S. Army Corps of Engineers
PROJECT GW300A: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, AIR STRIPPING
** LABOR BACKUP **

TIME 08:30:26

BACKUP PAGE 2

SRC	LABOR ID	DESCRIPTION	BASE	OVERTM	TXS/INS	FRNG	TRVL	RATE	UOM	UPDATE	**** TOTAL **** DEFAULT	HOURS
MIL	B-EQOPRMED	Equipment Operator, Medium	28.39	0.0%	0.0%	0.00	0.00	28.39	HR	10/15/92	26.13	180
MIL	B-LABORER	Laborer/Helper	23.33	0.0%	0.0%	0.00	0.00	23.33	HR	10/15/92	22.36	395
MIL	B-PLUMBER	Plumbers	31.40	0.0%	0.0%	0.00	0.00	31.40	HR	10/15/92	31.73	175
MIL	B-TRKDVRHV	Truck Drivers, Heavy	26.39	0.0%	0.0%	0.00	0.00	26.39	HR	10/15/92	25.61	36

SRC	EQUIP ID	DESCRIPTION	DEPR	CAPT	FUEL	FOG	EQ REP	TR WR	TR REP	TOTAL	UOM	** TOTAL ** HOURS
MIL	C75GV001	CRANE,HYD,SELF,ROUGH TER,4WD,18T	9.20	3.48	3.62	1.0	9.89	1.20	0.18	28.66	HR	9
MIL	L50CS002	LDR,W/BH,WH,1.0CY FE BKT/24"DIP	3.42	1.16	1.86	0.6	4.04	0.53	0.08	11.69	HR	171
MIL	T40XX010	TRUCK OPT,REAR DUMP BODY, 12 CY	1.15	0.28		0.0	1.11			2.63	HR	36
MIL	T50GM016	TRK, HWY, 3 AXLE, 41000 GVW, 6X4	4.17	1.08	7.46	2.0	3.69	1.29	0.19	19.97	HR	36
MIL	XMIXX020	Small Tools	0.46	0.17	0.13	0.0	0.57			1.39	HR	87

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9 3 1 2 9 1 3 1 9 6 2

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/01/93

PROJECT DIRECT COST COLUMNS

Col Type	H	L	E	M	U
Rep Width	8	10	10	12	10
Title	MHRS	LABR	EQUIP	MAT	OTHER

PROJECT INDIRECT COST COLUMNS

Col Type	O	U	P	B	U
Rep Width	9	9	9	9	9
Title	FOOH	HOOH	PROF	BOND	B&O TAX

PROJECT OWNER COST COLUMNS

Col Type	U	U	X	X	X
Rep Width	12	12	0	0	0
Title	S & A	CONTG	(Unused)	(Unused)	(Unused)

PROJECT BREAKDOWN

PROJECT ID	Length	Trail Sep	Level Title	2nd View Order
Level 1 ID :	2		Des/Actn	0
Level 2 ID :	2		Feature	0
Level 3 ID :	2		SubFeat	0
Level 4 ID :	2		System	0
Level 5 ID :	4		Bid Item	0
Level 6 ID :	4	-	Task	0

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

Col Type	X	X	X	X	X
Rep Width	0	0	0	0	0
Title	(Unused)	(Unused)	(Unused)	(Unused)	(Unused)
Shadow	X	X	X	X	X

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 3
Table of Contents Levels : 5

		0	1	2	3	4	5	6	7
ROW OPTIONS	Print Titles at Levels :		Y	Y	Y	Y	Y	Y	
	Print Totals at Levels :		N	N	Y	Y	Y	Y	
	Print Notes at Levels :	Y	Y	Y	Y	Y	Y	Y	Y

Print Unit Cost Row : Y
Print Page Footer : N
Show Cost Codes : Y

COLUMNS OPTIONS
Print Crew Id : Y
Crew Output : Y
Unit Cost : Y

UPB TITLES
No. of Levels to Print : 0
Bracket Titles With : - :
Include titles Notes : Y

N-650

DOE/RL-92-67

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS		SUMMARY FEATURES	
Quantity Columns :	10	Round Totals Column :	T-Tens
Total cost Columns :	12	Contingency Notes :	Yes
Unit Cost Columns :	12	Show Project Totals :	Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y Measurement Units : Original
Link Listing : N

	REPORT FORMAT TYPE			FOR LEVEL (S)
	Direct	Indirect	Owner	0 1 2 3 4 5 6
Detail :	Y			
Project :	N	Y	Y	N Y N N N Y
Contractor :	N	N		N N N N N N N
Division :	N	N	N	Y N N N N N N
System :	N	N	N	Y N N N N N N
2nd View :	N			
Crew :	Y			Y N N N N N N
Labor :	Y			
Equipment :	Y			

** OWNER SETTINGS **

	AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
Project Information Record						
02 REMEDIAL ACTION						
S & A	P	20.00				
CONTINGENCY	P	0.00				
02 01 MOBILIZATION & PREPARATORY WORK						
02 01 01 MOB OF EQUIPMENT & PERSONNEL						
02 01 01 01 TRANSPORTATION						
02 01 01 01 01 Equipment Mob, Detailed List						
S & A	O					
CONTINGENCY	P	20.00				
02 01 04 SETUP/CONSTRUCT TEMP FACILITIES						
02 01 04 01 TRAILERS AND BUILDINGS						
02 01 04 01 01 Office Trailers - setup						
02 01 04 01 01 01 Office Trailers - setup						
S & A	O					
CONTINGENCY	P	50.00				
02 01 04 02 DECONTAMINATION FACILITIES						
02 01 04 02 01 Personnel Decon Facilities						
02 01 04 02 01 01 Personnel Decon Facilities						
S & A	O					
CONTINGENCY	P	50.00				
02 01 04 02 02 Equip/Vehicle Decon Facilities						
02 01 04 02 02 01 Equip/Vehicle Decon Facilities						
S & A	O					
CONTINGENCY	P	50.00				
02 02 MONITOR, SAMPLE, TEST, ANALYSIS						
02 02 91 QA/Safety Monitoring						
02 02 91 01 QA/Safety Monitoring						
02 02 91 01 01 QA/Safety Monitoring						
02 02 91 01 01 01 QA/Safety Monitoring						
S & A	O					
CONTINGENCY	P	20.00				
02 06 GROUNDWATER COLLECTION & CONTROL						
02 06 01 EXTRACTION AND INJECTION WELLS						
02 06 01 01 WELL DRILLING & CONSTRUCTION						
02 06 01 01 01 WELL DRILLING & CONSTRUCTION						

** OWNER SETTINGS **

		AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
02 06 01 01 01 01 WELL DRILLING & CONSTRUCTION							
S & A	O						
CONTINGENCY	P		25.00				
02 06 02 SUBSURFACE DRAINAGE							
02 06 02 01 INJECTION OF TREATED GROUNDWATER							
02 06 02 01 01 Sump & Discharge Pump							
S & A	O						
CONTINGENCY	P		25.00				
02 06 02 01 02 Recharge Trenches							
S & A	O						
CONTINGENCY	P		30.00				
02 06 07 PUMPING/COLLECTION							
02 06 07 04 GROUNDWATER PUMPING F/ REMED ACT							
02 06 07 04 01 Pumping System to A.S./UV Oxid							
02 06 07 04 01 01 Pump, and Control valves							
S & A	O						
CONTINGENCY	P		25.00				
02 06 07 04 01 02 Manhole for Valving							
S & A	O						
CONTINGENCY	P		25.00				
02 13 PHYSICAL TREATMENT							
02 13 07 AIR STRIPPING							
02 13 07 05 MOBILIZATION/SETUP/TESTING							
02 13 07 05 01 Mobilization/Setup/Testing							
02 13 07 05 01 01 Mobilization & Setup							
S & A	O						
CONTINGENCY	P		25.00				
02 13 07 05 01 02 Startup Testing							
S & A	O						
CONTINGENCY	P		50.00				
02 13 07 10 OPERATION (LONG TERM-OVER 3 YRS)							
S & A	O						
CONTINGENCY	O						
02 21 DEMOBILIZATION							
02 21 04 DEMOB OF EQUIPMENT & PERSONNEL							

** OWNER SETTINGS **

		AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
02 21 04 01 TRANSPORTATION							
02 21 04 01 01 DeMob - Equipment/Facilities							
S & A	O						
CONTINGENCY	P		20.00				

** CONTRACTOR SETTINGS **

		AMOUNT	PCT	PCT S	RISK	DIFF	SIZE	PERIOD	INVEST	ASSIST	SUBCON
AA REMEDIAL GENERAL CONTRACTOR											
JOB OFFICE OVERHEAD	P		15.00								
HOME OFFICE OVERHEAD	P		5.00								
PROFIT	P		8.00								
PERFORMANCE BOND	C			(Class: B)							
B & O AND OTHER TAXES	P		1.00								

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9 3 1 2 9 3 3 1 9 7 0

GROUNDWATER REMEDIATION
300 GPM UV OXIDATION

9 3 1 2 9 3 3 1 9 7 1

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9 3 1 2 9 3 1 9 7 2

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
GROUNDWATER REMEDIATION
300 GPM, UV OXIDATION

Designed By:
Estimated By:

Prepared By: USACE/CENPW COST ENGR BRANCH

Date: 12/11/92
Est Construction Time: 50 Days

M C A C E S G O L D E D I T I O N
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HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Alternative Estimates

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "02", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is FY 93. S & A is estimated at 20%, and consists of NPW's Project Management @ 5%, Construction Management @ 10%, and Engineering During Construction @ 5%. See Contingency Notes (Title Page 3) for explanation of Contingency percentages. Contingency was applied at Level 5/6 in the estimate, to allow use of different percentages for the various types of work (see Settings for which percentage was applied). See Detail notes (pg. 1) for explanation of Contractor Indirect percentages used. E&D and Escalation will be added by the NPW-Hanford Project Manager.

Groundwater Remediation, Scheme 2, 300 gpm, UV Oxidation

This estimate covers initial construction cost for Extraction Scheme 2, Groundwater Remediation, which includes: 300 gpm flow (3 wells), with UV Oxidation, Reverse Osmosis, and Evaporator cleaning, and recharge into ground in a 600 LF, 10' W x 4' D drain trench. The design life of this Scheme is 13 years. O&M costs are separately estimated.

1. Normal Contingency for this level of estimate is 20-30%.
2. Using 50% Contingency for Setup & Testing items, as they are undefined.
3. Using 30% Contingency based on uncertainty of the quantities given.

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9 3 1 2 3 1 3 9 7 6

SUMMARY REPORTS — SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 2.....1
PROJECT OWNER SUMMARY - LEVEL 6.....2
PROJECT INDIRECT SUMMARY - LEVEL 2.....6
PROJECT INDIRECT SUMMARY - LEVEL 6.....7

DETAILED ESTIMATE — DETAIL PAGE

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01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & FACILITIES
01. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....3
02. Equip/Vehicle Decon Facilities.....3
02. MONITOR, SAMPLE, TEST, ANALYSIS
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....5
06. GROUNDWATER COLLECTION & CONTROL
01. EXTRACTION AND INJECTION WELLS
01. WELL DRILLING & CONSTRUCTION
01. WELL DRILLING & CONSTRUCTION.....6
02. SUBSURFACE DRAINAGE
01. INJECTION OF TREATED GROUNDWATER
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07. PUMPING/COLLECTION
04. GROUNDWATER PUMPING F/ REMED ACT
01. Pumping System to A.S./UV Oxid.....9
12. CHEMICAL TREATMENT
01. OZONE/HYDROGEN PEROXIDE/UV OXID.
05. MOBILIZATION/SETUP/TESTING
01. Purchase, Mob, Setup, & Testing.....11
10. OPERATION (LONG TERM-OVER 3 YRS).....11
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & FACILITIES
01. TRANSPORTATION
01. DeMob - Equipment/Facilities.....13

BACKUP REPORTS — BACKUP PAGE

CREW BACKUP.....1

LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

U.S. Army Corps of Engineers
PROJECT GW300U: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, UV OXIDATION
** PROJECT OWNER SUMMARY - LEVEL 2 (Rounded to 1000's) **

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 REMEDIAL ACTION							
02 01 MOBILIZATION & PREPARATORY WORK		10,000	2,000	6,000	18,000		
02 02 MONITOR, SAMPLE, TEST, ANALYSIS		45,000	9,000	11,000	65,000		
02 06 GROUNDWATER COLLECTION & CONTROL		298,000	60,000	93,000	451,000		
02 12 CHEMICAL TREATMENT		2,205,000	441,000	1,037,000	3,683,000		
02 21 DEMOBILIZATION		8,000	2,000	2,000	11,000		
REMEDIAL ACTION		2,566,000	513,000	1,148,000	4,228,000		
HANFORD: REMEDIATION		2,566,000	513,000	1,148,000	4,228,000		

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 REMEDIAL ACTION							
02 01 MOBILIZATION & PREPARATORY WORK							
02 01 01 MOB OF EQUIPMENT & FACILITIES							
02 01 01 01 TRANSPORTATION							
02 01 01 01 01 Equipment Mob, Detailed List							
Equipment Mob, Detailed List		2,120	420	510	3,050		1
TRANSPORTATION		2,120	420	510	3,050		
MOB OF EQUIPMENT & FACILITIES		2,120	420	510	3,050		
02 01 04 SETUP/CONSTRUCT TEMP FACILITIES							
02 01 04 01 TRAILERS AND BUILDINGS							
02 01 04 01 01 Office Trailers - setup							
02 01 04 01 01 01 Office Trailers - setup	100.00 HR	3,780	760	2,270	6,800	68.01	2
Office Trailers - setup		3,780	760	2,270	6,800		
TRAILERS AND BUILDINGS		3,780	760	2,270	6,800		
02 01 04 02 DECONTAMINATION FACILITIES							
02 01 04 02 01 Personnel Decon Facilities							
02 01 04 02 01 01 Personnel Decon Facilities	80.00 HR	3,020	600	1,810	5,440	68.01	2
Personnel Decon Facilities		3,020	600	1,810	5,440		
02 01 04 02 02 Equip/Vehicle Decon Facilities							
02 01 04 02 02 01 Equip/Vehicle Decon Facilities		1,520	300	910	2,740		2

Mon 14 Dec 1992

U.S. Army Corps of Engineers
PROJECT GW300U: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, UV OXIDATION
** PROJECT OWNER SUMMARY - LEVEL 6 (Rounded to 10's) **

TIME 08:37:00
SUMMARY PAGE 3

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
Equip/Vehicle Decon Facilities		1,520	300	910	2,740		
DECONTAMINATION FACILITIES		4,550	910	2,730	8,180		
SETUP/CONSTRUCT TEMP FACILITIES		8,330	1,670	5,000	14,990		
MOBILIZATION & PREPARATORY WORK		10,450	2,090	5,500	18,040		
02 02 MONITOR, SAMPLE, TEST, ANALYSIS							
02 02 91 QA/Safety Monitoring							
02 02 91 01 QA/Safety Monitoring							
02 02 91 01 01 QA/Safety Monitoring							
02 02 91 01 01 01 QA/Safety Monitoring	6.50 WK	44,810	8,960	10,750	64,520	9926.86	1
QA/Safety Monitoring		44,810	8,960	10,750	64,520		
QA/Safety Monitoring		44,810	8,960	10,750	64,520		
QA/Safety Monitoring		44,810	8,960	10,750	64,520		
MONITOR, SAMPLE, TEST, ANALYSIS		44,810	8,960	10,750	64,520		
02 06 GROUNDWATER COLLECTION & CONTROL							
02 06 01 EXTRACTION AND INJECTION WELLS							
02 06 01 01 WELL DRILLING & CONSTRUCTION							
02 06 01 01 01 WELL DRILLING & CONSTRUCTION							
02 06 01 01 01 01 WELL DRILLING & CONSTRUCTION	3.00 EA	202,830	40,570	60,850	304,250	101416.25	1
WELL DRILLING & CONSTRUCTION		202,830	40,570	60,850	304,250		
WELL DRILLING & CONSTRUCTION		202,830	40,570	60,850	304,250		
EXTRACTION AND INJECTION WELLS		202,830	40,570	60,850	304,250		

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 06 02 SUBSURFACE DRAINAGE							
02 06 02 01 INJECTION OF TREATED GROUNDWATER							
02 06 02 01 01 Sump & Discharge Pump							
Sump & Discharge Pump		17,270	3,450	5,180	25,910		1
02 06 02 01 02 Recharge Trenches							
Recharge Trenches	600.00 LF	61,000	12,200	21,960	95,160	158.60	3
INJECTION OF TREATED GROUNDWATER		78,270	15,650	27,140	121,070		
SUBSURFACE DRAINAGE		78,270	15,650	27,140	121,070		
02 06 07 PUMPING/COLLECTION							
02 06 07 04 GROUNDWATER PUMPING F/ REMED ACT							
02 06 07 04 01 Pumping System to A.S./UV Oxid							
02 06 07 04 01 01 Pump, and Control valves		12,480	2,500	3,740	18,720		1
02 06 07 04 01 02 Manhole for Valving	3.00 EA	4,320	860	1,300	6,490	2161.80	1
Pumping System to A.S./UV Oxid		16,800	3,360	5,040	25,200		
GROUNDWATER PUMPING F/ REMED ACT		16,800	3,360	5,040	25,200		
PUMPING/COLLECTION		16,800	3,360	5,040	25,200		
GROUNDWATER COLLECTION & CONTROL		297,900	59,580	93,030	450,520		
02 12 CHEMICAL TREATMENT							
02 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID.							
02 12 01 05 MOBILIZATION/SETUP/TESTING							

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 12 01 05 01 Purchase, Mob, Setup, & Testing							
02 12 01 05 01 01 Purchase of UV Oxidation Unit		397,710	79,540	119,310	596,570		1
02 12 01 05 01 02 Purchase of Reverse Osmosis Unit		464,000	92,800	111,360	668,150		1
02 12 01 05 01 03 Purchase, Evaporator Unit		1,325,700	265,140	795,420	2,386,260		3
02 12 01 05 01 04 Mob, Setup & Testing		17,900	3,580	10,740	32,210		3
Purchase, Mob, Setup, & Testing		2,205,310	441,060	1,036,830	3,683,200		
MOBILIZATION/SETUP/TESTING		2,205,310	441,060	1,036,830	3,683,200		
02 12 01 10 OPERATION (LONG TERM-OVER 3 YRS)							
OZONE/HYDROGEN PEROXIDE/UV OXID.		2,205,310	441,060	1,036,830	3,683,200		
CHEMICAL TREATMENT		2,205,310	441,060	1,036,830	3,683,200		
02 21 DEMOBILIZATION							
02 21 04 DEMOB OF EQUIPMENT & FACILITIES							
02 21 04 01 TRANSPORTATION							
02 21 04 01 01 DeMob - Equipment/Facilities							
DeMob - Equipment/Facilities		7,950	1,590	1,910	11,450	*	1
TRANSPORTATION		7,950	1,590	1,910	11,450		
DEMOB OF EQUIPMENT & FACILITIES		7,950	1,590	1,910	11,450		
DEMOBILIZATION		7,950	1,590	1,910	11,450		
REMEDIAL ACTION		2,566,420	513,280	1,148,030	4,227,730		
HANFORD: REMEDIATION		2,566,420	513,280	1,148,030	4,227,730		

Mon 14 Dec 1992

U.S. Army Corps of Engineers
PROJECT GW300U: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, UV OXIDATION
** PROJECT INDIRECT SUMMARY - LEVEL 2 (Rounded to 10's) **

TIME 08:37:00

SUMMARY PAGE 6

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 REMEDIAL ACTION									
02 01 MOBILIZATION & PREPARATORY WORK		7,880	1,180	450	760	70	100	10,450	
02 02 MONITOR, SAMPLE, TEST, ANALYSIS		33,800	5,070	1,940	3,270	290	440	44,810	
02 06 GROUNDWATER COLLECTION & CONTROL		224,710	33,710	12,920	21,710	1,900	2,950	297,900	
02 12 CHEMICAL TREATMENT		1,663,500	249,530	95,650	160,690	14,100	21,830	2,205,310	
02 21 DEMOBILIZATION		6,000	900	350	580	50	80	7,950	
REMEDIAL ACTION		1,935,890	290,380	111,310	187,010	16,410	25,410	2,566,420	
HANFORD: REMEDIATION		1,935,890	290,380	111,310	187,010	16,410	25,410	2,566,420	
S & A								513,280	
SUBTOTAL								3,079,700	
CONTINGENCY								1,148,030	
TOTAL INCL OWNER COSTS								4,227,730	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 REMEDIAL ACTION									
02 01 MOBILIZATION & PREPARATORY WORK									
02 01 01 MOB OF EQUIPMENT & FACILITIES									
02 01 01 01 TRANSPORTATION									
02 01 01 01 01 Equipment Mob, Detailed List									
Equipment Mob, Detailed List		1,600	240	90	150	10	20	2,120	
TRANSPORTATION		1,600	240	90	150	10	20	2,120	
MOB OF EQUIPMENT & FACILITIES		1,600	240	90	150	10	20	2,120	
02 01 04 SETUP/CONSTRUCT TEMP FACILITIES									
02 01 04 01 TRAILERS AND BUILDINGS									
02 01 04 01 01 Office Trailers - setup									
02 01 04 01 01 01 Office Trailers - setup	100.00 HR	2,850	430	160	280	20	40	3,780	37.78
Office Trailers - setup		2,850	430	160	280	20	40	3,780	
TRAILERS AND BUILDINGS		2,850	430	160	280	20	40	3,780	
02 01 04 02 DECONTAMINATION FACILITIES									
02 01 04 02 01 Personnel Decon Facilities									
02 01 04 02 01 01 Personnel Decon Facilities	80.00 HR	2,280	340	130	220	20	30	3,020	37.78
Personnel Decon Facilities		2,280	340	130	220	20	30	3,020	
02 01 04 02 02 Equip/Vehicle Decon Facilities									
02 01 04 02 02 01 Equip/Vehicle Decon Facilities		1,150	170	70	110	10	20	1,520	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
Equip/Vehicle Decon Facilities		1,150	170	70	110	10	20	1,520	
DECONTAMINATION FACILITIES		3,430	510	200	330	30	50	4,550	
SETUP/CONSTRUCT TEMP FACILITIES		6,280	940	360	610	50	80	8,330	
MOBILIZATION & PREPARATORY WORK		7,880	1,180	450	760	70	100	10,450	
02 02 MONITOR, SAMPLE, TEST, ANALYSIS									
02 02 91 QA/Safety Monitoring									
02 02 91 01 QA/Safety Monitoring									
02 02 91 01 01 QA/Safety Monitoring									
02 02 91 01 01 01 QA/Safety Monitoring	6.50 WK	33,800	5,070	1,940	3,270	290	440	44,810	6893.65
QA/Safety Monitoring		33,800	5,070	1,940	3,270	290	440	44,810	
QA/Safety Monitoring		33,800	5,070	1,940	3,270	290	440	44,810	
QA/Safety Monitoring		33,800	5,070	1,940	3,270	290	440	44,810	
MONITOR, SAMPLE, TEST, ANALYSIS		33,800	5,070	1,940	3,270	290	440	44,810	
02 06 GROUNDWATER COLLECTION & CONTROL									
02 06 01 EXTRACTION AND INJECTION WELLS									
02 06 01 01 WELL DRILLING & CONSTRUCTION									
02 06 01 01 01 WELL DRILLING & CONSTRUCTION									
02 06 01 01 01 01 WELL DRILLING & CONSTRUCTION	3.00 EA	153,000	22,950	8,800	14,780	1,300	2,010	202,830	67610.83
WELL DRILLING & CONSTRUCTION		153,000	22,950	8,800	14,780	1,300	2,010	202,830	
WELL DRILLING & CONSTRUCTION		153,000	22,950	8,800	14,780	1,300	2,010	202,830	
EXTRACTION AND INJECTION WELLS		153,000	22,950	8,800	14,780	1,300	2,010	202,830	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 06 02 SUBSURFACE DRAINAGE									
02 06 02 01 INJECTION OF TREATED GROUNDWATER									
02 06 02 01 01 Sump & Discharge Pump									
Sump & Discharge Pump		13,030	1,950	750	1,260	110	170	17,270	
02 06 02 01 02 Recharge Trenches									
Recharge Trenches	600.00 LF	46,010	6,900	2,650	4,440	390	600	61,000	101.66
INJECTION OF TREATED GROUNDWATER		59,040	8,860	3,390	5,700	500	770	78,270	
SUBSURFACE DRAINAGE		59,040	8,860	3,390	5,700	500	770	78,270	
02 06 07 PUMPING/COLLECTION									
02 06 07 04 GROUNDWATER PUMPING F/ REMED ACT									
02 06 07 04 01 Pumping System to A.S./UV Oxid									
02 06 07 04 01 01 Pump, and Control valves		9,410	1,410	540	910	80	120	12,480	
02 06 07 04 01 02 Manhole for Valving	3.00 EA	3,260	490	190	320	30	40	4,320	1441.20
Pumping System to A.S./UV Oxid		12,670	1,900	730	1,220	110	170	16,800	
GROUNDWATER PUMPING F/ REMED ACT		12,670	1,900	730	1,220	110	170	16,800	
PUMPING/COLLECTION		12,670	1,900	730	1,220	110	170	16,800	
GROUNDWATER COLLECTION & CONTROL		224,710	33,710	12,920	21,710	1,900	2,950	297,900	
02 12 CHEMICAL TREATMENT									
02 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID.									
02 12 01 05 MOBILIZATION/SETUP/TESTING									

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 12 01 05 01 Purchase, Mob, Setup, & Testing									
02 12 01 05 01 01 Purchase of UV Oxidation Unit		300,000	45,000	17,250	28,980	2,540	3,940	397,710	
02 12 01 05 01 02 Purchase of Reverse Osmosis Unit		350,000	52,500	20,130	33,810	2,970	4,590	464,000	
02 12 01 05 01 03 Purchase, Evaporator Unit		1,000,000	150,000	57,500	96,600	8,480	13,130	1,325,700	
02 12 01 05 01 04 Mob, Setup & Testing		13,500	2,030	780	1,300	110	180	17,900	
Purchase, Mob, Setup, & Testing		1,663,500	249,530	95,650	160,690	14,100	21,830	2,205,310	
MOBILIZATION/SETUP/TESTING		1,663,500	249,530	95,650	160,690	14,100	21,830	2,205,310	
02 12 01 10 OPERATION (LONG TERM-OVER 3 YRS)									
OZONE/HYDROGEN PEROXIDE/UV OXID.		1,663,500	249,530	95,650	160,690	14,100	21,830	2,205,310	
CHEMICAL TREATMENT		1,663,500	249,530	95,650	160,690	14,100	21,830	2,205,310	
02 21 DEMOBILIZATION									
02 21 04 DEMOB OF EQUIPMENT & FACILITIES									
02 21 04 01 TRANSPORTATION									
02 21 04 01 01 DeMob - Equipment/Facilities									
DeMob - Equipment/Facilities		6,000	900	350	580	50	80	7,950	
TRANSPORTATION		6,000	900	350	580	50	80	7,950	
DEMOB OF EQUIPMENT & FACILITIES		6,000	900	350	580	50	80	7,950	
DEMOBILIZATION		6,000	900	350	580	50	80	7,950	
REMEDIAL ACTION		1,935,890	290,380	111,310	187,010	16,410	25,410	2,566,420	
HANFORD: REMEDIATION		1,935,890	290,380	111,310	187,010	16,410	25,410	2,566,420	
S & A								513,280	
SUBTOTAL								3,079,700	
CONTINGENCY								1,148,030	
TOTAL INCL OWNER COSTS								4,227,730	

0 AA. REMEDIAL GENERAL CONTRACTOR	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

02. REMEDIAL ACTION
02 01. MOBILIZATION & PREPARATORY WORK
02 01 01. MOB OF EQUIPMENT & FACILITIES

02 01 01 01. TRANSPORTATION

02 01 01 01 01. Equipment Mob, Detailed List

USR AA <01505 1101 > Mob, Field Office Trailer	1.00 EA	0.00	0.00 0	0.00 0	250.00 250	0.00 0	0.00 0	250.00 250	250.00
USR AA <01505 1102 > Mob, Crane, Hy, SP, 16-25 Ton, Rough Terrain, 4WD, 100-mi Rad	1.00 EA	0.00	0.00 0	0.00 0	500.00 500	0.00 0	0.00 0	500.00 500	500.00
USR AA <01505 3102 > Mob, Loader/Backhoe, 1-1.5 CY, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	200.00 200	0.00 0	0.00 0	200.00 200	200.00
USR AA <01505 7111 > Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	125.00 125	0.00 0	0.00 0	125.00 125	125.00
USR AA <01505 7123 > Mob, End Dump trailer, 12 CY, w/CLT8000 Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	125.00 125	0.00 0	0.00 0	125.00 125	125.00
USR AA <01505 8412 > Mob, Compactor, VIB, 32" Plate, 100-mi Radius	2.00 EA	0.00	0.00 0	0.00 0	75.00 150	0.00 0	0.00 0	75.00 150	75.00
USR AA <01505 8431 > Mob, Drill Rig, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	250.00 250	0.00 0	0.00 0	250.00 250	250.00

02 01. MOBILIZATION & PREPARATORY WORK	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
Equipment Mob, Detailed List					0	0	1,600	0	0	1,600	
TRANSPORTATION					0	0	1,600	0	0	1,600	
MOB OF EQUIPMENT & FACILITIES					0	0	1,600	0	0	1,600	

02 01. MOBILIZATION & PREPARATORY WORK	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 01 04. SETUP/CONSTRUCT TEMP FACILITIES									
02 01 04 01. TRAILERS AND BUILDINGS									
02 01 04 01 01. Office Trailers - setup									
02 01 04 01 01 01. Office Trailers - setup Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added.									
Office Trailers - setup	100.00 HR		0	2,500	250	100	0	2,850	28.50
Office Trailers - setup			0	2,500	250	100	0	2,850	
TRAILERS AND BUILDINGS			0	2,500	250	100	0	2,850	
02 01 04 02. DECONTAMINATION FACILITIES									
02 01 04 02 01. Personnel Decon Facilities									
02 01 04 02 01 01. Personnel Decon Facilities Allow 80 mhrs for setup of Decontamination trailer. This is a self-contained unit which includes changing rooms and showers. An allowance for some equipment and material has been added.									
Personnel Decon Facilities	80.00 HR		0	2,000	200	80	0	2,280	28.50
Personnel Decon Facilities			0	2,000	200	80	0	2,280	
02 01 04 02 02. Equip/Vehicle Decon Facilities									
02 01 04 02 02 01. Equip/Vehicle Decon Facilities Allow 40 mhrs for setup of equipment decon facilities. An allowance for equipment and materials has been added.									
Equip/Vehicle Decon Facilities			0	1,000	100	50	0	1,150	
Equip/Vehicle Decon Facilities			0	1,000	100	50	0	1,150	
DECONTAMINATION FACILITIES			0	3,000	300	130	0	3,430	

02 01. MOBILIZATION & PREPARATORY WORK	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
SETUP/CONSTRUCT TEMP FACILITIES					0	5,500	550	230	0	6,280	

02 02. MONITOR, SAMPLE, TEST, ANALYSIS	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST

02 02. MONITOR, SAMPLE, TEST, ANALYSIS
02 02 91. QA/Safety Monitoring

02 02 91 01. QA/Safety Monitoring

02 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

02 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

WHC HPT: 40 Hrs @ $50/Hr = $2,000
COE Safety Rep: 40 Hrs @ $70/Hr = 2,800
COE S.A. for QA: 8 Hrs @ $50/Hr = 400

$5,200/wk

Estimated duration of job is 7 weeks, with 1 week for Mob, Setup, & Demob,
so use 6.5 WK.

QA/Safety Monitoring	6.50 WK		0	33,800	0	0	0	33,800	5200.00
QA/Safety Monitoring			0	33,800	0	0	0	33,800	
QA/Safety Monitoring			0	33,800	0	0	0	33,800	
QA/Safety Monitoring			0	33,800	0	0	0	33,800	

02 06. GROUNDWATER COLLECTION & CONTROL	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 06. GROUNDWATER COLLECTION & CONTROL									
02 06 01. EXTRACTION AND INJECTION WELLS									
02 06 01 01. WELL DRILLING & CONSTRUCTION									
02 06 01 01 01. WELL DRILLING & CONSTRUCTION									
02 06 01 01 01 01. WELL DRILLING & CONSTRUCTION For Extraction Scheme 2, three 60 VLF wells will be required. A well point type well will probably be all that is needed, however, as the type and construction of the extractions wells has not been defined, it is assumed for this estimate that a monitoring type well may be required. This is a conservative assumption, as well points are much cheaper than monitoring wells. Assume 2 days to drill and 2 days to develope each well. .									
USR AA <02580 1001 > 6" Dia, Extraction well			0.00	0.00	0.00	0.00	850.00	850.00	
From a recent quote to drill monitoring wells in the 1100 Area, use $850/VLF. This cost includes: drilling, installation and development. All SubContr overhead markups, & all safety items are also covered in the unit cost.	180.00 VLF N/A	0.00	0	0	0	0	153,000	153,000	850.00
WELL DRILLING & CONSTRUCTION	3.00 EA		0	0	0	0	153,000	153,000	51000.00
WELL DRILLING & CONSTRUCTION			0	0	0	0	153,000	153,000	
WELL DRILLING & CONSTRUCTION			0	0	0	0	153,000	153,000	
EXTRACTION AND INJECTION WELLS			0	0	0	0	153,000	153,000	

02 06. GROUNDWATER COLLECTION & CONTROL	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 06 02. SUBSURFACE DRAINAGE											
02 06 02 01. INJECTION OF TREATED GROUNDWATER											
02 06 02 01 01. Sump & Discharge Pump Allow 6 days for two crews.											
M USR AA <02533 1012 > Submersible Sump Pump, 350 GPM, 3 HP, 15' Head, 3" Discharge PACO #401406	1.00	EA	MPLUE	0.50	5.00 5	141.36 141	1.86 2	3880.80 3,881	0.00 0	4024.02 4,024	4024.02
M USR AA <15101 1105 > 3" Bronze, 125# Gate Valve Threaded, Brazed or Soldered	3.00	EA	MPLUE	2.38	1.05 3	29.76 89	0.39 1	80.85 243	0.00 0	111.00 333	111.00
M USR AA <15110 1104 > 4" Single Disc Type Check Valve IB Wafer Type- 125#	1.00	EA	MPLUE	2.00	1.25 1	35.34 35	0.47 0	188.65 189	0.00 0	224.46 224	224.46
M USR AA <15122 1103 > 2" air release valve, APCO #50	1.00	EA	MPLUE	2.00	1.25 1	35.34 35	0.47 0	53.90 54	0.00 0	89.71 90	89.71
M USR AA <02560 5201 > 4' Dia x6' Deep, Precast Manhole 8" Tk, Add: $750 for excavation and backfilling.	1.00	EA	CODEJ	0.25	13.00 13	324.03 324	47.49 47	377.30 377	750.00 750	1498.82 1,499	1498.82
B MIL AA <15064 4111 > 3" PVC Drain & Sewer Pipe	1100.00	LF	MPLUE	30.00	0.08 92	2.36 2,592	0.03 34	0.54 593	0.00 0	2.93 3,219	2.93
L MIL AA <15064 4112 > 4" PVC Drain & Sewer Pipe	375.00	LF	MPLUE	20.00	0.13 47	3.53 1,325	0.05 17	0.65 243	0.00 0	4.23 1,585	4.23
L MIL AA <15064 4121 > 3" 90 Degree Elbow, PVC D&S	5.00	EA	MPLUE	5.00	0.50 3	14.14 71	0.19 1	1.19 6	0.00 0	15.51 78	15.51
L MIL AA <15064 4151 > 3" Tee, PVC Drain & Sewer	3.00	EA	MPLUE	4.00	0.63 2	17.67 53	0.23 1	1.14 3	0.00 0	19.05 57	19.05
M USR AA <15061 2391 > 4" x 2" Reducer, Eccentric	1.00	EA	MPLUE	4.00	0.63 1	17.67 18	0.23 0	7.01 7	0.00 0	24.91 25	24.91
M USR AA <15101 1108 > 2" Bronze 125# Gate Valve Threaded	1.00	EA	MPLUE	2.00	1.25 1	35.34 35	0.47 0	26.95 27	0.00 0	62.76 63	62.76
B USR AA <15173 1108 > Flowmeter, Signet P51530-PO sensor, P58440 display.	3.00	EA	MPLUE	1.00	2.50 8	70.68 212	0.93 3	539.00 1,617	0.00 0	610.61 1,832	610.61

02 06. GROUNDWATER COLLECTION & CONTROL	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
Sump & Discharge Pump			176	4,931	108	7,239	750	13,028	
02 06 02 01 02. Recharge Trenches This item covers installation of a 600 LF, 10' W x 4' D recharge trench. Allow 12 days for installation of trench.									
USR AA <02520 5013 > Exc, 10'x4' Undergrnd Trench Drn			0.06	1.62	0.47	0.00	0.00	2.09	
Excavation, Q: 1,300 CY, use: 1,450 LCY (also includes trench for piping from well to cleaner unit, and to recharge trench).	1450.00 LCY CODEG	25.00	87	2,352	678	0	0	3,030	2.09
L MIL AA <02225 3104 > Haul waste, 12 CY Truck, 1-Mi,			0.03	0.66	0.57	0.00	0.00	1.22	
20 MPH, 4.2 Cycles/Hr Assume waste soil hauled to a close by area for dumping.	1450.00 LCY COEID	40.00	36	957	819	0	0	1,776	1.22
USR AA <02520 5013 > Backfill w/ Pipe bedding & Cmpct			0.22	5.40	0.79	26.95	0.00	33.14	
Assume pipe bedding bought and delivered for $25/LCY.	1100.00 LCY CODEJ	15.00	238	5,941	871	29,645	0	36,456	33.14
USR AA <02511 2105 > 12" D, Perf PVC Pipe, Underdrain			0.13	3.24	0.47	4.04	0.00	7.76	
	600.00 LF CODEJ	25.00	78	1,944	285	2,426	0	4,655	7.76
B MIL AA <15064 4153 > 12" Tee, PVC Drain & Sewer			0.63	17.67	0.23	21.56	0.00	39.46	
	1.00 EA MPLUE	4.00	1	18	0	22	0	39	39.46
B MIL AA <15064 4165 > 12"x4" Reducer, Drain & Sewer			0.63	17.67	0.23	37.73	0.00	55.63	
	1.00 EA MPLUE	4.00	1	18	0	38	0	56	55.63
Recharge Trenches	600.00 LF		441	11,229	2,654	32,130	0	46,012	76.69
INJECTION OF TREATED GROUNDWATER			617	16,160	2,762	39,369	750	59,040	
SUBSURFACE DRAINAGE			617	16,160	2,762	39,369	750	59,040	

02 06. GROUNDWATER COLLECTION & CONTROL	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 06 07. PUMPING/COLLECTION											
02 06 07 04. GROUNDWATER PUMPING F/ REMED ACT											
02 06 07 04 01. Pumping System to A.S./UV Oxid											
02 06 07 04 01 01. Pump, and Control valves Estimate 5 days for two crews.											
B MIL AA <15061 1108 > 3" D, Galv Steel Pipe					0.38	10.87	0.14	4.04	0.00	15.06	
ASTM A-53, T&C, Sch 40	150.00	LF	MPLUE	6.50	58	1,631	21	606	0	2,259	15.06
M USR AA <15083 1108 > 4" Simplex Basket Strainer.					1.25	35.34	0.47	652.19	0.00	688.00	
Hayward Co., flanged connections	1.00	EA	MPLUE	2.00	1	35	0	652	0	688	688.00
Model 72, cast iron.											
M USR AA <15101 1105 > 1" Bronze, 125# Gate Valve					1.05	29.76	0.39	16.17	0.00	46.32	
Threaded, Brazed or Soldered	3.00	EA	MPLUE	2.38	3	89	1	49	0	139	46.32
M USR AA <15110 1103 > 3" Single Disc Type Check Valve					1.25	35.34	0.47	134.75	0.00	170.56	
IB Wafer Type- 125#	3.00	EA	MPLUE	2.00	4	106	1	404	0	512	170.56
M USR AA <15121 1106 > 3" Auto pressure-compensating					1.25	35.34	0.47	603.68	0.00	639.49	
constant-flow control valve.	1.00	EA	MPLUE	2.00	1	35	0	604	0	639	639.49
Griswold Controls model #3332A.											
M USR AA <15146 2001 > 100 GPM Submersible Pump					20.00	576.14	86.32	970.20	0.00	1632.67	
6" Disch for Wells, 50-150'Deep	3.00	EA	MPLUS	0.18	60	1,728	259	2,911	0	4,898	1632.67
F&W #6P080A05, 5 HP											
M USR AA <15122 1103 > 1" air release valve, APCO #50					1.25	35.34	0.47	32.34	0.00	68.15	
	1.00	EA	MPLUE	2.00	1	35	0	32	0	68	68.15
B USR AA <15182 1008 > Fbgs Cover for 4" D Pipe, 2" Thk					0.10	2.00	0.05	2.43	0.00	4.48	
With Fire Retardant Jacket	30.00	LF	N/A	0.00	3	60	2	73	0	134	4.48
M USR AA <15061 2391 > 3" x 1" Reducer, Eccentric					0.63	17.67	0.23	7.01	0.00	24.91	
	3.00	EA	MPLUE	4.00	2	53	1	21	0	75	24.91
Pump, and Control valves					133	3,774	287	5,352	0	9,412	

02 06. GROUNDWATER COLLECTION & CONTROL	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 06 07 04 01 02. Manhole for Valving Estimate 2 days.									
M USR AA <02560 5201 > 4' Dia x4' Deep, Precast Manhole 8" Tk, Add: $500 for excavation and backfilling.	3.00 EA CODEJ	0.25	13.00 39	324.03 972	47.49 142	215.60 647	500.00 1,500	1087.12 3,261	1087.12
Manhole for Valving	3.00 EA		39	972	142	647	1,500	3,261	1087.12
Pumping System to A.S./UV Oxid			172	4,746	429	5,999	1,500	12,674	
GROUNDWATER PUMPING F/ REMED ACT			172	4,746	429	5,999	1,500	12,674	
PUMPING/COLLECTION			172	4,746	429	5,999	1,500	12,674	

02 12. CHEMICAL TREATMENT	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 12. CHEMICAL TREATMENT											
02 12 01. OZONE/HYDROGEN PEROXIDE/UV OXID.											
02 12 01 05. MOBILIZATION/SETUP/TESTING											
02 12 01 05 01. Purchase, Mob, Setup, & Testing Assume 1 week needed for Mob-in, setup, and testing.											
02 12 01 05 01 01. Purchase of UV Oxidation Unit Budget capital purchase cost from ULTROX, Santa Ana, CA, Oct 12 92. Oxidation Reactor: C-5000, Ozone Generator: 100 lb/day.											
Purchase of UV Oxidation Unit					0	0	0	0	300,000	300,000	
02 12 01 05 01 02. Purchase of Reverse Osmosis Unit Budget purchse cost for the Reverse Osmosis Unit from Frank Rouse, of Water Quality Control, Yakima, WA: $350,000 for 300 gpm unit. . (Includes multi-media filters)											
Purchase of Reverse Osmosis Unit					0	0	0	0	350,000	350,000	
02 12 01 05 01 03. Purchase, Evaporator Unit Budget cost for 300 gpm Evaporator Unit from Stan Macek of Dedert Corp., Evaporator Division, Olympia Fields, IL.											
Purchase, Evaporator Unit					0	0	0	0	1,000,000	1,000,000	
02 12 01 05 01 04. Mob, Setup & Testing For Mob to Hanford, assume $7,000 to cover trucking cost. For Setup and Testing, allow $5,000 for setup labor and $1,500 for equipment & materials.											
Mob, Setup & Testing					0	5,000	1,000	500	7,000	13,500	
Purchase, Mob, Setup, & Testing					0	5,000	1,000	500	1,657,000	1,663,500	
MOBILIZATION/SETUP/TESTING					0	5,000	1,000	500	1,657,000	1,663,500	
02 12 01 10. OPERATION (LONG TERM-OVER 3 YRS) O & M costs will be estimated separately.											
OPERATION (LONG TERM-OVER 3 YRS)					0	0	0	0	0	0	

02 12. CHEMICAL TREATMENT	QUANTY	UOM	CREW	ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
OZONE/HYDROGEN PEROXIDE/UV OXID.						0	5,000	1,000	500	1,657,000	1,663,500	

02 21. DEMOBILIZATION	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 21. DEMOBILIZATION											
02 21 04. DEMOB OF EQUIPMENT & FACILITIES											
02 21 04 01. TRANSPORTATION											
02 21 04 01 01. DeMob - Equipment/Facilities Assume Demob at 75% of Mob and Setup.											
DeMob - Equipment/Facilities					0	0	6,000	0	0	6,000	
TRANSPORTATION					0	0	6,000	0	0	6,000	
DEMOB OF EQUIPMENT & FACILITIES					0	0	6,000	0	0	6,000	
HANFORD: REMEDIATION					789	65,206	12,341	46,097	1,812,250	1,935,894	

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U.S. Army Corps of Engineers
PROJECT GW300U: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, UV OXIDATION
** CREW BACKUP **

SRC	ITEM ID	DESCRIPTION	NO.	UOM	RATE	**** LABOR **** HOURS	COST	**** EQUIP **** HOURS	COST	TOTAL COST
	CODEG	1 B-eqoprmed + 1 Backhoe Loader, 55 Hp			PROD =	100%			CREW HOURS =	58
MIL	B-LABORER L	Laborer (Semi-Skilled)	0.50	HR	23.33	0.50	11.67			11.67
MIL	B-EQOPRMEDF	Eq Oper, Medium	1.00	HR	28.89	1.00	28.89			28.89
MIL	L50CS002 E	LDR,W/BH,WH,1.0CY FE BKT/24"DIP	1.00	HR	11.69			1.00	11.69	11.69
	TOTAL					1.50	40.56	1.00	11.69	52.25
	CODEJ	2 B-laborer + 1 Backhoe Loader, 55 Hp			PROD =	100%			CREW HOURS =	113
MIL	B-LABORER F	Laborer (Semi-Skilled)	0.25	HR	23.83	0.25	5.96			5.96
MIL	B-LABORER L	Laborer (Semi-Skilled)	2.00	HR	23.33	2.00	46.66			46.66
MIL	B-EQOPRMEDL	Eq Oper, Medium	1.00	HR	28.39	1.00	28.39			28.39
MIL	L50CS002 E	LDR,W/BH,WH,1.0CY FE BKT/24"DIP	1.00	HR	11.69			1.00	11.69	11.69
MIL	XMIXX020 E	Small Tools	0.13	HR	1.39			0.13	0.18	0.18
	TOTAL					3.25	81.01	1.13	11.87	92.88
	COEID	1 B-trkdvrhv + 1 Dump Truck, 12 Cy			PROD =	100%			CREW HOURS =	36
MIL	B-TRKDVRHVL	Truck Drivers, Heavy	1.00	HR	26.39	1.00	26.39			26.39
MIL	T40XX010 E	TRUCK OPT,REAR DUMP BODY, 12 CY	1.00	HR	2.63			1.00	2.63	2.63
MIL	T50GM016 E	TRK, HWY, 3 AXLE, 41000 GVW, 6X	1.00	HR	19.97			1.00	19.97	19.97
	TOTAL					1.00	26.39	2.00	22.60	48.99
	MPLUE	1 B-plumber + Small Tools			PROD =	100%			CREW HOURS =	94
MIL	B-LABORER L	Laborer (Semi-Skilled)	1.00	HR	23.33	1.00	23.33			23.33
MIL	B-PLUMBER L	Plumbers	1.00	HR	31.40	1.00	31.40			31.40
MIL	B-PLUMBER F	Plumbers	0.50	HR	31.90	0.50	15.95			15.95
MIL	XMIXX020 E	Small Tools	0.67	HR	1.39			0.67	0.93	0.93
	TOTAL					2.50	70.68	0.67	0.93	71.61
	MPLUS	2 B-plumber + 1- 14 Ton Crane, Hydraulic			PROD =	100%			CREW HOURS =	17
MIL	B-LABORER L	Laborer (Semi-Skilled)	1.00	HR	23.33	1.00	23.33			23.33
MIL	B-EQOPRMEDL	Eq Oper, Medium	0.50	HR	28.39	0.50	14.20			14.20
MIL	B-PLUMBER F	Plumbers	1.00	HR	31.90	1.00	31.90			31.90
MIL	B-PLUMBER L	Plumbers	1.00	HR	31.40	1.00	31.40			31.40
MIL	C75GV001 E	CRANE,HYD,SELF,ROUGH TER,4WD,18	0.50	HR	28.66			0.50	14.33	14.33
MIL	XMIXX020 E	Small Tools	0.56	HR	1.39			0.56	0.78	0.78
	TOTAL					3.50	100.83	1.06	15.11	115.93

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DOE/RL-92-67

SRC	LABOR ID	DESCRIPTION	BASE	OVERTM	TXS/INS	FRNG	TRVL	RATE	UOM	UPDATE	**** TOTAL **** DEFAULT	HOURS
MIL	B-EQOPRMED	Equipment Operator, Medium	28.39	0.0%	0.0%	0.00	0.00	28.39	HR	10/15/92	26.13	180
MIL	B-LABORER	Laborer/Helper	23.33	0.0%	0.0%	0.00	0.00	23.33	HR	10/15/92	22.36	395
MIL	B-PLUMBER	Plumbers	31.40	0.0%	0.0%	0.00	0.00	31.40	HR	10/15/92	31.73	175
MIL	B-TRKDVRHV	Truck Drivers, Heavy	26.39	0.0%	0.0%	0.00	0.00	26.39	HR	10/15/92	25.61	36

PROJECT GW300U: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, UV OXIDATION
** EQUIPMENT BACKUP **

SRC	EQUIP ID	DESCRIPTION	DEPR	CAPT	FUEL	FOG	EQ REP	TR WR	TR REP	TOTAL UOM	** TOTAL ** HOURS
MIL	C75GV001	CRANE,HYD,SELF,ROUGH TER,4WD,18T	9.20	3.48	3.62	1.0	9.89	1.20	0.18	28.66 HR	9
MIL	L50CS002	LDR,W/BH,WH,1.0CY FE BKT/24"DIP	3.42	1.16	1.86	0.6	4.04	0.53	0.08	11.69 HR	171
MIL	T40XX010	TRUCK OPT,REAR DUMP BODY, 12 CY	1.15	0.28		0.0	1.11			2.63 HR	36
MIL	T50GM016	TRK, HWY, 3 AXLE, 41000 GVW, 6X4	4.17	1.08	7.46	2.0	3.69	1.29	0.19	19.97 HR	36
MIL	XMIXX020	Small Tools	0.46	0.17	0.13	0.0	0.57			1.39 HR	87

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9 3 1 2 9 7 3 2 0 0 6

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/01/93

PROJECT DIRECT COST COLUMNS

Col Type	H	L	E	M	U
Rep Width	8	10	10	12	10
Title	MHRS	LABR	EQUIP	MAT	OTHER

PROJECT INDIRECT COST COLUMNS

Col Type	O	U	P	B	U
Rep Width	9	9	9	9	9
Title	FOOH	HOOH	PROF	BOND	B&O TAX

PROJECT OWNER COST COLUMNS

Col Type	U	U	X	X	X
Rep Width	12	12	0	0	0
Title	S & A	CONTG	(Unused)	(Unused)	(Unused)

PROJECT BREAKDOWN

PROJECT ID	Length	Trail Sep	Level Title	2nd View Order
Level 1 ID :	2		Des/Actn	0
Level 2 ID :	2		Feature	0
Level 3 ID :	2		SubFeat	0
Level 4 ID :	2		System	0
Level 5 ID :	4		Bid Item	0
Level 6 ID :	4	-	Task	0

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

Col Type	X	X	X	X	X
Rep Width	0	0	0	0	0
Title	(Unused)	(Unused)	(Unused)	(Unused)	(Unused)
Shadow	X	X	X	X	X

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 3
Table of Contents Levels : 5

		0	1	2	3	4	5	6	7
ROW OPTIONS	Print Titles at Levels :		Y	Y	Y	Y	Y	Y	
	Print Totals at Levels :		N	N	Y	Y	Y	Y	
	Print Notes at Levels :	Y	Y	Y	Y	Y	Y	Y	Y

Print Unit Cost Row : Y
Print Page Footer : N
Show Cost Codes : Y

COLUMNS OPTIONS
Print Crew Id : Y
Crew Output : Y
Unit Cost : Y

UPB TITLES
No. of Levels to Print : 0
Bracket Titles With : - :
Include titles Notes : Y

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DOE/RL-92-67

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1	FOOH	: JOB OFFICE OVERHEAD
Column 2	HOOH	: HOME OFFICE OVERHEAD
Column 3	PROF	: PROFIT
Column 4	BOND	: PERFORMANCE BOND
Column 5	B&O TAX	: B & O AND OTHER TAXES

Column 1	S & A	: S & A
Column 2	CONTG	: CONTINGENCY
Column 3	(Unused)	:
Column 4	(Unused)	:
Column 5	(Unused)	:

STANDARD COLUMN WIDTHS		SUMMARY FEATURES	
Quantity Columns :	10	Round Totals Column :	T-Tens
Total cost Columns :	12	Contingency Notes :	Yes
Unit Cost Columns :	12	Show Project Totals :	Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y Measurement Units : Original
Link Listing : N

	REPORT FORMAT TYPE			FOR LEVEL (S)
	Direct	Indirect	Owner	0 1 2 3 4 5 6
Detail :	Y			
Project :	N	Y	Y	N Y N N N Y
Contractor :	N	N		N N N N N N
Division :	N	N	N	Y N N N N N
System :	N	N	N	Y N N N N N
2nd View :	N			
Crew :	Y			Y N N N N N
Labor :	Y			
Equipment :	Y			

** OWNER SETTINGS **

	AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
Project Information Record						
02 REMEDIAL ACTION						
S & A	P	20.00				
CONTINGENCY	P	0.00				
02 01 MOBILIZATION & PREPARATORY WORK						
02 01 01 MOB OF EQUIPMENT & FACILITIES						
02 01 01 01 TRANSPORTATION						
02 01 01 01 01 Equipment Mob, Detailed List						
S & A	O					
CONTINGENCY	P	20.00				
02 01 04 SETUP/CONSTRUCT TEMP FACILITIES						
02 01 04 01 TRAILERS AND BUILDINGS						
02 01 04 01 01 Office Trailers - setup						
02 01 04 01 01 01 Office Trailers - setup						
S & A	O					
CONTINGENCY	P	50.00				
02 01 04 02 DECONTAMINATION FACILITIES						
02 01 04 02 01 Personnel Decon Facilities						
02 01 04 02 01 01 Personnel Decon Facilities						
S & A	O					
CONTINGENCY	P	50.00				
02 01 04 02 02 Equip/Vehicle Decon Facilities						
02 01 04 02 02 01 Equip/Vehicle Decon Facilities						
S & A	O					
CONTINGENCY	P	50.00				
02 02 MONITOR, SAMPLE, TEST, ANALYSIS						
02 02 91 QA/Safety Monitoring						
02 02 91 01 QA/Safety Monitoring						
02 02 91 01 01 QA/Safety Monitoring						
02 02 91 01 01 01 QA/Safety Monitoring						
S & A	O					
CONTINGENCY	P	20.00				
02 06 GROUNDWATER COLLECTION & CONTROL						
02 06 01 EXTRACTION AND INJECTION WELLS						
02 06 01 01 WELL DRILLING & CONSTRUCTION						
02 06 01 01 01 WELL DRILLING & CONSTRUCTION						

** OWNER SETTINGS **

		AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
02 06 01 01 01 01 WELL DRILLING & CONSTRUCTION							
S & A	O						
CONTINGENCY	P		25.00				
02 06 02 SUBSURFACE DRAINAGE							
02 06 02 01 INJECTION OF TREATED GROUNDWATER							
02 06 02 01 01 Sump & Discharge Pump							
S & A	O						
CONTINGENCY	P		25.00				
02 06 02 01 02 Recharge Trenches							
S & A	O						
CONTINGENCY	P		30.00				
02 06 07 PUMPING/COLLECTION							
02 06 07 04 GROUNDWATER PUMPING F/ REMED ACT							
02 06 07 04 01 Pumping System to A.S./UV Oxid							
02 06 07 04 01 01 Pump, and Control valves							
S & A	O						
CONTINGENCY	P		25.00				
02 06 07 04 01 02 Manhole for Valving							
S & A	O						
CONTINGENCY	P		25.00				
02 12 CHEMICAL TREATMENT							
02 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID.							
02 12 01 05 MOBILIZATION/SETUP/TESTING							
02 12 01 05 01 Purchase, Mob, Setup, & Testing							
02 12 01 05 01 01 Purchase of UV Oxidation Unit							
S & A	O						
CONTINGENCY	P		25.00				
02 12 01 05 01 02 Purchase of Reverse Osmosis Unit							
S & A	O						
CONTINGENCY	P		20.00				
02 12 01 05 01 03 Purchase, Evaporator Unit							
S & A	O						
CONTINGENCY	P		50.00				
02 12 01 05 01 04 Mob, Setup & Testing							
S & A	O						
CONTINGENCY	P		50.00				

** OWNER SETTINGS **

		AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
02 12 01 10 OPERATION (LONG TERM-OVER 3 YRS)							
	S & A	O					
	CONTINGENCY	O					
02 21 DEMOBILIZATION							
02 21 04 DEMOB OF EQUIPMENT & FACILITIES							
02 21 04 01 TRANSPORTATION							
02 21 04 01 01 DeMob - Equipment/Facilities							
	S & A	O					
	CONTINGENCY	P	20.00				

** CONTRACTOR SETTINGS **

		AMOUNT	PCT	PCT S	RISK	DIFF	SIZE	PERIOD	INVEST	ASSIST	SUBCON
AA REMEDIAL GENERAL CONTRACTOR											
JOB OFFICE OVERHEAD	P		15.00								
HOME OFFICE OVERHEAD	P		5.00								
PROFIT	P		8.00								
PERFORMANCE BOND	C			(Class: B)							
B & O AND OTHER TAXES	P		1.00								

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9 3 1 3 9 3 2 0 1 4

ANNUAL O&M COSTS FOR GROUNDWATER MONITORING

Corps of Engineers historical data for costs of one yearly sampling round are: $60,614

Typically, 15 wells are sampled; therefore, the per well costs are: $60,614/15 = $4,050

1. Monitoring Costs for the UN-1100-6 and Ephemeral Pool Subunits

   3 wells are used to monitor these sites and would continue to be monitored if contaminants are left in place. Costs would be:
   3 x $4,050 = $12,150

2. Monitoring Costs for the HRL

   10 wells are used to monitor the HRL and would continue to be monitored if contaminants are left in place. Costs would be:
   10 x $4,050 = $40,500

3. Monitoring Costs for Additional Wells Installed as Part of Remedial Actions

   6 additional wells are proposed to be installed as part of the groundwater remedial actions. Costs for this additional monitoring are:
   6 x $4,050 = $24,300 (Total cost for 16 wells = $64,800)

9 1 0 3 3 9 6 1 6

ANNUAL O&M COSTS FOR 100 GPM AIR STRIPPING

1. Extraction/Infiltration Scheme 1 (includes settling tank pump)

Assume power cost of $0.05/kwhr

Yearly estimated power usage = 39,926 kwhr

Yearly cost of power = $0.05 x 39,926 = $2,000

Replacement bearings (2) required on pumps at years 4, 8, 12, and 16 @ $1,000/ea (Settling tank pump does not need bearings replaced because of part-time operation.)

Converting to present worth dollars (i=5%):

At year 4	$2,000 x 0.8227 =	$1,645
At year 8	$2,000 x 0.6768 =	$1,354
At year 12	$2,000 x 0.5568 =	$1,114
At year 16	$2,000 x 0.4581 =	$916
	Total =	$5,029

Converting to annual outlay for 17 years (i=5%):

$5,029 x 0.0887 = $450/year

Total for Extraction/Infiltration System = $2,450/year

2. Treatment System (based on 100 gpm system)

Air stripping cost (including power and maintenance) from Corps of Engineers historical data at other sites based on a power rate of $0.05/kwhr	$0.06/1,000 gallons treated
Mixed media filter and reverse osmosis (from data provided by Culligan)	$0.25/1,000 gallons treated
Evaporator (from data provided by Dedert Corporation)	$2.18/1,000 gallons treated
Total Treatment Cost	$2.49/1,000 gallons treated

For 100 gpm system there are 52,560,000 gallons treated per year. Therefore, total cost of treatment =

52,560,000/1,000 x $2.49 = $131,400/year

3. Labor Cost

Assume 1 operator/maintenance worker required full time 5 days a week, 52 weeks per year at an hourly rate of $30/hr (including benefits). Total cost of labor per year =

$30 x 8 hr/d x 5 d/wk x 52 wk/yr = $62,400/yr

4. Monthly Effluent Monitoring

Assume $3,000 month or $36,000/yr

5. Total Annual Cost

Sum of Items 1 through 4 $232,000

ANNUAL O&M COSTS FOR 100 GPM UV OXIDATION

1. Extraction/Infiltration Scheme 1 (includes settling tank pump)

Assume power cost of $0.05/kwhr

Yearly estimated power usage = 39,926 kwhr

Yearly cost of power = $0.05 x 39,926 = $2,000

Replacement bearings (2) required on pumps at years 4, 8, 12 and 16 @ $1,000/ea (Settling tank pump does not need bearings replaced because of part-time operation.)

Converting to present worth dollars (i=5%):

At year 4 $2,000 x 0.8227 = $1,645

At year 8 $2,000 x 0.6768 = $1,354

At year 12 $2,000 x 0.5568 = $1,114

At year 16 $2,000 x 0.4581 = $916

Total = $5,029

Converting to annual outlay for 17 years (i=5%):

$5,029 x 0.0887 = $450/year

Total for Extraction/Infiltration System = $2,450/year

2. Treatment System (based on 100 gpm system)

UV/Oxidation (including power, maintenance and chemical cost from ULTROX)	$0.22/1,000 gallons treated
Mixed media filter and reverse osmosis (from data provided by Culligan)	$0.25/1,000 gallons treated
Evaporator (from data provided by Dedert Corporation)	$2.18/1,000 gallons treated
Total Treatment Cost	$2.65/1,000 gallons treated

For 100 gpm system there are 52,560,000 gallons treated per year. Therefore, total cost of treatment =

52,560,000/1,000 x $2.65 = $139,284/year

3. Labor Cost

Assume 1 operator/maintenance worker required full time 5 days a week, 52 weeks per year at an hourly rate of $30/hr (including benefits). Total cost of labor per year =

$30 x 8 hr/d x 5 d/wk x 52 wk/yr = $62,400/yr

4. Monthly Effluent Monitoring

Assume $3,000 month or $36,000/yr

5. Total Annual Cost

Sum of Items 1 through 4	$238,000

9 2 1 2 9 3 3 0 2 0

ANNUAL O&M COSTS FOR 300 GPM AIR STRIPPING

1. Extraction/Infiltration Scheme 2 (includes settling tank pump)

Assume power cost of $0.05/kwhr

Yearly estimated power usage = 190,610 kwhr

Yearly cost of power = $0.05 x 190,610 = $9,550

Replacement bearings (4) required on pumps at years 4, 8, and 12 @ $1,000/ea
(Settling tank pump does not need bearings replaced because of part-time operation.)

Converting to present worth dollars (i=5%):

At year 4 $4,000 x 0.8227 = $3,291

At year 8 $4,000 x 0.6768 = $2,707

At year 12 $4,000 x 0.5568 = $2,227

Total = $8,225

Converting to annual outlay for 13 years (i=5%):

$8,225 x 0.1065 = $875/year

Total for Extraction/Infiltration System = $10,425/year

2. Treatment System (based on 100 gpm system)

Air stripping cost (including power and maintenance) from Corps of Engineers historical data at other sites based on a power rate of $0.05/kwhr	$0.058/1,000 gallons treated
Mixed media filter and reverse osmosis (from data provided by Culligan)	$0.23/1,000 gallons treated
Evaporator (from data provided by Dedert Corporation)	$2.07/1,000 gallons treated
Total Treatment Cost	$2.36/1,000 gallons treated

For 300 gpm system there are 157,680,000 gallons treated per year. Therefore, total cost of treatment =

157,680,000/1,000 x $2.36 = $372,125/year

3. Labor Cost

Assume 1 operator/maintenance worker required full time 5 days a week, 52 weeks per year at an hourly rate of $30/hr (including benefits). Total cost of labor per year =

$30 x 8 hr/d x 5 d/wk x 52 wk/yr = $62,400/yr

4. Monthly Effluent Monitoring

Assume $3,000 month or $36,000/yr

5. Total Annual Cost

Sum of Items 1 through 4 $481,000

ANNUAL O&M COSTS FOR 300 GPM UV OXIDATION

1. Extraction/Infiltration Scheme 2 (includes settling tank pump)

   Assume power cost of $0.05/kwhr

   Yearly estimated power usage = 190,610 kwhr

   Yearly cost of power = $0.05 x 190,610 = $9,550

   Replacement bearings (4) required on pumps at years 4, 8, and 12 @ $1,000/ea
   (Settling tank pump does not need bearings replaced because of part-time operation.)

   Converting to present worth dollars (i=5%):

   At year 4 $4,000 x 0.8227 = $3,291

   At year 8 $4,000 x 0.6768 = $2,707

   At year 12 $4,000 x 0.5568 = $2,227

   Total = $8,225

   Converting to annual outlay for 13 years (i=5%):

   $8,225 x 0.1065 = $875/year

   Total for Extraction/Infiltration System = $10,425/year

2. Treatment System (based on 100 gpm system)

UV/Oxidation (including power, maintenance and chemical cost from ULTROX)	$0.27/1,000 gallons treated
Mixed media filter and reverse osmosis (from data provided by Culligan)	$0.23/1,000 gallons treated
Evaporator (from data provided by Dedert Corporation)	$2.07/1,000 gallons treated
Total Treatment Cost	$2.57/1,000 gallons treated

   For 300 gpm system there are 157,680,000 gallons treated per year. Therefore, total cost of treatment =

   157,680,000/1,000 x $2.57 = $405,238/year

3. Labor Cost

Assume 1 operator/maintenance worker required full time 5 days a week, 52 weeks per year at an hourly rate of $30/hr (including benefits). Total cost of labor per year =

$30 x 8 hr/d x 5 d/wk x 52 wk/yr = $62,400/yr

4. Monthly Effluent Monitoring

Assume $3,000 month or $36,000/yr

5. Total Annual Cost

Sum of Items 1 through 4	$514,000

9 3 1 2 9 7 3 2 0 2 4

HORN RAPIDS LANDFILL
OFFSITE DISPOSAL OF SOILS
WITH >50 mg/kg PCB's CONTAMINATION

9 3 1 2 9 3 3 0 2 5

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9 3 1 2 9 5 3 2 0 2 6

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
HORN RAPIDS LANDFILL (PCBs)
OFF-SITE DISPOSAL, PCBs > 50ppm

Designed By:
Estimated By:

Prepared By:
USACE/CENPW COST ENGR BRANCH

Date: 03/09/93

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
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Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Alternative Estimates

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.
".23" is the Subproject (ie. 1100-EM)
".01" is the Operable Unit
".2" is Remediation

In this MCACES estimate project breakdown, the first level, "02", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is FY 93. S & A is estimated at 20%, and consists of NPW's Project Management @ 5%, Construction Management @ 10%, and Engineering During Construction @ 5%. See Contingency Notes (Title Page 3) for explanation of Contingency percentages. Contingency was applied at Level 5/6 in the estimate, to allow use of different percentages for the various types of work (see Settings for which percentage was applied). See Detail Page 1 for explanation of Contractor Indirect percentages used. E&D and Escalation will be added by the NPW-Hanford Project Manager.

Horn Rapids Landfill (PCBs), Off-site Disposal

This project estimate covers the Off-site Incineration of PCB "Hot Spot" in the Horn Rapids Landfill (HRL). THIS estimate covers the removal of the contaminated soil > 50 ppm, estimated at 31 CY. PCB contaminated soils will be loaded into 20-Ton roll-off units, for transportation to Arlington.

1. Contingency is based on uncertainty of the amount of time required to do the work represented in the estimate, etc.

2. Contingency is based on the uncertainty of the quantities presented.

3. Contingency based on the unit costs obtained by Vendor and therefore may be different by the time work will actually be accomplished.

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SUMMARY REPORTS SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 2.....1
PROJECT OWNER SUMMARY - LEVEL 6.....2
PROJECT INDIRECT SUMMARY - LEVEL 2.....6
PROJECT INDIRECT SUMMARY - LEVEL 6.....7

DETAILED ESTIMATE DETAIL PAGE

02. REMEDIAL ACTION
01. MOBILIZATION AND PREPATORY WORK
01. MOB OF EQUIPMENT & PERSONNEL
1. TRANSPORTATION
01-. Ph I, Equip Mob, Detailed List.....1
02-. Ph II, Equip Mob, Detailed List.....2
03. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Ph I, Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....3
02. Equip/Vehicle Decon Facilities.....3
02. MONITOR, SAMPLE, TEST, ANALYSIS
06. SAMPLING SOIL, SED & SOLID WASTE
01. SURFACE SOIL
01. PHASE I, Soil Sample.....4
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. Safety and Quality Assurance.....5
03. SITE WORK
05. FENCING
01. FENCING
01. Temporary Fencing.....6
08. SOLID WASTE COLLECT/CONTAINMENT
01. EXCAVATION
03. CONTAMINATED SOIL
01. PHASE I, Excavate/Load PCB Soils.....7
03. Post Removal - Site Re-grading.....8
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. PH I, Demob of equipment.....9

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

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Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT PCOFFR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE DISPOSAL, PCB>50 PPM
** PROJECT OWNER SUMMARY - LEVEL 2 (Rounded to 1000's) **

TIME 13:59:27

SUMMARY PAGE 1

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 REMEDIAL ACTION							
02 01 MOBILIZATION AND PREPATORY WORK		13,000	3,000	3,000	19,000		
02 02 MONITOR, SAMPLE, TEST, ANALYSIS		12,000	2,000	3,000	17,000		
02 03 SITE WORK		13,000	3,000	3,000	19,000		
02 08 SOLID WASTE COLLECT/CONTAINMENT		17,000	3,000	5,000	25,000		
02 21 DEMOBILIZATION		10,000	2,000	2,000	14,000		
REMEDIAL ACTION		65,000	13,000	17,000	95,000		
HANFORD: REMEDIATION		65,000	13,000	17,000	95,000		

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT PCOFFR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE DISPOSAL, PCB>50 PPM
** PROJECT OWNER SUMMARY - LEVEL 6 (Rounded to 10's) **

TIME 13:55:23
SUMMARY PAGE 2

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 REMEDIAL ACTION							
02 01 MOBILIZATION AND PREPATORY WORK							
02 01 01 MOB OF EQUIPMENT & PERSONNEL							
02 01 01 1 TRANSPORTATION							
02 01 01 1 01- Ph I, Equip Mob, Detailed List							
Ph I, Equip Mob, Detailed List		2,800	560	670	4,040		
02 01 01 1 02- Ph II, Equip Mob, Detailed List							
Ph II, Equip Mob, Detailed List		2,290	460	550	3,300		
TRANSPORTATION		5,100	1,020	1,220	7,340		
MOB OF EQUIPMENT & PERSONNEL		5,100	1,020	1,220	7,340		
02 01 03 SETUP/CONSTRUCT TEMP FACILITIES							
02 01 03 01 TRAILERS AND BUILDINGS							
02 01 03 01 01 Ph I, Office Trailers - setup							
Ph I, Office Trailers - setup	100.00 HR	3,790	760	910	5,460	54.55	
TRAILERS AND BUILDINGS		3,790	760	910	5,460		
02 01 03 02 DECONTAMINATION FACILITIES							
02 01 03 02 01 Personnel Decon Facilities							
Personnel Decon Facilities	120.00 HR	4,550	910	1,090	6,550	54.55	
02 01 03 02 02 Equip/Vehicle Decon Facilities							
DECONTAMINATION FACILITIES		4,550	910	1,090	6,550		
SETUP/CONSTRUCT TEMP FACILITIES		8,330	1,670	2,000	12,000		

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT PCOFFR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EN-1, H.R.L., OFF-SITE DISPOSAL, PCB>50 PPM
** PROJECT OWNER SUMMARY - LEVEL 6 (Rounded to 10's) **

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
MOBILIZATION AND PREPATORY WORK		13,430	2,690	3,220	19,340		
02 02 MONITOR, SAMPLE, TEST, ANALYSIS							
02 02 06 SAMPLING SOIL, SED & SOLID WASTE							
02 02 06 01 SURFACE SOIL							
02 02 06 01 01 PHASE I, Soil Sample							
02 02 06 01 01 01 Soil Sampling	11.00 EA	2,920	580	700	4,210	382.83	1
02 02 06 01 01 02 QA Report		1,990	400	480	2,870		1
PHASE I, Soil Sample	11.00 EA	4,920	980	1,180	7,080	643.85	
SURFACE SOIL		4,920	980	1,180	7,080		
SAMPLING SOIL, SED & SOLID WASTE		4,920	980	1,180	7,080		
02 02 91 QA/Safety Monitoring							
02 02 91 01 QA/Safety Monitoring							
02 02 91 01 01 Safety and Quality Assurance							
Safety and Quality Assurance	1.00 WK	6,910	1,380	1,660	9,950	9953.51	
QA/Safety Monitoring		6,910	1,380	1,660	9,950		
QA/Safety Monitoring		6,910	1,380	1,660	9,950		
MONITOR, SAMPLE, TEST, ANALYSIS		11,830	2,370	2,840	17,040		
02 03 SITE WORK							
02 03 05 FENCING							
02 03 05 01 FENCING							
02 03 05 01 01 Temporary Fencing							
02 03 05 01 01 01 Temporary Fencing - 6' Security	400.00 LF	13,290	2,660	3,190	19,140	47.85	
Temporary Fencing	400.00 LF	13,290	2,660	3,190	19,140	47.85	
FENCING		13,290	2,660	3,190	19,140		

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
FENCING		13,290	2,660	3,190	19,140		
SITE WORK		13,290	2,660	3,190	19,140		
02 08 SOLID WASTE COLLECT/CONTAINMENT							
02 08 01 EXCAVATION							
02 08 01 03 CONTAMINATED SOIL							
02 08 01 03 01 PHASE I, Excavate/Load PCB Soils							
02 08 01 03 01 01 Excavate/Load PCB Soils	31.00 CY	240	50	110	400	12.88	2
02 08 01 03 01 02 Transport PCB Soils - Arlington	31.00 CY	13,130	2,630	3,940	19,690	635.12	2,3
02 08 01 03 01 03 PPEquip, Modified Class D	3.00 DAY	3,070	610	920	4,600	1534.61	1
PHASE I, Excavate/Load PCB Soils	230.00 CY	16,430	3,290	4,970	24,690	107.36	
02 08 01 03 03 Post Removal - Site Re-grading							
02 08 01 03 03 01 Site Re-grading		410	80	120	610		1
Post Removal - Site Re-grading		410	80	120	610		
CONTAMINATED SOIL		16,840	3,370	5,100	25,300		
EXCAVATION		16,840	3,370	5,100	25,300		
SOLID WASTE COLLECT/CONTAINMENT		16,840	3,370	5,100	25,300		
02 21 DEMOBILIZATION							
02 21 04 DEMOB OF EQUIPMENT & PERSONNEL							
02 21 04 01 TRANSPORTATION							
02 21 04 01 01 PH I, Demob of equipment							
PH I, Demob of equipment		10,070	2,010	2,420	14,500		
TRANSPORTATION		10,070	2,010	2,420	14,500		
DEMOB OF EQUIPMENT & PERSONNEL		10,070	2,010	2,420	14,500		
DEMOBILIZATION		10,070	2,010	2,420	14,500		

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT PCOFFR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE DISPOSAL, PCB>50 PPM
** PROJECT OWNER SUMMARY - LEVEL 6 (Rounded to 10's) **

TIME 13:55:23

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
REMEDIAL ACTION		65,470	13,090	16,760	95,320		
HANFORD: REMEDIATION		65,470	13,090	16,760	95,320		

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT PCOFFR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE DISPOSAL, PCB>50 PPM
** PROJECT INDIRECT SUMMARY - LEVEL 2 (Rounded to 10's) **

TIME 13:55:23
SUMMARY PAGE 6

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 REMEDIAL ACTION									
02 01 MOBILIZATION AND PREPATORY WORK		10,110	1,520	580	980	120	130	13,430	
02 02 MONITOR, SAMPLE, TEST, ANALYSIS		8,900	1,340	510	860	110	120	11,830	
02 03 SITE WORK		10,000	1,500	580	970	120	130	13,290	
02 08 SOLID WASTE COLLECT/CONTAINMENT		12,670	1,900	730	1,220	150	170	16,840	
02 21 DEMOBILIZATION		7,580	1,140	440	730	90	100	10,070	
REMEDIAL ACTION		49,250	7,390	2,830	4,760	590	650	65,470	
HANFORD: REMEDIATION		49,250	7,390	2,830	4,760	590	650	65,470	
S & A								13,090	
SUBTOTAL								78,560	
CONTINGENCY								16,760	
TOTAL INCL OWNER COSTS								95,320	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 REMEDIAL ACTION									
02 01 MOBILIZATION AND PREPATORY WORK									
02 01 01 MOB OF EQUIPMENT & PERSONNEL									
02 01 01 1 TRANSPORTATION									
02 01 01 1 01- Ph I, Equip Mob, Detailed List									
Ph I, Equip Mob, Detailed List		2,110	320	120	200	30	30	2,800	
02 01 01 1 02- Ph II, Equip Mob, Detailed List									
Ph II, Equip Mob, Detailed List		1,730	260	100	170	20	20	2,290	
TRANSPORTATION		3,840	580	220	370	50	50	5,100	
MOB OF EQUIPMENT & PERSONNEL		3,840	580	220	370	50	50	5,100	
02 01 03 SETUP/CONSTRUCT TEMP FACILITIES									
02 01 03 01 TRAILERS AND BUILDINGS									
02 01 03 01 01 Ph I, Office Trailers - setup									
Ph I, Office Trailers - setup	100.00 HR	2,850	430	160	280	30	40	3,790	37.88
TRAILERS AND BUILDINGS		2,850	430	160	280	30	40	3,790	
02 01 03 02 DECONTAMINATION FACILITIES									
02 01 03 02 01 Personnel Decon Facilities									
Personnel Decon Facilities	120.00 HR	3,420	510	200	330	40	50	4,550	37.88
02 01 03 02 02 Equip/Vehicle Decon Facilities									
DECONTAMINATION FACILITIES		3,420	510	200	330	40	50	4,550	
SETUP/CONSTRUCT TEMP FACILITIES		6,270	940	360	610	80	80	8,330	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
MOBILIZATION AND PREPATORY WORK		10,110	1,520	580	980	120	130	13,430	
02 02 MONITOR, SAMPLE, TEST, ANALYSIS									
02 02 06 SAMPLING SOIL, SED & SOLID WASTE									
02 02 06 01 SURFACE SOIL									
02 02 06 01 01 PHASE I, Soil Sample									
02 02 06 01 01 01 Soil Sampling	11.00 EA	2,200	330	130	210	30	30	2,920	265.85
02 02 06 01 01 02 QA Report		1,500	230	90	140	20	20	1,990	
PHASE I, Soil Sample	11.00 EA	3,700	560	210	360	40	50	4,920	447.12
SURFACE SOIL		3,700	560	210	360	40	50	4,920	
SAMPLING SOIL, SED & SOLID WASTE		3,700	560	210	360	40	50	4,920	
02 02 91 QA/Safety Monitoring									
02 02 91 01 QA/Safety Monitoring									
02 02 91 01 01 Safety and Quality Assurance									
Safety and Quality Assurance	1.00 WK	5,200	780	300	500	60	70	6,910	6912.16
QA/Safety Monitoring		5,200	780	300	500	60	70	6,910	
QA/Safety Monitoring		5,200	780	300	500	60	70	6,910	
MONITOR, SAMPLE, TEST, ANALYSIS		8,900	1,340	510	860	110	120	11,830	
02 03 SITE WORK									
02 03 05 FENCING									
02 03 05 01 FENCING									
02 03 05 01 01 Temporary Fencing									
02 03 05 01 01 01 Temporary Fencing - 6' Security	400.00 LF	10,000	1,500	580	970	120	130	13,290	33.23
Temporary Fencing	400.00 LF	10,000	1,500	580	970	120	130	13,290	33.23
FENCING		10,000	1,500	580	970	120	130	13,290	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
FENCING		10,000	1,500	580	970	120	130	13,290	
SITE WORK		10,000	1,500	580	970	120	130	13,290	
02 08 SOLID WASTE COLLECT/CONTAINMENT									
02 08 01 EXCAVATION									
02 08 01 03 CONTAMINATED SOIL									
02 08 01 03 01 PHASE I, Excavate/Load PCB Soils									
02 08 01 03 01 01 Excavate/Load PCB Soils	31.00 CY	180	30	10	20	0	0	240	7.67
02 08 01 03 01 02 Transport PCB Soils - Arlington	31.00 CY	9,870	1,480	570	950	120	130	13,130	423.41
02 08 01 03 01 03 PPEquip, Modified Class D	3.00 DAY	2,310	350	130	220	30	30	3,070	1023.08
PHASE I, Excavate/Load PCB Soils	230.00 CY	12,360	1,850	710	1,190	150	160	16,430	71.45
02 08 01 03 03 Post Removal - Site Re-grading									
02 08 01 03 03 01 Site Re-grading		310	50	20	30	0	0	410	
Post Removal - Site Re-grading		310	50	20	30	0	0	410	
CONTAMINATED SOIL		12,670	1,900	730	1,220	150	170	16,840	
EXCAVATION		12,670	1,900	730	1,220	150	170	16,840	
SOLID WASTE COLLECT/CONTAINMENT		12,670	1,900	730	1,220	150	170	16,840	
02 21 DEMOBILIZATION									
02 21 04 DEMOB OF EQUIPMENT & PERSONNEL									
02 21 04 01 TRANSPORTATION									
02 21 04 01 01 PH I, Demob of equipment									
PH I, Demob of equipment		7,580	1,140	440	730	90	100	10,070	
TRANSPORTATION		7,580	1,140	440	730	90	100	10,070	
DEMOB OF EQUIPMENT & PERSONNEL		7,580	1,140	440	730	90	100	10,070	
DEMOBILIZATION		7,580	1,140	440	730	90	100	10,070	

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT PCOFFR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE DISPOSAL, PCB>50 PPM
** PROJECT INDIRECT SUMMARY - LEVEL 6 (Rounded to 10's) **

TIME 13:55:23

SUMMARY PAGE 10

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
REMEDIAL ACTION		49,250	7,390	2,830	4,760	590	650	65,470	
HANFORD: REMEDIATION		49,250	7,390	2,830	4,760	590	650	65,470	
S & A								13,090	
SUBTOTAL								78,560	
CONTINGENCY								16,760	
TOTAL INCL OWNER COSTS								95,320	

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

02. REMEDIAL ACTION
02 01. MOBILIZATION AND PREPATORY WORK
02 01 01. MOB OF EQUIPMENT & PERSONNEL

02 01 01 1. TRANSPORTATION

02 01 01 1 01-. Ph I, Equip Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed.

0 AA. REMEDIAL GENERAL CONTRACTOR	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
USR AA <01505 3235 > Mob, FEnd Ldr, wheel 1-1/2-3 cy Atriculated Fr, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	750.00 750	0.00 0	0.00 0	750.00 750	750.00
USR AA <01505 6115 > Mob, Dozer, Crawler, 50-100 hp w/blade, incl set up 100 mi radius	1.00 EA	0.00	0.00 0	0.00 0	750.00 750	0.00 0	0.00 0	750.00 750	750.00
USR AA <01505 7131 > Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	150.00 150	0.00 0	0.00 0	150.00 150	150.00
USR AA <01505 8921 > Mob, Decontamination Trailer w/25,000 GVW Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	135.00 135	0.00 0	0.00 0	135.00 135	135.00
USR AA <01505 1101 > Mob - Field Office Trailer	1.00 EA	0.00	0.00 0	0.00 0	250.00 250	0.00 0	0.00 0	250.00 250	250.00
USR AA <01505 8952 > Mob, Hot Water Blstr, 3,200 psi 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	75.00 75	0.00 0	0.00 0	75.00 75	75.00
Ph I, Equip Mob, Detailed List			0	0	2,110	0	0	2,110	

02 01. MOBILIZATION AND PREPATORY WORK	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 01 01 1 02-. Ph II, Equip Mob, Detailed List This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed. The trailers are not re-mob'd, as it is assumed they are left in place for duration of work.									
USR AA <01505 3235 > Mob, FEnd Ldr, wheel 1-1/2-3 cy Atriculated Fr, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	750.00 750	0.00 0	0.00 0	750.00 750	750.00
USR AA <01505 6115 > Mob, Dozer, Crawler, 50-100 hp w/blade, incl set up 100 mi radius	1.00 EA	0.00	0.00 0	0.00 0	750.00 750	0.00 0	0.00 0	750.00 750	750.00
USR AA <01505 7131 > Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	150.00 150	0.00 0	0.00 0	150.00 150	150.00
USR AA <01505 8952 > Mob, Hot Water Blstr, 3,200 psi 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	75.00 75	0.00 0	0.00 0	75.00 75	75.00
Ph II, Equip Mob, Detailed List			0	0	1,725	0	0	1,725	
TRANSPORTATION			0	0	3,835	0	0	3,835	
MOB OF EQUIPMENT & PERSONNEL			0	0	3,835	0	0	3,835	

02 01. MOBILIZATION AND PREPATORY WORK	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 01 03. SETUP/CONSTRUCT TEMP FACILITIES									
02 01 03 01. TRAILERS AND BUILDINGS									
02 01 03 01 01. Ph I, Office Trailers - setup Allow 100 mhrs for setup of contractor's trailer and equipment and site layout. An allowance for some equipment and material has been added. Ph I, Office Trailers - setup	100.00 HR		0	2,500	250	100	0	2,850	28.50
TRAILERS AND BUILDINGS			0	2,500	250	100	0	2,850	
02 01 03 02. DECONTAMINATION FACILITIES									
02 01 03 02 01. Personnel Decon Facilities Allow 120 mhrs for setup of the Personnel Decon Facilities, including equipment and site layout. An allowance for material & equip. is included. Personnel Decon Facilities	120.00 HR		0	3,000	300	120	0	3,420	28.50
02 01 03 02 02. Equip/Vehicle Decon Facilities A equipment/vehicle washdown facility has been costed in the Asbestos Cap estimate, and it will be used for all waste site decon. Decon water will be transported by a WHC truck to an on-site disposal area. Equip/Vehicle Decon Facilities			0	0	0	0	0	0	
DECONTAMINATION FACILITIES			0	3,000	300	120	0	3,420	
SETUP/CONSTRUCT TEMP FACILITIES			0	5,500	550	220	0	6,270	

02 02. MONITOR, SAMPLE, TEST, ANALYSIS	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 02. MONITOR, SAMPLE, TEST, ANALYSIS									
02 02 06. SAMPLING SOIL, SED & SOLID WASTE									
02 02 06 01. SURFACE SOIL									
02 02 06 01 01. PHASE I, Soil Sample After the top 3 ft of soil is removed, soil samples will be taken.									
02 02 06 01 01 01. Soil Sampling Sample on 15'x15' grid (9 samples) with analysis at off site lab for PCB only, with 7-day turnaround. Method 8080. Add 2 QA samples. Costs for analysis from the Corps North Pacific Division (CENPD) Laboratory.									
Soil Sampling	11.00 EA		0	0	0	0	2,200	2,200	200.00
02 02 06 01 01 02. QA Report Cost for QA Report from CENPD Laboratory.									
QA Report			0	0	0	0	1,500	1,500	
PHASE I, Soil Sample	11.00 EA		0	0	0	0	3,700	3,700	336.36
SURFACE SOIL			0	0	0	0	3,700	3,700	
SAMPLING SOIL, SED & SOLID WASTE			0	0	0	0	3,700	3,700	

02 02. MONITOR, SAMPLE, TEST, ANALYSIS	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 02 91. QA/Safety Monitoring											
02 02 91 01. QA/Safety Monitoring											
02 02 91 01 01. Safety and Quality Assurance											
Safety/QA crew:											
WHC HPT: $50/hr x 40hrs = $2,000											
COE Safety: $70/hr x 40hrs = $2,800											
COE Special Assist. QA: $50/hr x 8 hrs = $ 400											
Total cost/week $5,200											
The duration of this project is estimated at 1 week.											
Safety and Quality Assurance	1.00	WK			0	5,200	0	0	0	5,200	5200.00
QA/Safety Monitoring					0	5,200	0	0	0	5,200	
QA/Safety Monitoring					0	5,200	0	0	0	5,200	

02 03. SITE WORK	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 03. SITE WORK											
02 03 05. FENCING											
02 03 05 01. FENCING											
02 03 05 01 01. Temporary Fencing											
02 03 05 01 01 01. Temporary Fencing - 6' Security A 6' Security fence will be required during the duration of the cleanup activities around the work site. Cost taken from recent bid quotes. "Other" cost for removal.											
Temporary Fencing - 6' Security	400.00	LF			0	2,000	1,000	5,000	2,000	10,000	25.00
Temporary Fencing	400.00	LF			0	2,000	1,000	5,000	2,000	10,000	25.00
FENCING					0	2,000	1,000	5,000	2,000	10,000	
FENCING					0	2,000	1,000	5,000	2,000	10,000	

02 08. SOLID WASTE COLLECT/CONTAINMENT	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 08. SOLID WASTE COLLECT/CONTAINMENT									
02 08 01. EXCAVATION									
02 08 01 03. CONTAMINATED SOIL									
02 08 01 03 01. PHASE I, Excavate/Load PCB Soils									
02 08 01 03 01 01. Excavate/Load PCB Soils									
L USR AA <02220 0000 > Excavate top 36-inches of soil			0.06	1.59	0.55	0.00	0.00	2.14	
Use 1.12 swell factor.	35.00 LCY XXQNA	28.75	2	56	19	0	0	75	2.14
USR AA <02220 0000 > Load excavated/stockpiled soil			0.03	0.94	2.03	0.00	0.00	2.97	
load in 28-ton dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy	35.00 LCY XXQMG	28.75	1	33	71	0	0	104	2.97
Excavate/Load PCB Soils	31.00 CY		3	89	90	0	0	179	5.77
02 08 01 03 01 02. Transport PCB Soils - Arlington									
Unit cost used below from Waste Management Inc., Arlington disposal fac.									
USR AA <02220 0000 > Transport soil to Arlington, OR			0.00	0.00	0.00	0.00	400.00	400.00	
35 cy x 3,100lb/cy / 2000lb/ton = 54.25 tons @ 28 tons/truck = 2 trucks	2.00 TRK	0.00	0	0	0	0	800	800	400.00
USR AA <02220 0000 > Disposal of soil in landfill			0.00	0.00	0.00	0.00	134.00	134.00	
	54.50 TON	0.00	0	0	0	0	7,303	7,303	134.00
USR AA <02220 0000 > Oregon state environmental tax			0.00	0.00	0.00	0.00	27.00	27.00	
	54.50 TON	0.00	0	0	0	0	1,472	1,472	27.00
USR AA <02220 0000 > Soil profile fee			0.00	0.00	0.00	0.00	300.00	300.00	
	1.00 EA	0.00	0	0	0	0	300	300	300.00
Transport PCB Soils - Arlington	31.00 CY		0	0	0	0	9,875	9,875	318.53
02 08 01 03 01 03. PPEquip, Modified Class D									
M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr)			0.00	0.00	11.50	0.00	0.00	11.50	
	12.00 EA N/A	0.00	0	0	138	0	0	138	11.50
M HTW AA <01951 5204 > Coveralls, Tyvek			0.00	0.00	0.00	7.55	0.00	7.55	
	12.00 EA N/A	0.00	0	0	0	91	0	91	7.55
M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves			0.00	0.00	2.30	0.00	0.00	2.30	
	12.00 PR N/A	0.00	0	0	28	0	0	28	2.30

02 08. SOLID WASTE COLLECT/CONTAINMENT	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
HTW AA <01951 5726 > Half-Mask Air Purifying Respirators	12.00 EA N/A	0.00	0.00 0	0.00 0	0.00 0	19.94 239	0.00 0	19.94 239	19.94
USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost)	3.00 DAY ULABA	0.13	10.00 30	234.30 703	1.45 4	34.83 104	0.00 0	270.58 812	270.58
M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental)	3.00 DAY N/A	0.00	0.00 0	0.00 0	0.00 0	26.95 81	0.00 0	26.95 81	26.95
HTW AA <01951 5723 > Cartridges, Respirator	24.00 EA N/A	0.00	0.00 0	0.00 0	0.00 0	25.87 621	0.00 0	25.87 621	25.87
USR AA <01951 5805 > Disposal Allowance. Allow $100/day for disposal of personnel protection items and equipment/vehicle decon water.	3.00 DAY N/A	0.00	0.00 0	0.00 0	0.00 0	0.00 0	100.00 300	100.00 300	100.00
PPEquip, Modified Class D	3.00 DAY		30	703	170	1,136	300	2,309	769.66
PHASE I, Excavate/Load PCB Soils	230.00 CY		33	791	260	1,136	10,175	12,362	53.75

02 08 01 03 03. Post Removal - Site Re-grading

02 08 01 03 03 01. Site Re-grading
Allow 1/4-day for site re-grading after site is certified clean.

L USR AA <02220 0000 > Excavation crew	0.25 DAY XXQNA	0.13	14.00 4	365.22 91	126.91 32	0.00 0	0.00 0	492.13 123	492.13
USR AA <02220 0000 > Load crew Allow for 5 CY of random fill, delivered.	0.25 DAY XXQMG	0.13	8.00 2	216.72 54	465.86 116	53.90 13	0.00 0	736.48 184	736.48
Site Re-grading			6	145	148	13	0	307	
Post Removal - Site Re-grading			6	145	148	13	0	307	
CONTAMINATED SOIL			39	937	408	1,150	10,175	12,669	
EXCAVATION			39	937	408	1,150	10,175	12,669	

02 21. DEMOBILIZATION	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 21. DEMOBILIZATION											
02 21 04. DEMOB OF EQUIPMENT & PERSONNEL											
02 21 04 01. TRANSPORTATION											
02 21 04 01 01. PH I, Demob of equipment Allow 75% of Phase I & II equipment mobilization and site setup.											
PH I, Demob of equipment					0	0	7,575	0	0	7,575	
TRANSPORTATION					0	0	7,575	0	0	7,575	
DEMOB OF EQUIPMENT & PERSONNEL					0	0	7,575	0	0	7,575	
HANFORD: REMEDIATION					39	13,637	13,368	6,370	15,875	49,249	

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PROJECT PCOFFR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE DISPOSAL, PCB>50 PPM
** CREW BACKUP **

SRC	ITEM ID	DESCRIPTION	NO.	UOM	RATE	**** LABOR **** HOURS	COST	**** EQUIP **** HOURS	COST	TOTAL COST
	ULABA	1 B-laborer + Small Tools			PROD = 100%				CREW HOURS =	24
MIL	B-LABORER F	Laborer (Semi-Skilled)	0.25	HR	23.83	0.25	5.96			5.96
MIL	B-LABORER L	Laborer (Semi-Skilled)	1.00	HR	23.33	1.00	23.33			23.33
MIL	XMIXX020 E	Small Tools	0.13	HR	1.39			0.13	0.18	0.18
	TOTAL					1.25	29.29	0.13	0.18	29.47
	XXQMG	1 X-eqoprmed + 1 Front End Ldr, 5-1/4 Cy, Wheel			PROD = 100%				CREW HOURS =	3
MIL	L40CA007 E	LDR,FE,WH, 5-1/4 CY ARTIC,980-C	1.00	HR	58.23			1.00	58.23	58.23
MIL	X-EQOPRMEDL	Outside Equip. Op. Medium	1.00	HR	27.09	1.00	27.09			27.09
	TOTAL					1.00	27.09	1.00	58.23	85.32
	XXQNA	1 X-eqoprmed + 1 Dozer, Cat D-3C, 65 Hp			PROD = 100%				CREW HOURS =	3
MIL	T10CA001 E	BLADE,POWER ANGLE TILT,FOR D3	1.00	HR	1.92			1.00	1.92	1.92
MIL	T15CA003 E	DOZER,CWLR,D-3C,PS,(ADD BLADE)	1.00	HR	13.94			1.00	13.94	13.94
MIL	X-LABORER L	Outside Laborer	0.50	HR	23.33	0.50	11.67			11.67
MIL	X-EQOPRMEDL	Outside Equip. Op. Medium	1.00	HR	27.09	1.00	27.09			27.09
MIL	X-EQOPRMEDF	Outside Equip. Op. Medium	0.25	HR	27.59	0.25	6.90			6.90
	TOTAL					1.75	45.65	2.00	15.86	61.52

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT PCOFFR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE DISPOSAL, PCB>50 PPM
** LABOR BACKUP **

TIME 13:59:27

SRC	LABOR ID	DESCRIPTION	BASE	OVERTM	TXS/INS	FRNG	TRVL	RATE	UOM	UPDATE	**** TOTAL **** DEFAULT	HOURS
MIL	B-LABORER	Laborer/Helper	23.33	0.0%	0.0%	0.00	0.00	23.33	HR	10/15/92	22.36	30
MIL	X-EQOPRMED	Outside Equipment Oper. Medium	27.09	0.0%	0.0%	0.00	0.00	27.09	HR	10/15/92	25.84	7
MIL	X-LABORER	Outside Laborer	23.33	0.0%	0.0%	0.00	0.00	23.33	HR	10/15/92	22.36	2

SRC EQUIP ID	DESCRIPTION	DEPR	CAPT	FUEL	FOG	EQ REP	TR WR	TR REP	TOTAL	UOM	** TOTAL ** HOURS
MIL L40CA007	LDR,FE,WH, 5-1/4 CY ARTIC,980-C	17.46	7.15	7.97	2.3	15.74	6.54	0.98	58.23	HR	3
MIL T10CA001	BLADE,POWER ANGLE TILT,FOR D3	0.75	0.27		0.0	0.82			1.92	HR	3
MIL T15CA003	DOZER,CWLR,D-3C,PS,(ADD BLADE)	3.51	1.39	2.14	0.7	6.14			13.94	HR	3
MIL XMIXX020	Small Tools	0.46	0.17	0.13	0.0	0.57			1.39	HR	3

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** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/01/93

PROJECT DIRECT COST COLUMNS

Col Type	H	L	E	M	U
Rep Width	8	10	10	12	10
Title	MHRS	LABR	EQUIP	MAT	OTHER

PROJECT INDIRECT COST COLUMNS

Col Type	O	U	P	B	U
Rep Width	9	9	9	9	9
Title	FOOH	HOOH	PROF	BOND	B&O TAX

PROJECT OWNER COST COLUMNS

Col Type	U	U	X	X	X
Rep Width	12	12	0	0	0
Title	S & A	CONTG	(Unused)	(Unused)	(Unused)

PROJECT BREAKDOWN

PROJECT ID	Length	Trail Sep	Level Title	2nd View Order
Level 1 ID :	2		Des/Actn	0
Level 2 ID :	2		Feature	0
Level 3 ID :	2		SubFeat	0
Level 4 ID :	2		System	0
Level 5 ID :	4		Bid Item	0
Level 6 ID :	4	-	Task	0

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

Col Type	X	X	X	X	X
Rep Width	0	0	0	0	0
Title	(Unused)	(Unused)	(Unused)	(Unused)	(Unused)
Shadow	X	X	X	X	X

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 3
Table of Contents Levels : 5

		0	1	2	3	4	5	6	7
ROW OPTIONS	Print Titles at Levels :		Y	Y	Y	Y	Y	Y	
	Print Totals at Levels :		N	N	Y	Y	Y	Y	
	Print Notes at Levels :	Y	Y	Y	Y	Y	Y	Y	Y
	Print Unit Cost Row :	Y							
	Print Page Footer :	N							
	Show Cost Codes :	Y							
COLUMNS OPTIONS	Print Crew Id :	Y							
	Crew Output :	Y							
	Unit Cost :	Y							
UPB TITLES	No. of Levels to Print :	0							
	Bracket Titles With :	- :							
	Include titles Notes :	Y							

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1	FOOH	: JOB OFFICE OVERHEAD
Column 2	HOOH	: HOME OFFICE OVERHEAD
Column 3	PROF	: PROFIT
Column 4	BOND	: PERFORMANCE BOND
Column 5	B&O TAX	: B & O AND OTHER TAXES

Column 1	S & A	: S & A
Column 2	CONTG	: CONTINGENCY
Column 3	(Unused)	:
Column 4	(Unused)	:
Column 5	(Unused)	:

STANDARD COLUMN WIDTHS

Quantity Columns	: 10
Total cost Columns	: 12
Unit Cost Columns	: 12

SUMMARY FEATURES

Round Totals Column	: T-Tens
Contingency Notes	: Yes
Show Project Totals	: Yes

REPORT SELECTION

Project Settings :	Y
Contractor Settings :	Y
Link Listing :	N

Measurement Units : Original

	REPORT FORMAT TYPE			FOR LEVEL (S)						
	Direct	Indirect	Owner	0	1	2	3	4	5	6
Detail :	Y									
Project :	N	Y	Y	N	Y	N	N	N	Y	
Contractor :	N	N		N	N	N	N	N	N	
Division :	N	N	N	Y	N	N	N	N	N	
System :	N	N	N	Y	N	N	N	N	N	
2nd View :	N									
Crew :	Y			Y	N	N	N	N	N	
Labor :	Y									
Equipment :	Y									

** OWNER SETTINGS **

		AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
Project Information Record							
02 REMEDIAL ACTION							
	S & A	P	20.00				
	CONTINGENCY	P	0.00				
02 01 MOBILIZATION AND PREPATORY WORK							
02 01 01 MOB OF EQUIPMENT & PERSONNEL							
02 01 01 1 TRANSPORTATION							
02 01 01 1 01- Ph I, Equip Mob, Detailed List							
	S & A	O					
	CONTINGENCY	P	20.00				
02 01 01 1 02- Ph II, Equip Mob, Detailed List							
	S & A	O					
	CONTINGENCY	P	20.00				
02 01 03 SETUP/CONSTRUCT TEMP FACILITIES							
02 01 03 01 TRAILERS AND BUILDINGS							
02 01 03 01 01 Ph I, Office Trailers - setup							
	S & A	O					
	CONTINGENCY	P	20.00				
02 01 03 02 DECONTAMINATION FACILITIES							
02 01 03 02 01 Personnel Decon Facilities							
	S & A	O					
	CONTINGENCY	P	20.00				
02 01 03 02 02 Equip/Vehicle Decon Facilities							
	S & A	O					
	CONTINGENCY	P	20.00				
02 02 MONITOR, SAMPLE, TEST, ANALYSIS							
02 02 06 SAMPLING SOIL, SED & SOLID WASTE							
02 02 06 01 SURFACE SOIL							
02 02 06 01 01 PHASE I, Soil Sample							
02 02 06 01 01 01 Soil Sampling							
	S & A	O					
	CONTINGENCY	P	20.00				
02 02 06 01 01 02 QA Report							
	S & A	O					
	CONTINGENCY	P	20.00				
02 02 91 QA/Safety Monitoring							
02 02 91 01 QA/Safety Monitoring							
02 02 91 01 01 Safety and Quality Assurance							
	S & A	O					
	CONTINGENCY	P	20.00				

** OWNER SETTINGS **

		AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
02 03 SITE WORK							
02 03 05 FENCING							
02 03 05 01 FENCING							
02 03 05 01 01 Temporary Fencing							
02 03 05 01 01 01 Temporary Fencing - 6' Security							
S & A		O					
CONTINGENCY		P	20.00				
02 08 SOLID WASTE COLLECT/CONTAINMENT							
02 08 01 EXCAVATION							
02 08 01 03 CONTAMINATED SOIL							
02 08 01 03 01 PHASE I, Excavate/Load PCB Soils							
02 08 01 03 01 01 Excavate/Load PCB Soils							
S & A		O					
CONTINGENCY		P	40.00				
02 08 01 03 01 02 Transport PCB Soils - Arlington							
S & A		O					
CONTINGENCY		P	25.00				
02 08 01 03 01 03 PPEquip, Modified Class D							
S & A		O					
CONTINGENCY		P	25.00				
02 08 01 03 03 Post Removal - Site Re-grading							
02 08 01 03 03 01 Site Re-grading							
S & A		O					
CONTINGENCY		P	25.00				
02 21 DEMOBILIZATION							
02 21 04 DEMOB OF EQUIPMENT & PERSONNEL							
02 21 04 01 TRANSPORTATION							
02 21 04 01 01 PH I, Demob of equipment							
S & A		O					
CONTINGENCY		P	20.00				

** CONTRACTOR SETTINGS **

		AMOUNT	PCT	PCT S	RISK	DIFF	SIZE	PERIOD	INVEST	ASSIST	SUBCON
AA REMEDIAL GENERAL CONTRACTOR											
JOB OFFICE OVERHEAD	P		15.00								
HOME OFFICE OVERHEAD	P		5.00								
PROFIT	P		8.00								
PERFORMANCE BOND	C			(Class: B)							
B & O AND OTHER TAXES	P		1.00								

HORN RAPIDS LANDFILL
ONSITE INCINERATION OF SOILS
WITH >50 mg/kg PCB's CONTAMINATION

9 3 1 0 9 7 3 2 0 6 3

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HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
HORN RAPIDS LDFL (PCBs HOT SPOT)
ON-SITE INCINERATE, PCB >50ppm

Designed By:
Estimated By:

Prepared By:
USACE/CENPW COST ENGR BRANCH

Date: 03/09/93
Est Construction Time: 80 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Alternative Estimates

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.
".23" is the Subproject (ie. 1100-EM)
".01" is the Operable Unit
".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "02", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is FY 93. S & A is estimated at 20%, and consists of NPW's Project Management @ 5%, Construction Management @ 10%, and Engineering During Construction @ 5%. See Contingency Notes (Title Page 3) for explanation of Contingency percentages. Contingency was applied at Level 5/6 in the estimate, to allow use of different percentages for the various types of work (see Settings for which precentage was applied). See Detail Page 1 for explanation of Contractor Indirect percentages used. E&D and Escalation will be added by the NPW-Hanford Project Manager.

Horn Rapids Landfill (PCBs Hot Spot), On-site Incineration

This project estimate covers the cleanup of the PCBs "Hot Spot" in the Horn Rapids Landfill (HRL) by On-site Incineration. The HRL contains an area of about 600 CY of PCB contaminated soil. THIS estimate covers the cost for removal the highly contaminated soil (>50ppm) estimated to be 31 CY.

The incinerator mobilization and setup cost will be born by the other two sites, the UN-1100-6 and Ephemeral Pool, as this site is considered incidental.

1. Normal Contingency for this level of estimate is 20-30%.

2. Using 50% Contingency for Setup, as it is undefined.

3. Using higher Contingency for the random fill and top soil as quantities may change, and location and costs of fill and top soil have been assumed.

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SUMMARY REPORTS — SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 2.....1
PROJECT OWNER SUMMARY - LEVEL 6.....2
PROJECT INDIRECT SUMMARY - LEVEL 2.....5
PROJECT INDIRECT SUMMARY - LEVEL 6.....6

DETAILED ESTIMATE — DETAIL PAGE

02. REMEDIAL ACTION
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & FACILITIES
1. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
02. Mob, Incinerator.....2
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Assembly and Setup.....3
02. DECONTAMINATION FACILITIES
01. Assembly and Setup.....3
05. PRELIMINARY SITE PREP.....3
05. CONSTRUCT TEMPORARY UTILITIES.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
06. SAMPLING SOIL, SED & SOLID WASTE
01. SURFACE SOIL
01. PHASE I, Soil Sample.....4
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....5
14. THERMAL TREATMENT
01. INCINERATION
01. SOLIDS PREPARATION AND HANDLING
01. Phase I - Incineration.....6
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & FACILITIES
01. TRANSPORTATION
01. Demobilization.....8

BACKUP REPORTS — BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

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9 1 0 2 3 3 0 7 0

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 REMEDIAL ACTION							
02 01 MOBILIZATION & PREPARATORY WORK		37,000	7,000	11,000	56,000		
02 02 MONITOR, SAMPLE, TEST, ANALYSIS		12,000	2,000	3,000	17,000		
02 14 THERMAL TREATMENT		34,000	7,000	12,000	53,000		
02 21 DEMOBILIZATION		27,000	5,000	7,000	39,000		
REMEDIAL ACTION		110,000	22,000	33,000	165,000		
HANFORD: REMEDIATION		110,000	22,000	33,000	165,000		

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 REMEDIAL ACTION							
02 01 MOBILIZATION & PREPARATORY WORK							
02 01 01 MOB OF EQUIPMENT & FACILITIES							
02 01 01 1 TRANSPORTATION							
02 01 01 1 01 Equipment Mob, Detailed List							
Equipment Mob, Detailed List		3,470	690	830	5,000		1
02 01 01 1 02 Mob, Incinerator							
02 01 01 1 02 01 Mob, Incinerator		0	0	0	0		1
02 01 01 1 02 02 Trial Burn and Lab Analysis		26,590	5,320	6,380	38,280		1
Mob, Incinerator		26,590	5,320	6,380	38,280		1
TRANSPORTATION		30,060	6,010	7,210	43,280		
MOB OF EQUIPMENT & FACILITIES		30,060	6,010	7,210	43,280		
02 01 04 SETUP/CONSTRUCT TEMP FACILITIES							
02 01 04 01 TRAILERS AND BUILDINGS							
02 01 04 01 01 Assembly and Setup							
02 01 04 01 01 01 Assembly and Setup	100.00 HR	3,790	760	2,270	6,820	68.19	2
Assembly and Setup		3,790	760	2,270	6,820		2
TRAILERS AND BUILDINGS		3,790	760	2,270	6,820		
02 01 04 02 DECONTAMINATION FACILITIES							
02 01 04 02 01 Assembly and Setup							
02 01 04 02 01 01 Assembly and Setup	80.00 HR	3,030	610	1,820	5,460	68.19	2
Assembly and Setup		3,030	610	1,820	5,460		2
DECONTAMINATION FACILITIES		3,030	610	1,820	5,460		
02 01 04 05 PRELIMINARY SITE PREP							

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
SETUP/CONSTRUCT TEMP FACILITIES		6,820	1,360	4,090	12,270		
02 01 05 CONSTRUCT TEMPORARY UTILITIES							
MOBILIZATION & PREPARATORY WORK		36,880	7,380	11,300	55,550		
02 02 MONITOR, SAMPLE, TEST, ANALYSIS							
02 02 06 SAMPLING SOIL, SED & SOLID WASTE							
02 02 06 01 SURFACE SOIL							
02 02 06 01 01 PHASE I, Soil Sample							
02 02 06 01 01 01 Soil Sampling - PCBs	11.00 EA	2,920	580	700	4,210	382.83	1
02 02 06 01 01 02 QA Report		1,990	400	480	2,870		
PHASE I, Soil Sample	11.00 EA	4,920	980	1,180	7,080	643.85	
SURFACE SOIL		4,920	980	1,180	7,080		
SAMPLING SOIL, SED & SOLID WASTE		4,920	980	1,180	7,080		
02 02 91 QA/Safety Monitoring							
02 02 91 01 QA/Safety Monitoring							
02 02 91 01 01 QA/Safety Monitoring							
02 02 91 01 01 01 QA/Safety Monitoring	1.00 WK	6,910	1,380	1,660	9,950	9953.51	1
QA/Safety Monitoring		6,910	1,380	1,660	9,950		
QA/Safety Monitoring		6,910	1,380	1,660	9,950		
QA/Safety Monitoring		6,910	1,380	1,660	9,950		
MONITOR, SAMPLE, TEST, ANALYSIS		11,830	2,370	2,840	17,040		
02 14 THERMAL TREATMENT							
02 14 01 INCINERATION							
02 14 01 01 SOLIDS PREPARATION AND HANDLING							

		QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 14 01 01 01	Phase I - Incineration							
02 14 01 01 01 01	PPEquip, Modified Class D	1.00 DAY	1,020	200	310	1,530	1534.61	1
02 14 01 01 01 02A	Excavate, haul to Incinerator	31.00 CY	210	40	80	330	10.76	3
02 14 01 01 01 02B	On-site Incineration	31.00 CY	32,570	6,510	11,720	50,800	1638.85	3
02 14 01 01 01 02C	Disposal, On-site	31.00 CY	110	20	40	180	5.69	3
	Phase I - Incineration	31.00 CY	33,920	6,780	12,150	52,850	1704.80	
	SOLIDS PREPARATION AND HANDLING		33,920	6,780	12,150	52,850		
	INCINERATION		33,920	6,780	12,150	52,850		
	THERMAL TREATMENT		33,920	6,780	12,150	52,850		
02 21	DEMOBILIZATION							
02 21 04	DEMOB OF EQUIPMENT & FACILITIES							
02 21 04 01	TRANSPORTATION							
02 21 04 01 01	Demobilization							
02 21 04 01 01 01	Demob - Equipment & Setup		27,420	5,480	6,580	39,480		1
	Demobilization		27,420	5,480	6,580	39,480		
	TRANSPORTATION		27,420	5,480	6,580	39,480		
	DEMOB OF EQUIPMENT & FACILITIES		27,420	5,480	6,580	39,480		
	DEMOBILIZATION		27,420	5,480	6,580	39,480		
	REMEDIAL ACTION		110,040	22,010	32,870	164,920		
	HANFORD: REMEDIATION		110,040	22,010	32,870	164,920		

PROJECT PCOSIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, HRL PCBs HOT SPOT, OSI: PCB > 50 PPM
** PROJECT INDIRECT SUMMARY - LEVEL 2 (Rounded to 10's) **

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 REMEDIAL ACTION									
02 01 MOBILIZATION & PREPARATORY WORK		27,740	4,160	1,600	2,680	330	370	36,880	
02 02 MONITOR, SAMPLE, TEST, ANALYSIS		8,900	1,340	510	860	110	120	11,830	
02 14 THERMAL TREATMENT		25,520	3,830	1,470	2,460	310	340	33,920	
02 21 DEMOBILIZATION		20,630	3,090	1,190	1,990	250	270	27,420	
REMEDIAL ACTION		82,780	12,420	4,760	8,000	990	1,090	110,040	
HANFORD: REMEDIATION		82,780	12,420	4,760	8,000	990	1,090	110,040	
S & A								22,010	
SUBTOTAL								132,050	
CONTINGENCY								32,870	
TOTAL INCL OWNER COSTS								164,920	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 REMEDIAL ACTION									
02 01 MOBILIZATION & PREPARATORY WORK									
02 01 01 MOB OF EQUIPMENT & FACILITIES									
02 01 01 1 TRANSPORTATION									
02 01 01 1 01 Equipment Mob, Detailed List									
Equipment Mob, Detailed List		2,610	390	150	250	30	30	3,470	
02 01 01 1 02 Mob, Incinerator									
02 01 01 1 02 01 Mob, Incinerator		0	0	0	0	0	0	0	
02 01 01 1 02 02 Trial Burn and Lab Analysis		20,000	3,000	1,150	1,930	240	260	26,590	
Mob, Incinerator		20,000	3,000	1,150	1,930	240	260	26,590	
TRANSPORTATION		22,610	3,390	1,300	2,180	270	300	30,060	
MOB OF EQUIPMENT & FACILITIES		22,610	3,390	1,300	2,180	270	300	30,060	
02 01 04 SETUP/CONSTRUCT TEMP FACILITIES									
02 01 04 01 TRAILERS AND BUILDINGS									
02 01 04 01 01 Assembly and Setup									
02 01 04 01 01 01 Assembly and Setup	100.00 HR	2,850	430	160	280	30	40	3,790	37.88
Assembly and Setup		2,850	430	160	280	30	40	3,790	
TRAILERS AND BUILDINGS		2,850	430	160	280	30	40	3,790	
02 01 04 02 DECONTAMINATION FACILITIES									
02 01 04 02 01 Assembly and Setup									
02 01 04 02 01 01 Assembly and Setup	80.00 HR	2,280	340	130	220	30	30	3,030	37.88
Assembly and Setup		2,280	340	130	220	30	30	3,030	
DECONTAMINATION FACILITIES		2,280	340	130	220	30	30	3,030	
02 01 04 05 PRELIMINARY SITE PREP									

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
SETUP/CONSTRUCT TEMP FACILITIES		5,130	770	290	500	60	70	6,820	
02 01 05 CONSTRUCT TEMPORARY UTILITIES									
MOBILIZATION & PREPARATORY WORK		27,740	4,160	1,600	2,680	330	370	36,880	
02 02 MONITOR, SAMPLE, TEST, ANALYSIS									
02 02 06 SAMPLING SOIL, SED & SOLID WASTE									
02 02 06 01 SURFACE SOIL									
02 02 06 01 01 PHASE I, Soil Sample									
02 02 06 01 01 01 Soil Sampling - PCBs	11.00 EA	2,200	330	130	210	30	30	2,920	265.85
02 02 06 01 01 02 QA Report		1,500	230	90	140	20	20	1,990	
PHASE I, Soil Sample	11.00 EA	3,700	560	210	360	40	50	4,920	447.12
SURFACE SOIL		3,700	560	210	360	40	50	4,920	
SAMPLING SOIL, SED & SOLID WASTE		3,700	560	210	360	40	50	4,920	
02 02 91 QA/Safety Monitoring									
02 02 91 01 QA/Safety Monitoring									
02 02 91 01 01 QA/Safety Monitoring									
02 02 91 01 01 01 QA/Safety Monitoring	1.00 WK	5,200	780	300	500	60	70	6,910	6912.16
QA/Safety Monitoring		5,200	780	300	500	60	70	6,910	
QA/Safety Monitoring		5,200	780	300	500	60	70	6,910	
QA/Safety Monitoring		5,200	780	300	500	60	70	6,910	
MONITOR, SAMPLE, TEST, ANALYSIS		8,900	1,340	510	860	110	120	11,830	
02 14 THERMAL TREATMENT									
02 14 01 INCINERATION									
02 14 01 01 SOLIDS PREPARATION AND HANDLING									

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 14 01 01 01 Phase I - Incineration									
02 14 01 01 01 01 PPEquip, Modified Class D	1.00 DAY	770	120	40	70	10	10	1,020	1023.08
02 14 01 01 01 02A Excavate, haul to Incinerator	31.00 CY	160	20	10	20	0	0	210	6.90
02 14 01 01 01 02B On-site Incineration	31.00 CY	24,500	3,680	1,410	2,370	290	320	32,570	1050.54
02 14 01 01 01 02C Disposal, On-site	31.00 CY	90	10	0	10	0	0	110	3.65
Phase I - Incineration	31.00 CY	25,520	3,830	1,470	2,460	310	340	33,920	1094.09
SOLIDS PREPARATION AND HANDLING		25,520	3,830	1,470	2,460	310	340	33,920	
INCINERATION		25,520	3,830	1,470	2,460	310	340	33,920	
THERMAL TREATMENT		25,520	3,830	1,470	2,460	310	340	33,920	
02 21 DEMOBILIZATION									
02 21 04 DEMOB OF EQUIPMENT & FACILITIES									
02 21 04 01 TRANSPORTATION									
02 21 04 01 01 Demobilization									
02 21 04 01 01 01 Demob - Equipment & Setup		20,630	3,090	1,190	1,990	250	270	27,420	
Demobilization		20,630	3,090	1,190	1,990	250	270	27,420	
TRANSPORTATION		20,630	3,090	1,190	1,990	250	270	27,420	
DEMOB OF EQUIPMENT & FACILITIES		20,630	3,090	1,190	1,990	250	270	27,420	
DEMOBILIZATION		20,630	3,090	1,190	1,990	250	270	27,420	
REMEDIAL ACTION		82,780	12,420	4,760	8,000	990	1,090	110,040	
HANFORD: REMEDIATION		82,780	12,420	4,760	8,000	990	1,090	110,040	
S & A								22,010	
SUBTOTAL								132,050	
CONTINGENCY								32,870	
TOTAL INCL OWNER COSTS								164,920	

PROJECT PCOSIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, HRL PCBs HOT SPOT, OSI: PCB > 50 PPM
Project Distributed Costs

0 AA. REMEDIAL GENERAL CONTRACTOR	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

02. REMEDIAL ACTION
02 01. MOBILIZATION & PREPARATORY WORK
02 01 01. MOB OF EQUIPMENT & FACILITIES

02 01 01 1. TRANSPORTATION

02 01 01 1 01. Equipment Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi Radius mob is assumed.

	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
USR AA <01505 3237 > Mob, FEnd Ldr, Wheel, 4.0-6 CY, Articulated Fr, 100-mi rad	1.00 EA	0.00	0.00 0	0.00 0	750.00 750	0.00 0	0.00 0	750.00 750	750.00
USR AA <01505 4201 > Mob, Roller, Towed, 50-75 Ton, Pneumatic, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	550.00 550	0.00 0	0.00 0	550.00 550	550.00
USR AA <01505 5203 > Mob, Motor Grader, 150-200 HP, Art. Fr, Pwr Shift, 100-mi Rad	1.00 EA	0.00	0.00 0	0.00 0	525.00 525	0.00 0	0.00 0	525.00 525	525.00
USR AA <01505 7111 > Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	125.00 125	0.00 0	0.00 0	125.00 125	125.00
USR AA <01505 7123 > Mob, End Dump trailer, 12 CY w/CLT8000 Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	125.00 125	0.00 0	0.00 0	125.00 125	125.00
USR AA <01505 7131 > Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	150.00 150	0.00 0	0.00 0	150.00 150	150.00
USR AA <01505 8921 > Mob, Decontamination Trailer, w/25,000 GVW Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	135.00 135	0.00 0	0.00 0	135.00 135	135.00
M CIV AA <01500 1101 > Mob - Field Office Trailer	1.00 EA N/A	0.00	0.00 0	0.00 0	250.00 250	0.00 0	0.00 0	250.00 250	250.00

02 01. MOBILIZATION & PREPARATORY WORK	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
Equipment Mob, Detailed List			0	0	2,610	0	0	2,610	
02 01 01 1 02. Mob, Incinerator Mob cost for Incinerator from Vesta Technology.									
02 01 01 1 02 01. Mob, Incinerator Mob cost total: $200,000 (Vesta Technology). However, the HRL PCBs site is one of three sites that might use the incinerator, the other two sites being the Ephemeral pool and the UN-1100-6 site. Randy Chong said that the mob cost would be born by the other two sites, so no mob cost for HRL PCB.									
Mob, Incinerator			0	0	0	0	1	1	
02 01 01 1 02 02. Trial Burn and Lab Analysis Assume one Trial burn and Lab Analysis needed for each site's soil.									
Trial Burn and Lab Analysis			0	0	0	0	20,000	20,000	
Mob, Incinerator			0	0	0	0	20,001	20,001	
TRANSPORTATION			0	0	2,610	0	20,001	22,611	
MOB OF EQUIPMENT & FACILITIES			0	0	2,610	0	20,001	22,611	

02 01. MOBILIZATION & PREPARATORY WORK	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 01 04. SETUP/CONSTRUCT TEMP FACILITIES									
02 01 04 01. TRAILERS AND BUILDINGS									
02 01 04 01 01. Assembly and Setup									
02 01 04 01 01 01. Assembly and Setup Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added.									
Assembly and Setup	100.00 HR		0	2,500	250	100	0	2,850	28.50
Assembly and Setup			0	2,500	250	100	0	2,850	
TRAILERS AND BUILDINGS			0	2,500	250	100	0	2,850	
02 01 04 02. DECONTAMINATION FACILITIES									
02 01 04 02 01. Assembly and Setup A equipment/vehicle decon facility has been costed in the Asbestos Cap estimate, and this facility will be used by all cleanup sites.									
02 01 04 02 01 01. Assembly and Setup Allow 80 mhrs for setup of Decontamination trailer. An allowance for some equipment and material has been added.									
Assembly and Setup	80.00 HR		0	2,000	200	80	0	2,280	28.50
Assembly and Setup			0	2,000	200	80	0	2,280	
DECONTAMINATION FACILITIES			0	2,000	200	80	0	2,280	
02 01 04 05. PRELIMINARY SITE PREP Assume cost for incinerator site prep covered by the other two sites.									
PRELIMINARY SITE PREP			0	0	0	0	0	0	
SETUP/CONSTRUCT TEMP FACILITIES			0	4,500	450	180	0	5,130	

02 01. MOBILIZATION & PREPARATORY WORK	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 01 05. CONSTRUCT TEMPORARY UTILITIES Assume construction of Temporary Utilites for the Incinerator are covered by the other two sites.									
CONSTRUCT TEMPORARY UTILITIES			0	0	0	0	0	0	
02 02. MONITOR, SAMPLE, TEST, ANALYSIS									
02 02 06. SAMPLING SOIL, SED & SOLID WASTE									
02 02 06 01. SURFACE SOIL									
02 02 06 01 01. PHASE I, Soil Sample After the 3-feet of soil is excavated, take 9 samples (+2 QA) to evaluate PCB levels.									
02 02 06 01 01 01. Soil Sampling - PCBs Cost for analysis (Method 8080) from the Corps North Pacific Division (CENPD) Laboratory, with a 7-day turnaround.									
Soil Sampling - PCBs	11.00 EA		0	0	0	0	2,200	2,200	200.00
02 02 06 01 01 02. QA Report Cost for QA Report from CENPD Laboratory.									
QA Report			0	0	0	0	1,500	1,500	
PHASE I, Soil Sample	11.00 EA		0	0	0	0	3,700	3,700	336.36
SURFACE SOIL			0	0	0	0	3,700	3,700	
SAMPLING SOIL, SED & SOLID WASTE			0	0	0	0	3,700	3,700	

02 02. MONITOR, SAMPLE, TEST, ANALYSIS	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 02 91. QA/Safety Monitoring									
02 02 91 01. QA/Safety Monitoring									
02 02 91 01 01. QA/Safety Monitoring This item covers the QA/Safety Monitoring required for the Hanford site. Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.									
02 02 91 01 01 01. QA/Safety Monitoring This covers cost of QA and Safety oversight per week: WHC HPT: 40 Hrs @ $50/Hr COE Safety Rep: 40 Hrs @ $70/Hr COE S.A. for QA: 8 Hrs @ $50/Hr Estimated duration of job is 1 week, including Mob, Setup, & Demob.									
QA/Safety Monitoring	1.00 WK		0	5,200	0	0	0	5,200	5200.00
QA/Safety Monitoring			0	5,200	0	0	0	5,200	
QA/Safety Monitoring			0	5,200	0	0	0	5,200	
QA/Safety Monitoring			0	5,200	0	0	0	5,200	

02 14. THERMAL TREATMENT	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 14. THERMAL TREATMENT									
02 14 01. INCINERATION									
02 14 01 01. SOLIDS PREPARATION AND HANDLING									
02 14 01 01 01. Phase I - Incineration Phase I, covers excavation of the first 3-foot layer of soil, which contains the >50 ppm PCBs.									
02 14 01 01 01 01. PPEquip, Modified Class D Assume workers in modified Class D PPE (require negative respirator) during excavation and hauling to incinerator site, estimated to be 1 working day. Included also is a decon shower, and equipment decon equipment. This item covers 4 personnel.									
M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr)	4.00 EA N/A	0.00	0.00 0	0.00 0	11.50 46	0.00 0	0.00 0	11.50 46	11.50
M HTW AA <01951 5204 > Coveralls, Tyvek	4.00 EA N/A	0.00	0.00 0	0.00 0	0.00 0	7.55 30	0.00 0	7.55 30	7.55
M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves	4.00 PR N/A	0.00	0.00 0	0.00 0	2.30 9	0.00 0	0.00 0	2.30 9	2.30
HTW AA <01951 5726 > Half-Mask Air Purifying Respirators	4.00 EA N/A	0.00	0.00 0	0.00 0	0.00 0	19.94 80	0.00 0	19.94 80	19.94
USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost)	1.00 DAY ULABA	0.13	10.00 10	234.30 234	1.45 1	34.83 35	0.00 0	270.58 271	270.58
M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental)	1.00 DAY N/A	0.00	0.00 0	0.00 0	0.00 0	26.95 27	0.00 0	26.95 27	26.95
HTW AA <01951 5723 > Cartridges, Respirator	8.00 EA N/A	0.00	0.00 0	0.00 0	0.00 0	25.87 207	0.00 0	25.87 207	25.87
USR AA <01951 5805 > Disposal Allowance Allow $100/day for disposal of personnel protection items and equipment/vehicle decon water.	1.00 DAY N/A	0.00	0.00 0	0.00 0	0.00 0	0.00 0	100.00 100	100.00 100	100.00
PPEquip, Modified Class D	1.00 DAY		10	234	57	379	100	770	769.66
02 14 01 01 01 02A. Excavate, haul to Incinerator Assume incinerator within a mile of site. Excavate, haul, and stockpile at incinerator site.									
USR AA <02225 2112 > Excavate & Load, 1-CY Backhoe, Med Matl, 20 CY/Hr	35.00 LCY CODEG	20.00	0.08 3	2.03 71	0.60 21	0.00 0	0.00 0	2.63 92	2.63

02 14. THERMAL TREATMENT	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
USR AA <02225 3104 > Haul, 12 CY Truck, 1-Mi one-way			0.04	1.06	0.92	0.00	0.00	1.97	
20 MPH, 4 Cycles/Hr	35.00 LCY COEID	25.00	1	37	32	0	0	69	1.97
Excavate, haul to Incinerator	31.00 CY		4	108	53	0	0	161	5.19
02 14 01 01 01 02B. On-site Incineration									
On-site Incineration:									
processing rate - 5 Ton/D (3.35 LCY/D)									
cost - $700/CY (PCBs), includes power, water, & operator.									
(Vesta Technology)									
USR AA <02080 0501 > Processing - PCB soils			0.00	0.00	0.00	0.00	700.00	700.00	
Processing cost: $700/CY	35.00 LCY	0.00	0	0	0	0	24,500	24,500	700.00
Processing Rate: 5 tons/day									
1 LCY = 2,940 LB = 1.5 Ton									
5 T/D / 1.5 T/LCY = 3.35 LCY/D.									
Q: 31 BCY x 1.12 = 35 LCY									
On-site Incineration	31.00 CY		0	0	0	0	24,500	24,500	790.32
02 14 01 01 01 02C. Disposal, On-site									
Assume clean soil spread close to incinerator site. Soil is then covered with a 6" layer of random fill.									
USR AA <02221 6002 > Spread clean soil, 12" Layers			0.02	0.59	0.73	0.00	0.00	1.32	
Without Compaction	30.00 LCY CODTE	60.00	1	18	22	0	0	40	1.32
USR AA <02225 3104 > Haul, 12 CY Truck, 10-Mi one-way			0.05	1.32	1.15	3.77	0.00	6.24	
2 Cycles/Hr, haul in random-fill	6.00 LCY COEID	20.00	0	8	7	23	0	37	6.24
M USR AA <02221 6001 > Spread Random Fill, 6" Layer,			0.02	0.59	0.73	0.00	0.00	1.32	
Without Compaction	6.00 LCY CODTE	60.00	0	4	4	0	0	8	1.32
Disposal, On-site	31.00 CY		1	29	33	23	0	85	2.74
Phase I - Incineration	31.00 CY		15	372	143	401	24,600	25,516	823.08
SOLIDS PREPARATION AND HANDLING			15	372	143	401	24,600	25,516	
INCINERATION			15	372	143	401	24,600	25,516	

02 21. DEMOBILIZATION	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 21. DEMOBILIZATION											
02 21 04. DEMOB OF EQUIPMENT & FACILITIES											
02 21 04 01. TRANSPORTATION											
02 21 04 01 01. Demobilization											
02 21 04 01 01 01. Demob - Equipment & Setup Assume Demob at 75% of Mob and Site setup.											
Demob - Equipment & Setup					0	0	20,625	0	0	20,625	
Demobilization					0	0	20,625	0	0	20,625	
TRANSPORTATION					0	0	20,625	0	0	20,625	
DEMOB OF EQUIPMENT & FACILITIES					0	0	20,625	0	0	20,625	
HANFORD: REMEDIATION					15	10,072	23,828	581	48,301	82,782	

SRC	ITEM ID	DESCRIPTION	NO.	UOM	RATE	**** LABOR **** HOURS	COST	**** EQUIP **** HOURS	COST	TOTAL COST
	CODEG	1 B-eqoprmed + 1 Backhoe Loader, 55 Hp			PROD = 100%				CREW HOURS =	2
MIL	B-LABORER L	Laborer (Semi-Skilled)	0.50	HR	23.33	0.50	11.67			11.67
MIL	B-EQOPRMEDF	Eq Oper, Medium	1.00	HR	28.89	1.00	28.89			28.89
MIL	L50CS002 E	LDR,W/BH,WH,1.0CY FE BKT/24"DIP	1.00	HR	11.95			1.00	11.95	11.95
	TOTAL					1.50	40.56	1.00	11.95	52.50
	CODTE	1 B-eqoprmed + 1 Dozer, Cat D-6H, 165 Hp			PROD = 100%				CREW HOURS =	1
MIL	B-EQOPRMEDF	Eq Oper, Medium	0.25	HR	28.89	0.25	7.22			7.22
MIL	B-EQOPRMEDL	Eq Oper, Medium	1.00	HR	28.39	1.00	28.39			28.39
MIL	T10CA010 E	BLADE, ANGLE, HYDR, FOR D6	1.00	HR	4.05			1.00	4.05	4.05
MIL	T15CA010 E	DOZER,CWLR,D-6H,PS,(ADD BLADE)	1.00	HR	39.69			1.00	39.69	39.69
	TOTAL					1.25	35.61	2.00	43.74	79.35
	COEID	1 B-trkdvrhv + 1 Dump Truck, 12 Cy			PROD = 100%				CREW HOURS =	2
MIL	B-TRKDVRHVL	Truck Drivers, Heavy	1.00	HR	26.39	1.00	26.39			26.39
MIL	T40XX010 E	TRUCK OPT,REAR DUMP BODY, 12 CY	1.00	HR	2.69			1.00	2.69	2.69
MIL	T50GM016 E	TRK, HWY, 3 AXLE, 41000 GVW, 6X	1.00	HR	20.21			1.00	20.21	20.21
	TOTAL					1.00	26.39	2.00	22.90	49.29
	ULABA	1 B-laborer + Small Tools			PROD = 100%				CREW HOURS =	8
MIL	B-LABORER F	Laborer (Semi-Skilled)	0.25	HR	23.83	0.25	5.96			5.96
MIL	B-LABORER L	Laborer (Semi-Skilled)	1.00	HR	23.33	1.00	23.33			23.33
MIL	XMIXX020 E	Small Tools	0.13	HR	1.39			0.13	0.18	0.18
	TOTAL					1.25	29.29	0.13	0.18	29.47

Thu 11 Mar 1993

U.S. Army Corps of Engineers
PROJECT PCOSIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, HRL PCBs HOT SPOT, OSI: PCB > 50 PPM
** LABOR BACKUP **

TIME 11:47:36

BACKUP PAGE 2

SRC	LABOR ID	DESCRIPTION	BASE	OVERTM	TXS/INS	FRNG	TRVL	RATE	UOM	UPDATE	DEFAULT	HOURS
											**** TOTAL ****	
MIL	B-EQOPRMED	Equipment Operator, Medium	28.39	0.0%	0.0%	0.00	0.00	28.39	HR	10/15/92	26.13	3
MIL	B-LABORER	Laborer/Helper	23.33	0.0%	0.0%	0.00	0.00	23.33	HR	10/15/92	22.36	11
MIL	B-TRKDVRHV	Truck Drivers, Heavy	26.39	0.0%	0.0%	0.00	0.00	26.39	HR	10/15/92	25.61	2

SRC EQUIP ID	DESCRIPTION	DEPR	CAPT	FUEL	FOG	EQ REP	TR WR	TR REP	TOTAL UOM	** TOTAL ** HOURS
MIL L50CS002	LDR,W/BH,WH,1.0CY FE BKT/24"DIP	3.42	1.42	1.86	0.6	4.04	0.53	0.08	11.95 HR	2
MIL T10CA010	BLADE, ANGLE, HYDR, FOR D6	1.62	0.58		0.0	1.77			4.05 HR	1
MIL T15CA010	DOZER,CWLR,D-6H,PS,(ADD BLADE)	10.34	4.09	5.28	1.9	18.09			39.69 HR	1
MIL T40XX010	TRUCK OPT,REAR DUMP BODY, 12 CY	1.15	0.34		0.0	1.11			2.69 HR	2
MIL T50GM016	TRK, HWY, 3 AXLE, 41000 GVW, 6X4	4.17	1.32	7.46	2.0	3.69	1.29	0.19	20.21 HR	2
MIL XMIXX020	Small Tools	0.46	0.17	0.13	0.0	0.57			1.39 HR	1

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9 3 1 2 9 2 3 2 0 9 0

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/01/93

PROJECT DIRECT COST COLUMNS

Col Type	H	L	E	M	U
Rep Width	8	10	10	12	10
Title	MHRS	LABR	EQUIP	MAT	OTHER

PROJECT INDIRECT COST COLUMNS

Col Type	O	U	P	B	U
Rep Width	9	9	9	9	9
Title	FOOH	HOOH	PROF	BOND	B&O TAX

PROJECT OWNER COST COLUMNS

Col Type	U	U	X	X	X
Rep Width	12	12	0	0	0
Title	S & A	CONTG	(Unused)	(Unused)	(Unused)

PROJECT BREAKDOWN

PROJECT ID	Length	Trail Sep	Level Title	2nd View Order
Level 1 ID :	2		Des/Actn	0
Level 2 ID :	2		Feature	0
Level 3 ID :	2		SubFeat	0
Level 4 ID :	2		System	0
Level 5 ID :	4		Bid Item	0
Level 6 ID :	4	-	Task	0

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

Col Type	X	X	X	X	X
Rep Width	0	0	0	0	0
Title	(Unused)	(Unused)	(Unused)	(Unused)	(Unused)
Shadow	X	X	X	X	X

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 3
Table of Contents Levels : 5

		0	1	2	3	4	5	6	7
ROW OPTIONS	Print Titles at Levels :		Y	Y	Y	Y	Y	Y	
	Print Totals at Levels :		N	N	Y	Y	Y	Y	
	Print Notes at Levels :	Y	Y	Y	Y	Y	Y	Y	Y
	Print Unit Cost Row :	Y							
	Print Page Footer :	N							
	Show Cost Codes :	Y							
COLUMNS OPTIONS	Print Crew Id :	Y							
	Crew Output :	Y							
	Unit Cost :	Y							
UPB TITLES	No. of Levels to Print :	0							
	Bracket Titles With :	- :							
	Include titles Notes :	Y							

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH	: JOB OFFICE OVERHEAD
Column 2 HOOH	: HOME OFFICE OVERHEAD
Column 3 PROF	: PROFIT
Column 4 BOND	: PERFORMANCE BOND
Column 5 B&O TAX	: B & O AND OTHER TAXES

Column 1 S & A	: S & A
Column 2 CONTG	: CONTINGENCY
Column 3 (Unused)	:
Column 4 (Unused)	:
Column 5 (Unused)	:

STANDARD COLUMN WIDTHS

Quantity Columns	: 10
Total cost Columns	: 12
Unit Cost Columns	: 12

SUMMARY FEATURES

Round Totals Column	: T-Tens
Contingency Notes	: Yes
Show Project Totals	: Yes

REPORT SELECTION

Project Settings :	Y
Contractor Settings :	Y
Link Listing :	N

Measurement Units : Original

	REPORT FORMAT TYPE			FOR LEVEL (S)						
	Direct	Indirect	Owner	0	1	2	3	4	5	6
Detail :	Y									
Project :	N	Y	Y		N	Y	N	N	N	Y
Contractor :	N	N		N	N	N	N	N	N	N
Division :	N	N	N	Y	N	N	N	N	N	N
System :	N	N	N	Y	N	N	N	N	N	N
2nd View :	N									
Crew :	Y			Y	N	N	N	N	N	N
Labor :	Y									
Equipment :	Y									

** OWNER SETTINGS **

		AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
Project Information Record							
02 REMEDIAL ACTION							
	S & A	P	20.00				
	CONTINGENCY	P	0.00				
02 01 MOBILIZATION & PREPARATORY WORK							
02 01 01 MOB OF EQUIPMENT & FACILITIES							
02 01 01 1 TRANSPORTATION							
02 01 01 1 01 Equipment Mob, Detailed List							
	S & A	O					
	CONTINGENCY	P	20.00				
02 01 01 1 02 Mob, Incinerator							
02 01 01 1 02 01 Mob, Incinerator							
	S & A	O					
	CONTINGENCY	P	20.00				
02 01 01 1 02 02 Trial Burn and Lab Analysis							
	S & A	O					
	CONTINGENCY	P	20.00				
02 01 04 SETUP/CONSTRUCT TEMP FACILITIES							
02 01 04 01 TRAILERS AND BUILDINGS							
02 01 04 01 01 Assembly and Setup							
02 01 04 01 01 01 Assembly and Setup							
	S & A	O					
	CONTINGENCY	P	50.00				
02 01 04 02 DECONTAMINATION FACILITIES							
02 01 04 02 01 Assembly and Setup							
02 01 04 02 01 01 Assembly and Setup							
	S & A	O					
	CONTINGENCY	P	50.00				
02 01 04 05 PRELIMINARY SITE PREP							
	S & A	O					
	CONTINGENCY	O					
02 01 05 CONSTRUCT TEMPORARY UTILITIES							
	S & A	O					
	CONTINGENCY	O					
02 02 MONITOR, SAMPLE, TEST, ANALYSIS							
02 02 06 SAMPLING SOIL, SED & SOLID WASTE							
02 02 06 01 SURFACE SOIL							
02 02 06 01 01 PHASE I, Soil Sample							
02 02 06 01 01 01 Soil Sampling - PCBs							
	S & A	O					
	CONTINGENCY	P	20.00				

** OWNER SETTINGS **

		AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
02 02 06 01 01 02 QA Report							
S & A	O						
CONTINGENCY	P		20.00				
02 02 91 QA/Safety Monitoring							
02 02 91 01 QA/Safety Monitoring							
02 02 91 01 01 QA/Safety Monitoring							
02 02 91 01 01 01 QA/Safety Monitoring							
S & A	O						
CONTINGENCY	P		20.00				
02 14 THERMAL TREATMENT							
02 14 01 INCINERATION							
02 14 01 01 SOLIDS PREPARATION AND HANDLING							
02 14 01 01 01 Phase I - Incineration							
02 14 01 01 01 01 PPEquip, Modified Class D							
S & A	O						
CONTINGENCY	P		25.00				
02 14 01 01 01 02A Excavate, haul to Incinerator							
S & A	O						
CONTINGENCY	P		30.00				
02 14 01 01 01 02B On-site Incineration							
S & A	O						
CONTINGENCY	P		30.00				
02 14 01 01 01 02C Disposal, On-site							
S & A	O						
CONTINGENCY	P		30.00				
02 21 DEMOBILIZATION							
02 21 04 DEMOB OF EQUIPMENT & FACILITIES							
02 21 04 01 TRANSPORTATION							
02 21 04 01 01 Demobilization							
02 21 04 01 01 01 Demob - Equipment & Setup							
S & A	O						
CONTINGENCY	P		20.00				

** CONTRACTOR SETTINGS **

		AMOUNT	PCT	PCT S	RISK	DIFF	SIZE	PERIOD	INVEST	ASSIST	SUBCON
AA REMEDIAL GENERAL CONTRACTOR											
JOB OFFICE OVERHEAD	P		15.00								
HOME OFFICE OVERHEAD	P		5.00								
PROFIT	P		8.00								
PERFORMANCE BOND	C			(Class: B)							
B & O AND OTHER TAXES	P		1.00								

HORN RAPIDS LANDFILL
OFFSITE INCINERATION OF SOILS
WITH >50 mg/kg PCB's CONTAMINATION

9 3 1 2 9 1 3 0 9 7

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HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
HORN RAPID LANDFILL
OFF-SITE INCINERATE, PCB >50PPM

Designed By:
Estimated By:

Prepared By:
USACE/CENPW COST ENGR BRANCH

Date: 03/09/93

M C A C E S G O L D E D I T I O N
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Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Alternative Estimates

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.
"23" is the Subproject (ie. 1100-EM)
"01" is the Operable Unit
".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "02", represent Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is FY 93. S & A is estimated at 20%, and consists of NPW's Project Management @ 5%, Construction Management @ 10%, and Engineering During Construction @ 5%. See Contingency Notes (Title Page 3) for explanation of Contingency percentages. Contingency was applied at Level 5/6 in the estimate, to allow use of different percentages for the various types of work (see Settings for which percentage was applied). See Detail Page 1 for explanation of Contractor Indirect percentages used. E&D and Escalation will be added by the NPW-Hanford Project Manager.

Horn Rapid Landfill (PCB Hot Spot), Off-site Incineration

This project estimate covers the Off-site incineration of PCB's in the Horn Rapid Landfill (HRL). THIS estimate covers removal of highly PCB contaminated soil (PCB > 50 ppm) estimated at 31 CY. PCB contaminated soils will be loaded into 20-ton roll-off units, for transport to Texas.

1. Contingency is based on uncertainty of the amount of time required to do the represented in the estimate, etc.

2. Contingency is based on the uncertainty of the quantities presented.

3. Contingency based on the unit costs obtained by Vendor and therefore may be different by the time work will actually be accomplished.

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SUMMARY REPORTS — SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 2.....1
PROJECT OWNER SUMMARY - LEVEL 6.....2
PROJECT INDIRECT SUMMARY - LEVEL 2.....6
PROJECT INDIRECT SUMMARY - LEVEL 6.....7

DETAILED ESTIMATE — DETAIL PAGE

02. REMEDIAL ACTION
- 01. MOBILIZATION AND PREPATORY WORK
  - 01. MOB OF EQUIPMENT & PERSONNEL
    - 1. TRANSPORTATION
      - 01-. Ph I, Equip Mob, Detailed List.....1
      - 02-. Ph II, Equip Mob, Detailed List.....2
  - 03. SETUP/CONSTRUCT TEMP FACILITIES
    - 01. TRAILERS AND BUILDINGS
      - 01. Ph I, Office Trailers - setup.....3
    - 02. DECONTAMINATION FACILITIES
      - 01. Personnel Decon Facilities.....3
      - 02. Equip/Vehicle Decon Facilities.....3
- 02. MONITOR, SAMPLE, TEST, ANALYSIS
  - 06. SAMPLING SOIL, SED & SOLID WASTE
    - 01. SURFACE SOIL
      - 01. PHASE I, Soil Sample.....4
  - 91. QA/Safety Monitoring
    - 01. QA/Safety Monitoring
      - 01. Safety and Quality Assurance.....5
- 03. SITE WORK
  - 05. FENCING
    - 01. FENCING
      - 01. Temporary Fencing.....6
- 08. SOLIDS COLLECTION & CONTAINMENT
  - 01. EXCAVATION
    - 03. CONTAMINATED SOIL
      - 01. PHASE I, Excavate/Load PCB Soils.....7
      - 03. Post Removal - Site Re-grade.....8
- 21. DEMOBILIZATION
  - 04. DEMOB OF EQUIPMENT & PERSONNEL
    - 01. TRANSPORTATION
      - 01. PH I, Demob of equipment.....9

BACKUP REPORTS — BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

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Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT POFFIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE INCIN, PCB > 50 PPM
** PROJECT OWNER SUMMARY - LEVEL 2 (Rounded to 1000's) **

TIME 14:58:37

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 REMEDIAL ACTION							
02 01 MOBILIZATION AND PREPATORY WORK		13,000	3,000	3,000	19,000		
02 02 MONITOR, SAMPLE, TEST, ANALYSIS		12,000	2,000	3,000	17,000		
02 03 SITE WORK		13,000	3,000	3,000	19,000		
02 08 SOLIDS COLLECTION & CONTAINMENT		104,000	21,000	31,000	156,000		
02 21 DEMOBILIZATION		10,000	2,000	2,000	14,000		
REMEDIAL ACTION		153,000	31,000	43,000	226,000		
HANFORD: REMEDIATION		153,000	31,000	43,000	226,000		

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
02 REMEDIAL ACTION							
02 01 MOBILIZATION AND PREPATORY WORK							
02 01 01 MOB OF EQUIPMENT & PERSONNEL							
02 01 01 1 TRANSPORTATION							
02 01 01 1 01- Ph I, Equip Mob, Detailed List							
Ph I, Equip Mob, Detailed List		2,800	560	670	4,040		
02 01 01 1 02- Ph II, Equip Mob, Detailed List							
Ph II, Equip Mob, Detailed List		2,290	460	550	3,300		
TRANSPORTATION		5,100	1,020	1,220	7,340		
MOB OF EQUIPMENT & PERSONNEL		5,100	1,020	1,220	7,340		
02 01 03 SETUP/CONSTRUCT TEMP FACILITIES							
02 01 03 01 TRAILERS AND BUILDINGS							
02 01 03 01 01 Ph I, Office Trailers - setup							
Ph I, Office Trailers - setup	100.00 HR	3,790	760	910	5,460	54.55	
TRAILERS AND BUILDINGS		3,790	760	910	5,460		
02 01 03 02 DECONTAMINATION FACILITIES							
02 01 03 02 01 Personnel Decon Facilities							
Personnel Decon Facilities	120.00 HR	4,550	910	1,090	6,550	54.55	
02 01 03 02 02 Equip/Vehicle Decon Facilities							
DECONTAMINATION FACILITIES		4,550	910	1,090	6,550		
SETUP/CONSTRUCT TEMP FACILITIES		8,330	1,670	2,000	12,000		

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
MOBILIZATION AND PREPATORY WORK		13,430	2,690	3,220	19,340		
02 02 MONITOR, SAMPLE, TEST, ANALYSIS							
02 02 06 SAMPLING SOIL, SED & SOLID WASTE							
02 02 06 01 SURFACE SOIL							
02 02 06 01 01 PHASE I, Soil Sample							
02 02 06 01 01 01 Soil Sampling	11.00 EA	2,920	580	700	4,210	382.83	1
02 02 06 01 01 02 QA Report		1,990	400	480	2,870		1
PHASE I, Soil Sample	20.00 EA	4,920	980	1,180	7,080	354.12	
SURFACE SOIL		4,920	980	1,180	7,080		
SAMPLING SOIL, SED & SOLID WASTE		4,920	980	1,180	7,080		
02 02 91 QA/Safety Monitoring							
02 02 91 01 QA/Safety Monitoring							
02 02 91 01 01 Safety and Quality Assurance							
Safety and Quality Assurance	1.00 WK	6,910	1,380	1,660	9,950	9953.51	
QA/Safety Monitoring		6,910	1,380	1,660	9,950		
QA/Safety Monitoring		6,910	1,380	1,660	9,950		
MONITOR, SAMPLE, TEST, ANALYSIS		11,830	2,370	2,840	17,040		
02 03 SITE WORK							
02 03 05 FENCING							
02 03 05 01 FENCING							
02 03 05 01 01 Temporary Fencing							
02 03 05 01 01 01 Temporary Fencing - 6' Security	400.00 LF	13,290	2,660	3,190	19,140	47.85	
Temporary Fencing	400.00 LF	13,290	2,660	3,190	19,140	47.85	
FENCING		13,290	2,660	3,190	19,140		

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
FENCING		13,290	2,660	3,190	19,140		
SITE WORK		13,290	2,660	3,190	19,140		
02 08 SOLIDS COLLECTION & CONTAINMENT							
02 08 01 EXCAVATION							
02 08 01 03 CONTAMINATED SOIL							
02 08 01 03 01 PHASE I, Excavate/Load PCB Soils							
02 08 01 03 01 01 Excavate/Load PCB Soils	31.00 CY	240	50	110	400	12.88	2
02 08 01 03 01 02 Transport PCB Soils - TEXAS	31.00 CY	102,540	20,510	30,760	153,810	4961.57	2,3
02 08 01 03 01 03 PPEquip, Modified Class D	1.00 DAY	1,020	200	310	1,530	1534.61	1
PHASE I, Excavate/Load PCB Soils	350.00 CY	103,800	20,760	31,180	155,740	444.98	
02 08 01 03 03 Post Removal - Site Re-grade							
02 08 01 03 03 01 Site Re-grade		460	90	140	690		1
Post Removal - Site Re-grade		460	90	140	690		
CONTAMINATED SOIL		104,260	20,850	31,320	156,440		
EXCAVATION		104,260	20,850	31,320	156,440		
SOLIDS COLLECTION & CONTAINMENT		104,260	20,850	31,320	156,440		
02 21 DEMOBILIZATION							
02 21 04 DEMOB OF EQUIPMENT & PERSONNEL							
02 21 04 01 TRANSPORTATION							
02 21 04 01 01 PH I, Demob of equipment							
PH I, Demob of equipment		10,070	2,010	2,420	14,500		
TRANSPORTATION		10,070	2,010	2,420	14,500		
DEMOB OF EQUIPMENT & PERSONNEL		10,070	2,010	2,420	14,500		
DEMOBILIZATION		10,070	2,010	2,420	14,500		

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT POFFIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE INCIN, PCB > 50 PPM
** PROJECT OWNER SUMMARY - LEVEL 6 (Rounded to 10's) **

TIME 14:54:38

	QUANTITY UOM	CONTRACT	S & A	CONTG	TOTAL COST	UNIT COST	NOTES
REMEDIAL ACTION		152,890	30,580	42,990	226,450		
HANFORD: REMEDIATION		152,890	30,580	42,990	226,450		

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT POFFIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE INCIN, PCB > 50 PPM
** PROJECT INDIRECT SUMMARY - LEVEL 2 (Rounded to 10's) **

TIME 14:54:38
SUMMARY PAGE 6

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 REMEDIAL ACTION									
02 01 MOBILIZATION AND PREPATORY WORK		10,110	1,520	580	980	120	130	13,430	
02 02 MONITOR, SAMPLE, TEST, ANALYSIS		8,900	1,340	510	860	110	120	11,830	
02 03 SITE WORK		10,000	1,500	580	970	120	130	13,290	
02 08 SOLIDS COLLECTION & CONTAINMENT		78,440	11,770	4,510	7,580	940	1,030	104,260	
02 21 DEMOBILIZATION		7,580	1,140	440	730	90	100	10,070	
REMEDIAL ACTION		115,020	17,250	6,610	11,110	1,380	1,510	152,890	
HANFORD: REMEDIATION		115,020	17,250	6,610	11,110	1,380	1,510	152,890	
S & A								30,580	
SUBTOTAL								183,460	
CONTINGENCY								42,990	
TOTAL INCL OWNER COSTS								226,450	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
02 REMEDIAL ACTION									
02 01 MOBILIZATION AND PREPATORY WORK									
02 01 01 MOB OF EQUIPMENT & PERSONNEL									
02 01 01 1 TRANSPORTATION									
02 01 01 1 01- Ph I, Equip Mob, Detailed List									
Ph I, Equip Mob, Detailed List		2,110	320	120	200	30	30	2,800	
02 01 01 1 02- Ph II, Equip Mob, Detailed List									
Ph II, Equip Mob, Detailed List		1,730	260	100	170	20	20	2,290	
TRANSPORTATION		3,840	580	220	370	50	50	5,100	
MOB OF EQUIPMENT & PERSONNEL		3,840	580	220	370	50	50	5,100	
02 01 03 SETUP/CONSTRUCT TEMP FACILITIES									
02 01 03 01 TRAILERS AND BUILDINGS									
02 01 03 01 01 Ph I, Office Trailers - setup									
Ph I, Office Trailers - setup	100.00 HR	2,850	430	160	280	30	40	3,790	37.88
TRAILERS AND BUILDINGS		2,850	430	160	280	30	40	3,790	
02 01 03 02 DECONTAMINATION FACILITIES									
02 01 03 02 01 Personnel Decon Facilities									
Personnel Decon Facilities	120.00 HR	3,420	510	200	330	40	50	4,550	37.88
02 01 03 02 02 Equip/Vehicle Decon Facilities									
DECONTAMINATION FACILITIES		3,420	510	200	330	40	50	4,550	
SETUP/CONSTRUCT TEMP FACILITIES		6,270	940	360	610	80	80	8,330	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
MOBILIZATION AND PREPATORY WORK		10,110	1,520	580	980	120	130	13,430	
02 02 MONITOR, SAMPLE, TEST, ANALYSIS									
02 02 06 SAMPLING SOIL, SED & SOLID WASTE									
02 02 06 01 SURFACE SOIL									
02 02 06 01 01 PHASE I, Soil Sample									
02 02 06 01 01 01 Soil Sampling	11.00 EA	2,200	330	130	210	30	30	2,920	265.85
02 02 06 01 01 02 QA Report		1,500	230	90	140	20	20	1,990	
PHASE I, Soil Sample	20.00 EA	3,700	560	210	360	40	50	4,920	245.91
SURFACE SOIL		3,700	560	210	360	40	50	4,920	
SAMPLING SOIL, SED & SOLID WASTE		3,700	560	210	360	40	50	4,920	
02 02 91 QA/Safety Monitoring									
02 02 91 01 QA/Safety Monitoring									
02 02 91 01 01 Safety and Quality Assurance									
Safety and Quality Assurance	1.00 WK	5,200	780	300	500	60	70	6,910	6912.16
QA/Safety Monitoring		5,200	780	300	500	60	70	6,910	
QA/Safety Monitoring		5,200	780	300	500	60	70	6,910	
MONITOR, SAMPLE, TEST, ANALYSIS		8,900	1,340	510	860	110	120	11,830	
02 03 SITE WORK									
02 03 05 FENCING									
02 03 05 01 FENCING									
02 03 05 01 01 Temporary Fencing									
02 03 05 01 01 01 Temporary Fencing - 6' Security	400.00 LF	10,000	1,500	580	970	120	130	13,290	33.23
Temporary Fencing	400.00 LF	10,000	1,500	580	970	120	130	13,290	33.23
FENCING		10,000	1,500	580	970	120	130	13,290	

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
FENCING		10,000	1,500	580	970	120	130	13,290	
SITE WORK		10,000	1,500	580	970	120	130	13,290	
02 08 SOLIDS COLLECTION & CONTAINMENT									
02 08 01 EXCAVATION									
02 08 01 03 CONTAMINATED SOIL									
02 08 01 03 01 PHASE I, Excavate/Load PCB Soils									
02 08 01 03 01 01 Excavate/Load PCB Soils	31.00 CY	180	30	10	20	0	0	240	7.67
02 08 01 03 01 02 Transport PCB Soils - TEXAS	31.00 CY	77,140	11,570	4,440	7,450	930	1,020	102,540	3307.72
02 08 01 03 01 03 PPEquip, Modified Class D	1.00 DAY	770	120	40	70	10	10	1,020	1023.08
PHASE I, Excavate/Load PCB Soils	350.00 CY	78,090	11,710	4,490	7,540	940	1,030	103,800	296.57
02 08 01 03 03 Post Removal - Site Re-grade									
02 08 01 03 03 01 Site Re-grade		350	50	20	30	0	0	460	
Post Removal - Site Re-grade		350	50	20	30	0	0	460	
CONTAMINATED SOIL		78,440	11,770	4,510	7,580	940	1,030	104,260	
EXCAVATION		78,440	11,770	4,510	7,580	940	1,030	104,260	
SOLIDS COLLECTION & CONTAINMENT		78,440	11,770	4,510	7,580	940	1,030	104,260	
02 21 DEMOBILIZATION									
02 21 04 DEMOB OF EQUIPMENT & PERSONNEL									
02 21 04 01 TRANSPORTATION									
02 21 04 01 01 PH I, Demob of equipment									
PH I, Demob of equipment		7,580	1,140	440	730	90	100	10,070	
TRANSPORTATION		7,580	1,140	440	730	90	100	10,070	
DEMOB OF EQUIPMENT & PERSONNEL		7,580	1,140	440	730	90	100	10,070	
DEMOBILIZATION		7,580	1,140	440	730	90	100	10,070	

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT POFFIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE INCIN, PCB > 50 PPM
** PROJECT INDIRECT SUMMARY - LEVEL 6 (Rounded to 10's) **

TIME 14:54:38

	QUANTITY UOM	DIRECT	FOOH	HOOH	PROF	BOND	B&O TAX	TOTAL COST	UNIT COST
REMEDIAL ACTION		115,020	17,250	6,610	11,110	1,380	1,510	152,890	
HANFORD: REMEDIATION		115,020	17,250	6,610	11,110	1,380	1,510	152,890	
S & A								30,580	
SUBTOTAL								183,460	
CONTINGENCY								42,990	
TOTAL INCL OWNER COSTS								226,450	

0 AA. REMEDIAL GENERAL CONTRACTOR	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

02. REMEDIAL ACTION
02 01. MOBILIZATION AND PREPATORY WORK
02 01 01. MOB OF EQUIPMENT & PERSONNEL

02 01 01 1. TRANSPORTATION

02 01 01 1 01-. Ph I, Equip Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed.

USR AA <01505 3235 >	Mob, FEnd Ldr, wheel 1-1/2-3 cy Atriculated Fr, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	750.00 750	0.00 0	0.00 0	750.00 750	750.00
USR AA <01505 6115 >	Mob, Dozer, Crawler, 50-100 hp w/blade, incl set up 100 mi radius	1.00 EA	0.00	0.00 0	0.00 0	750.00 750	0.00 0	0.00 0	750.00 750	750.00
USR AA <01505 7131 >	Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	150.00 150	0.00 0	0.00 0	150.00 150	150.00
USR AA <01505 8921 >	Mob, Decontamination Trailer w/25,000 GVW Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	135.00 135	0.00 0	0.00 0	135.00 135	135.00
USR AA <01505 1101 >	Mob - Field Office Trailer	1.00 EA	0.00	0.00 0	0.00 0	250.00 250	0.00 0	0.00 0	250.00 250	250.00
USR AA <01505 8952 >	Mob, Hot Water Blstr, 3,200 psi 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	75.00 75	0.00 0	0.00 0	75.00 75	75.00
	Ph I, Equip Mob, Detailed List			0	0	2,110	0	0	2,110	

02 01. MOBILIZATION AND PREPATORY WORK	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 01 01 1 02-. Ph II, Equip Mob, Detailed List This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed. The trailers are not re-mob'd, as it is assumed they are left in place for duration of work.									
USR AA <01505 3235 > Mob, FEnd Ldr, wheel 1-1/2-3 cy Atriculated Fr, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	750.00 750	0.00 0	0.00 0	750.00 750	750.00
USR AA <01505 6115 > Mob, Dozer, Crawler, 50-100 hp w/blade, incl set up 100 mi radius	1.00 EA	0.00	0.00 0	0.00 0	750.00 750	0.00 0	0.00 0	750.00 750	750.00
USR AA <01505 7131 > Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	150.00 150	0.00 0	0.00 0	150.00 150	150.00
USR AA <01505 8952 > Mob, Hot Water Blstr, 3,200 psi 100-mi Radius	1.00 EA	0.00	0.00 0	0.00 0	75.00 75	0.00 0	0.00 0	75.00 75	75.00
Ph II, Equip Mob, Detailed List			0	0	1,725	0	0	1,725	
TRANSPORTATION			0	0	3,835	0	0	3,835	
MOB OF EQUIPMENT & PERSONNEL			0	0	3,835	0	0	3,835	

02 01. MOBILIZATION AND PREPATORY WORK	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 01 03. SETUP/CONSTRUCT TEMP FACILITIES									
02 01 03 01. TRAILERS AND BUILDINGS									
02 01 03 01 01. Ph I, Office Trailers - setup Allow 100 mhrs for setup of contractor's trailer and equipment and site layout. An allowance for some equipment and material has been added.									
Ph I, Office Trailers - setup	100.00 HR		0	2,500	250	100	0	2,850	28.50
TRAILERS AND BUILDINGS			0	2,500	250	100	0	2,850	
02 01 03 02. DECONTAMINATION FACILITIES									
02 01 03 02 01. Personnel Decon Facilities Allow 120 mhrs for setup of the Personnel Decon Facilities, including equipment and site layout. An allowance for material & equip. is included.									
Personnel Decon Facilities	120.00 HR		0	3,000	300	120	0	3,420	28.50
02 01 03 02 02. Equip/Vehicle Decon Facilities A equipment/vehicle washdown facility has been costed in the Asbestos Cap estimate, and it will be used for all waste site decon. Decon water will be transported by a WHC truck to an on-site disposal area.									
Equip/Vehicle Decon Facilities			0	0	0	0	0	0	
DECONTAMINATION FACILITIES			0	3,000	300	120	0	3,420	
SETUP/CONSTRUCT TEMP FACILITIES			0	5,500	550	220	0	6,270	

02 02. MONITOR, SAMPLE, TEST, ANALYSIS	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 02. MONITOR, SAMPLE, TEST, ANALYSIS									
02 02 06. SAMPLING SOIL, SED & SOLID WASTE									
02 02 06 01. SURFACE SOIL									
02 02 06 01 01. PHASE I, Soil Sample After the top 3 Ft of soil is removed, soil samples will be taken.									
02 02 06 01 01 01. Soil Sampling Sample on 15'x15' grid (9 samples) with analysis at off site lab for PCB only, with 7-day turnaround. Method 8080. Add 2 QA samples. Costs for analysis from the Corps North Pacific Division (CENPD) Laboratory.									
Soil Sampling	11.00 EA		0	0	0	0	2,200	2,200	200.00
02 02 06 01 01 02. QA Report Cost for QA Report from CENPD Laboratory.									
QA Report			0	0	0	0	1,500	1,500	
PHASE I, Soil Sample	20.00 EA		0	0	0	0	3,700	3,700	185.00
SURFACE SOIL			0	0	0	0	3,700	3,700	
SAMPLING SOIL, SED & SOLID WASTE			0	0	0	0	3,700	3,700	

02 02. MONITOR, SAMPLE, TEST, ANALYSIS	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 02 91. QA/Safety Monitoring											
02 02 91 01. QA/Safety Monitoring											
02 02 91 01 01. Safety and Quality Assurance											
Safety/QA crew:											
WHC HPT: $50/hr x 40hrs = $2,000											
COE Safety: $70/hr x 40hrs = $2,800											
COE Special Assist. QA: $50/hr x 8 hrs = $ 400											
Total cost/week $5,200											
The duration of this project is estimated at 1 week.											
Safety and Quality Assurance	1.00	WK			0	5,200	0	0	0	5,200	5200.00
QA/Safety Monitoring					0	5,200	0	0	0	5,200	
QA/Safety Monitoring					0	5,200	0	0	0	5,200	

02 03. SITE WORK	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 03. SITE WORK											
02 03 05. FENCING											
02 03 05 01. FENCING											
02 03 05 01 01. Temporary Fencing											
02 03 05 01 01 01. Temporary Fencing - 6' Security A 6' Security fence will be required during the duration of the cleanup activities around the work site. Cost taken from recent bid quotes. "Other" cost for removal.											
Temporary Fencing - 6' Security	400.00	LF			0	2,000	1,000	5,000	2,000	10,000	25.00
Temporary Fencing	400.00	LF			0	2,000	1,000	5,000	2,000	10,000	25.00
FENCING					0	2,000	1,000	5,000	2,000	10,000	
FENCING					0	2,000	1,000	5,000	2,000	10,000	

02 08. SOLIDS COLLECTION & CONTAINMENT	QUANTY UOM CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 08. SOLIDS COLLECTION & CONTAINMENT									
02 08 01. EXCAVATION									
02 08 01 03. CONTAMINATED SOIL									
02 08 01 03 01. PHASE 1, Excavate/Load PCB Soils									
02 08 01 03 01 01. Excavate/Load PCB Soils									
USR AA <02220 0000 > Excavate top 36-inches of soil			0.06	1.59	0.55	0.00	0.00	2.14	
	35.00 LCY XXQNA	28.75	2	56	19	0	0	75	2.14
USR AA <02220 0000 > Load excavated/stockpiled soil load in 20-ton ROLL OFF units for use on trucks that are DOT approved for hazardeous waste hauler. Assume 3,100lb/bcy			0.03	0.94	2.03	0.00	0.00	2.97	
	35.00 LCY XXQMG	28.75	1	33	71	0	0	104	2.97
Excavate/Load PCB Soils	31.00 CY		3	89	90	0	0	179	5.77
02 08 01 03 01 02. Transport PCB Soils - TEXAS Unit costs for transport and disposal from Waste Management, Inc., Arlington, OR.									
USR AA <02220 0000 > Transport soil to Port Arthur TX 35 lcy x 3,100 lb/cy / 2000 lb/ton = 54.25 tons, @ 20 tons/truck = 3 trucks.			0.00	0.00	0.00	0.00	7000.00	7000.00	
	3.00 TRK	0.00	0	0	0	0	21,000	21,000	7000.00
USR AA <02220 0000 > Incinerator processing fee			0.00	0.00	0.00	0.00	0.50	0.50	
	108500 LB	0.00	0	0	0	0	54,250	54,250	0.50
USR AA <02220 0000 > Texas state environmental tax			0.00	0.00	0.00	0.00	20.00	20.00	
	54.50 TON	0.00	0	0	0	0	1,090	1,090	20.00
USR AA <02220 0000 > Soil profile fee			0.00	0.00	0.00	0.00	800.00	800.00	
	1.00 EA	0.00	0	0	0	0	800	800	800.00
Transport PCB Soils - TEXAS	31.00 CY		0	0	0	0	77,140	77,140	2488.39
02 08 01 03 01 03. PPEquip, Modified Class D									
M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr)			0.00	0.00	11.50	0.00	0.00	11.50	
	4.00 EA N/A	0.00	0	0	46	0	0	46	11.50
M HTW AA <01951 5204 > Coveralls, Tyvek			0.00	0.00	0.00	7.55	0.00	7.55	
	4.00 EA N/A	0.00	0	0	0	30	0	30	7.55

N-807

DOE/RL-92-67

02 08. SOLIDS COLLECTION & CONTAINMENT	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves					0.00	0.00	2.30	0.00	0.00	2.30	
	4.00	PR	N/A	0.00	0	0	9	0	0	9	2.30
HTW AA <01951 5726 > Half-Mask Air Purifying Respirators					0.00	0.00	0.00	19.94	0.00	19.94	
	4.00	EA	N/A	0.00	0	0	0	80	0	80	19.94
USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost)					10.00	234.30	1.45	34.83	0.00	270.58	
	1.00	DAY	ULABA	0.13	10	234	1	35	0	271	270.58
M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental)					0.00	0.00	0.00	26.95	0.00	26.95	
	1.00	DAY	N/A	0.00	0	0	0	27	0	27	26.95
HTW AA <01951 5723 > Cartridges, Respirator					0.00	0.00	0.00	25.87	0.00	25.87	
	8.00	EA	N/A	0.00	0	0	0	207	0	207	25.87
USR AA <01951 5805 > Disposal Allowance Allow $100/day for disposal of personnel protection items and equipment/vehicle decon water.					0.00	0.00	0.00	0.00	100.00	100.00	
	1.00	DAY	N/A	0.00	0	0	0	0	100	100	100.00
PPEquip, Modified Class D	1.00	DAY			10	234	57	379	100	770	769.66
PHASE I, Excavate/Load PCB Soils	350.00	CY			13	323	147	379	77,240	78,088	223.11
02 08 01 03 03. Post Removal - Site Re-grade											
02 08 01 03 03 01. Site Re-grade Allow 1/4-day for site re-grade after site clearance.											
USR AA <02220 0000 > Excavation crew					14.00	365.22	126.91	0.00	0.00	492.13	
	0.25	DAY	XXQNA	0.13	4	91	32	0	0	123	492.13
USR AA <02220 0000 > Load crew Allow $50 for 6 LCY of random fill delivered.					8.00	216.72	465.86	215.60	0.00	898.18	
	0.25	DAY	XXQMG	0.13	2	54	116	54	0	225	898.18
Site Re-grade					6	145	148	54	0	348	
Post Removal - Site Re-grade					6	145	148	54	0	348	
CONTAMINATED SOIL					19	468	295	433	77,240	78,436	
EXCAVATION					19	468	295	433	77,240	78,436	

02 21. DEMOBILIZATION	QUANTY	UOM	CREW ID	OUTPUT	MHRS	LABR	EQUIP	MAT	OTHER	TOTAL COST	UNIT COST
02 21. DEMOBILIZATION											
02 21 04. DEMOB OF EQUIPMENT & PERSONNEL											
02 21 04 01. TRANSPORTATION											
02 21 04 01 01. PH I, Demob of equipment Allow 75% of Phase I & II equipment mobilization and site setup.											
PH I, Demob of equipment					0	0	7,575	0	0	7,575	
TRANSPORTATION					0	0	7,575	0	0	7,575	
DEMOB OF EQUIPMENT & PERSONNEL					0	0	7,575	0	0	7,575	
HANFORD: REMEDIATION					19	13,168	13,255	5,653	82,940	115,016	

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Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT POFFIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE INCIN, PCB > 50 PPM
** CREW BACKUP **

TIME 14:58:37

BACKUP PAGE 1

SRC	ITEM ID	DESCRIPTION	NO.	UOM	RATE	**** LABOR **** HOURS	COST	**** EQUIP **** HOURS	COST	TOTAL COST
	ULABA	1 B-laborer + Small Tools			PROD =	100%			CREW HOURS =	8
MIL	B-LABORER F	Laborer (Semi-Skilled)	0.25	HR	23.83	0.25	5.96			5.96
MIL	B-LABORER L	Laborer (Semi-Skilled)	1.00	HR	23.33	1.00	23.33			23.33
MIL	XMIXX020 E	Small Tools	0.13	HR	1.39			0.13	0.18	0.18
	TOTAL					1.25	29.29	0.13	0.18	29.47
	XXQMG	1 X-eqoprmed + 1 Front End Ldr, 5-1/4 Cy, Wheel			PROD =	100%			CREW HOURS =	3
MIL	L40CA007 E	LDR,FE,WH, 5-1/4 CY ARTIC,980-C	1.00	HR	58.23			1.00	58.23	58.23
MIL	X-EQOPRMEDL	Outside Equip. Op. Medium	1.00	HR	27.09	1.00	27.09			27.09
	TOTAL					1.00	27.09	1.00	58.23	85.32
	XXQNA	1 X-eqoprmed + 1 Dozer, Cat D-3C, 65 Hp			PROD =	100%			CREW HOURS =	3
MIL	T10CA001 E	BLADE,POWER ANGLE TILT,FOR D3	1.00	HR	1.92			1.00	1.92	1.92
MIL	T15CA003 E	DOZER,CWLR,D-3C,PS,(ADD BLADE)	1.00	HR	13.94			1.00	13.94	13.94
MIL	X-LABORER L	Outside Laborer	0.50	HR	23.33	0.50	11.67			11.67
MIL	X-EQOPRMEDL	Outside Equip. Op. Medium	1.00	HR	27.09	1.00	27.09			27.09
MIL	X-EQOPRMEDF	Outside Equip. Op. Medium	0.25	HR	27.59	0.25	6.90			6.90
	TOTAL					1.75	45.65	2.00	15.86	61.52

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT POFFIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE INCIN, PCB > 50 PPM
** LABOR BACKUP **

TIME 14:58:37

BACKUP PAGE 2

SRC LABOR ID	DESCRIPTION	BASE	OVERTM	TXS/INS	FRNG	TRVL	RATE	UOM	UPDATE	**** TOTAL **** DEFAULT	HOURS
MIL B-LABORER	Laborer/Helper	23.33	0.0%	0.0%	0.00	0.00	23.33	HR	10/15/92	22.36	10
MIL X-EQOPRMED	Outside Equipment Oper. Medium	27.09	0.0%	0.0%	0.00	0.00	27.09	HR	10/15/92	25.84	7
MIL X-LABORER	Outside Laborer	23.33	0.0%	0.0%	0.00	0.00	23.33	HR	10/15/92	22.36	2

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT POFFIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE INCIN, PCB > 50 PPM
** EQUIPMENT BACKUP **

TIME 14:58:37

SRC	EQUIP ID	DESCRIPTION	DEPR	CAPT	FUEL	FOG	EQ REP	TR WR	TR REP	TOTAL	UOM	TOTAL HOURS
MIL	L40CA007	LDR,FE,WH, 5-1/4 CY ARTIC,980-C	17.46	7.15	7.97	2.3	15.74	6.54	0.98	58.23	HR	3
MIL	T10CA001	BLADE,POWER ANGLE TILT,FOR D3	0.75	0.27		0.0	0.82			1.92	HR	3
MIL	T15CA003	DOZER,CWLR,D-3C,PS,(ADD BLADE)	3.51	1.39	2.14	0.7	6.14			13.94	HR	3
MIL	XMIXX020	Small Tools	0.46	0.17	0.13	0.0	0.57			1.39	HR	1

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Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT POFFIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE INCIN, PCB > 50 PPM

TIME 14:54:38

SETTINGS PAGE 1

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/01/93

PROJECT DIRECT COST COLUMNS

Col Type	H	L	E	M	U
Rep Width	8	10	10	12	10
Title	MHRS	LABR	EQUIP	MAT	OTHER

PROJECT INDIRECT COST COLUMNS

Col Type	O	U	P	B	U
Rep Width	9	9	9	9	9
Title	FOOH	HOOH	PROF	BOND	B&O TAX

PROJECT OWNER COST COLUMNS

Col Type	U	U	X	X	X
Rep Width	12	12	0	0	0
Title	S & A	CONTG	(Unused)	(Unused)	(Unused)

PROJECT BREAKDOWN

PROJECT ID	Length	Trail Sep	Level Title	2nd View Order
Level 1 ID :	2		Des/Actn	0
Level 2 ID :	2		Feature	0
Level 3 ID :	2		SubFeat	0
Level 4 ID :	2		System	0
Level 5 ID :	4		Bid Item	0
Level 6 ID :	4	-	Task	0

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

Col Type	X	X	X	X	X
Rep Width	0	0	0	0	0
Title	(Unused)	(Unused)	(Unused)	(Unused)	(Unused)
Shadow	X	X	X	X	X

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 3
Table of Contents Levels : 5

		0	1	2	3	4	5	6	7
ROW OPTIONS	Print Titles at Levels :		Y	Y	Y	Y	Y	Y	
	Print Totals at Levels :		N	N	Y	Y	Y	Y	
	Print Notes at Levels :	Y	Y	Y	Y	Y	Y	Y	Y
	Print Unit Cost Row :	Y							
	Print Page Footer :	N							
	Show Cost Codes :	Y							
COLUMNS OPTIONS	Print Crew Id :	Y							
	Crew Output :	Y							
	Unit Cost :	Y							
UPB TITLES	No. of Levels to Print :	0							
	Bracket Titles With :	- :							
	Include titles Notes :	Y							

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y
Link Listing : N

Measurement Units : Original

	REPORT FORMAT TYPE			FOR LEVEL (S)						
	Direct	Indirect	Owner	0	1	2	3	4	5	6
Detail :	Y									
Project :	N	Y	Y	N	Y	N	N	N	Y	
Contractor :	N	N		N	N	N	N	N	N	
Division :	N	N	N	Y	N	N	N	N	N	
System :	N	N	N	Y	N	N	N	N	N	
2nd View :	N									
Crew :	Y			Y	N	N	N	N	N	
Labor :	Y									
Equipment :	Y									

** OWNER SETTINGS **

		AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
Project Information Record							
02 REMEDIAL ACTION							
	S & A	P	20.00				
	CONTINGENCY	P	0.00				
02 01 MOBILIZATION AND PREPATORY WORK							
02 01 01 MOB OF EQUIPMENT & PERSONNEL							
02 01 01 1 TRANSPORTATION							
02 01 01 1 01- Ph I, Equip Mob, Detailed List							
	S & A	O					
	CONTINGENCY	P	20.00				
02 01 01 1 02- Ph II, Equip Mob, Detailed List							
	S & A	O					
	CONTINGENCY	P	20.00				
02 01 03 SETUP/CONSTRUCT TEMP FACILITIES							
02 01 03 01 TRAILERS AND BUILDINGS							
02 01 03 01 01 Ph I, Office Trailers - setup							
	S & A	O					
	CONTINGENCY	P	20.00				
02 01 03 02 DECONTAMINATION FACILITIES							
02 01 03 02 01 Personnel Decon Facilities							
	S & A	O					
	CONTINGENCY	P	20.00				
02 01 03 02 02 Equip/Vehicle Decon Facilities							
	S & A	O					
	CONTINGENCY	P	20.00				
02 02 MONITOR, SAMPLE, TEST, ANALYSIS							
02 02 06 SAMPLING SOIL, SED & SOLID WASTE							
02 02 06 01 SURFACE SOIL							
02 02 06 01 01 PHASE I, Soil Sample							
02 02 06 01 01 01 Soil Sampling							
	S & A	O					
	CONTINGENCY	P	20.00				
02 02 06 01 01 02 QA Report							
	S & A	O					
	CONTINGENCY	P	20.00				
	Monitoring						
	Monitoring						
	Assurance						
		O					
		P	20.00				

** OWNER SETTINGS **

		AMOUNT	PERCENT	*ESCALATN DATE* BEGIN	END	*ESCALATN INDEX* BEGIN	END
02 03 SITE WORK							
02 03 05 FENCING							
02 03 05 01 FENCING							
02 03 05 01 01 Temporary Fencing							
02 03 05 01 01 01 Temporary Fencing - 6' Security							
S & A	O						
CONTINGENCY	P		20.00				
02 08 SOLIDS COLLECTION & CONTAINMENT							
02 08 01 EXCAVATION							
02 08 01 03 CONTAMINATED SOIL							
02 08 01 03 01 PHASE I, Excavate/Load PCB Soils							
02 08 01 03 01 01 Excavate/Load PCB Soils							
S & A	O						
CONTINGENCY	P		40.00				
02 08 01 03 01 02 Transport PCB Soils - TEXAS							
S & A	O						
CONTINGENCY	P		25.00				
02 08 01 03 01 03 PPEquip, Modified Class D							
S & A	O						
CONTINGENCY	P		25.00				
02 08 01 03 03 Post Removal - Site Re-grade							
02 08 01 03 03 01 Site Re-grade							
S & A	O						
CONTINGENCY	P		25.00				
02 21 DEMOBILIZATION							
02 21 04 DEMOB OF EQUIPMENT & PERSONNEL							
02 21 04 01 TRANSPORTATION							
02 21 04 01 01 PH 1, Demob of equipment							
S & A	O						
CONTINGENCY	P		20.00				

Tue 09 Mar 1993

U.S. Army Corps of Engineers
PROJECT POFFIR: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, H.R.L., OFF-SITE INCIN, PCB > 50 PPM

TIME 14:54:38

SETTINGS PAGE 6

** CONTRACTOR SETTINGS **

		AMOUNT	PCT	PCT S	RISK	DIFF	SIZE	PERIOD	INVEST	ASSIST	SUBCON
AA REMEDIAL GENERAL CONTRACTOR											
JOB OFFICE OVERHEAD	P		15.00								
HOME OFFICE OVERHEAD	P		5.00								
PROFIT	P		8.00								
PERFORMANCE BOND	C			(Class: B)							
B & O AND OTHER TAXES	P		1.00								