This document was too large to scan as a single document. It has been divided into smaller sections.

SECTION 4

Document Information			
Document #	DOE/RL-2003-64	Revision	DRAFT A REISSUE
Title	FEASIBILITY STUDY FOR THE 200-TW-1 SCAVENGED WASTE GROUP & THE 200-TW-2 TANK WASTE GROUP & THE 200-PW-5 FISSION-PRODUCT RICH WASTE GROUP OU		
Date	03/25/2004		
Originator	ME TODD-ROBERTSON	Originator Co.	DOE-RL
Recipient		Recipient Co.	
References			
Keywords			
Projects			
Other Information			

Table D-30. (Alternative 2), 216-B-58 Trench Representative Site, Periodic Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost Annually	Item Cost per 5 Years	Item Cost per 30 Years	Notes
Site inspection	$1,792			Cost is based on 16 hours @ $112/hr for every 50,000 ft^2. Site = 2,000 ft^2
Radiation survey of surface soil	$1,000			Cost is based on $1,000 for every 5,000 ft^2. Site = 2,000 ft^2.
Existing cover maintenance	$4,549			Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to Tabel D-32.
Vadose zone monitoring		$3,750	$7,130	Monitoring occurs once every 5 years at a cost of $75/lf of borehole. Borehole replacement occurs once every 30 years. Refer to Table D-32.
Reporting	$10,000			Obtain lab, prepare sampling plan, document sampling event and results.
Site reviews		$20,000		Prepare site condition report.

TOTAL	**$17,341**	**$23,750**	**$7,130**

Table D-31. (Alternative 2), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages)

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$15,456		$15,456	1.0000	$15,456
1		$17,341	$17,341	0.9690	$16,804
2		$17,341	$17,341	0.9389	$16,282
3		$17,341	$17,341	0.9098	$15,777
4		$17,341	$17,341	0.8816	$15,288
5		$41,091	$41,091	0.8543	$35,104
6		$17,341	$17,341	0.8278	$14,355
7		$17,341	$17,341	0.8021	$13,909
8		$17,341	$17,341	0.7773	$13,479
9		$17,341	$17,341	0.7532	$13,061
10		$41,091	$41,091	0.7298	$29,988
11		$17,341	$17,341	0.7072	$12,264
12		$17,341	$17,341	0.6852	$11,882
13		$17,341	$17,341	0.6640	$11,515
14		$17,341	$17,341	0.6434	$11,157
15		$41,091	$41,091	0.6235	$25,620
16		$17,341	$17,341	0.6041	$10,476
17		$17,341	$17,341	0.5854	$10,152
18		$17,341	$17,341	0.5672	$9,836
19		$17,341	$17,341	0.5496	$9,531
20		$41,091	$41,091	0.5326	$21,885
21		$17,341	$17,341	0.5161	$8,950
22		$17,341	$17,341	0.5001	$8,672
23		$17,341	$17,341	0.4846	$8,404
24		$17,341	$17,341	0.4696	$8,143
25		$41,091	$41,091	0.4550	$18,697
26		$17,341	$17,341	0.4409	$7,646
27		$17,341	$17,341	0.4272	$7,408
28		$17,341	$17,341	0.4140	$7,179
29		$17,341	$17,341	0.4011	$6,956
30		$48,221	$48,221	0.3887	$18,743
31		$17,341	$17,341	0.3766	$6,531
32		$17,341	$17,341	0.3650	$6,330
33		$17,341	$17,341	0.3536	$6,132
34		$17,341	$17,341	0.3427	$5,943
35		$41,091	$41,091	0.3321	$13,646
36		$17,341	$17,341	0.3218	$5,580
37		$17,341	$17,341	0.3118	$5,407
38		$17,341	$17,341	0.3021	$5,239
39		$17,341	$17,341	0.2927	$5,076

Table D-31. (Alternative 2), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages)

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%[1]	Present Worth
40		$41,091	$41,091	0.2837	$11,658
41		$17,341	$17,341	0.2749	$4,767
42		$17,341	$17,341	0.2664	$4,620
43		$17,341	$17,341	0.2581	$4,476
44		$17,341	$17,341	0.2501	$4,337
45		$41,091	$41,091	0.2423	$9,956
46		$17,341	$17,341	0.2348	$4,072
47		$17,341	$17,341	0.2275	$3,945
48		$17,341	$17,341	0.2205	$3,824
49		$17,341	$17,341	0.2136	$3,704
50		$41,091	$41,091	0.2070	$8,506
51		$17,341	$17,341	0.2006	$3,479
52		$17,341	$17,341	0.1944	$3,371
53		$17,341	$17,341	0.1884	$3,267
54		$17,341	$17,341	0.1825	$3,165
55		$41,091	$41,091	0.1769	$7,269
56		$17,341	$17,341	0.1714	$2,972
57		$17,341	$17,341	0.1661	$2,880
58		$17,341	$17,341	0.1609	$2,790
59		$17,341	$17,341	0.1559	$2,704
60		$48,221	$48,221	0.1511	$7,286
61		$17,341	$17,341	0.1464	$2,539
62		$17,341	$17,341	0.1419	$2,461
63		$17,341	$17,341	0.1375	$2,384
64		$17,341	$17,341	0.1332	$2,310
65		$41,091	$41,091	0.1291	$5,305
66		$17,341	$17,341	0.1251	$2,169
67		$17,341	$17,341	0.1212	$2,102
68		$17,341	$17,341	0.1174	$2,036
69		$17,341	$17,341	0.1138	$1,973
70		$41,091	$41,091	0.1103	$4,532
71		$17,341	$17,341	0.1068	$1,852
72		$17,341	$17,341	0.1035	$1,795
73		$17,341	$17,341	0.1003	$1,739
74		$17,341	$17,341	0.0972	$1,686
75		$41,091	$41,091	0.0942	$3,871
76		$17,341	$17,341	0.0913	$1,583
77		$17,341	$17,341	0.0884	$1,533
78		$17,341	$17,341	0.0857	$1,486
79		$17,341	$17,341	0.0830	$1,439
80		$41,091	$41,091	0.0805	$3,308

Table D-31. (Alternative 2), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages)

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%[1]	Present Worth
81		$17,341	$17,341	0.0780	$1,353
82		$17,341	$17,341	0.0756	$1,311
83		$17,341	$17,341	0.0732	$1,269
84		$17,341	$17,341	0.0709	$1,229
85		$41,091	$41,091	0.0687	$2,823
86		$17,341	$17,341	0.0666	$1,155
87		$17,341	$17,341	0.0645	$1,119
88		$17,341	$17,341	0.0625	$1,084
89		$17,341	$17,341	0.0606	$1,051
90		$48,221	$48,221	0.0587	$2,831
91		$17,341	$17,341	0.0569	$987
92		$17,341	$17,341	0.0551	$956
93		$17,341	$17,341	0.0534	$926
94		$17,341	$17,341	0.0518	$898
95		$41,091	$41,091	0.0502	$2,063
96		$17,341	$17,341	0.0486	$843
97		$17,341	$17,341	0.0471	$817
98		$17,341	$17,341	0.0456	$791
99		$17,341	$17,341	0.0442	$766
100		$41,091	$41,091	0.0429	$1,763
101		$17,341	$17,341	0.0415	$720
102		$17,341	$17,341	0.0402	$697
103		$17,341	$17,341	0.0390	$676
104		$17,341	$17,341	0.0378	$656
105		$41,091	$41,091	0.0366	$1,504
106		$17,341	$17,341	0.0355	$616
107		$17,341	$17,341	0.0344	$597
108		$17,341	$17,341	0.0333	$577
109		$17,341	$17,341	0.0323	$560
110		$41,091	$41,091	0.0313	$1,286
111		$17,341	$17,341	0.0303	$525
112		$17,341	$17,341	0.0294	$510
113		$17,341	$17,341	0.0285	$494
114		$17,341	$17,341	0.0276	$479
115		$41,091	$41,091	0.0267	$1,097
116		$17,341	$17,341	0.0259	$449
117		$17,341	$17,341	0.0251	$435
118		$17,341	$17,341	0.0243	$421
119		$17,341	$17,341	0.0236	$409
120		$48,221	$48,221	0.0228	$1,099
121		$17,341	$17,341	0.0221	$383

Table D-31. (Alternative 2), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages)

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%[1]	Present Worth
122		$17,341	$17,341	0.0214	$371
123		$17,341	$17,341	0.0208	$361
124		$17,341	$17,341	0.0201	$349
125		$41,091	$41,091	0.0195	$801
126		$17,341	$17,341	0.0189	$328
127		$17,341	$17,341	0.0183	$317
128		$17,341	$17,341	0.0177	$307
129		$17,341	$17,341	0.0172	$298
130		$41,091	$41,091	0.0167	$686
131		$17,341	$17,341	0.0161	$279
132		$17,341	$17,341	0.0156	$271
133		$17,341	$17,341	0.0152	$264
134		$17,341	$17,341	0.0147	$255
135		$41,091	$41,091	0.0142	$583
136		$17,341	$17,341	0.0138	$239
137		$17,341	$17,341	0.0134	$232
138		$17,341	$17,341	0.0129	$224
139		$17,341	$17,341	0.0125	$217
140		$41,091	$41,091	0.0122	$501
141		$17,341	$17,341	0.0118	$205
142		$17,341	$17,341	0.0114	$198
143		$17,341	$17,341	0.0111	$192
144		$17,341	$17,341	0.0107	$186
145		$41,091	$41,091	0.0104	$427
146		$17,341	$17,341	0.0101	$175
147		$17,341	$17,341	0.0098	$170
148		$17,341	$17,341	0.0094	$163
149		$17,341	$17,341	0.0092	$160
150		$41,091	$41,091	0.0089	$366
				TOTAL PRESENT WORTH	**$695,005**

1. Discount rate column is a calculated annual multiplier when discount rate = $(1-e)^n$ where e = 3.2% and n = year (1 - 150).

Table D-32. (Alternative 2), 216-B-58 Trench Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Purchase, deliver, and place topsoil											
Purchase pea gravel (purchase and delivery)	1.5	cy		$55.67			$0	$84	$0	$0	$84
Silt loam, from Pit 30 excavate/load (13.5 cy)	1	day			$296.00	$1,190.17	$0	$0	$296	$1,190	$1,486
Silt loam hauling, 1 Truck	1	day			$296.00	$398.55	$0	$0	$296	$399	$695
Equipment mob/demob (front-end loader)	3	ea			$100.00	$352.00	$0	$0	$300	$1,056	$1,356
Place, grade, and compact backfill	15	cy		$14.00	$10.00	$5.68	$0	$210	$150	$85	$445
Fine grading and seeding, incl. lime, fert, and seed	22	sy		$0.26	$1.19	$0.18	$0	$6	$26	$4	$36
Oversight (1 day x 8 hrs/day)	8	hrs			$56.00		$0	$0	$448	$0	$448
Subtotal Direct Costs							$0	$299	$1,516	$2,734	$4,549

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Drill vadose zone borehole (cost occurs every 30 years)											
Mobilize/demobilize drill rig	1	ls			$625.00	$1,875.00	$0	$0	$625	$1,875	$2,500
Borehole installation	50	lf			$8.77	$36.23	$0	$0	$439	$1,811	$2,250
Decontamination of drill rig	1	ls	$1,000.00				$1,000	$0	$0	$0	$1,000
Collect/containerize IDW	1	ea	$50.00				$50	$0	$0	$0	$50
Characterize IDW	1	ea	$700.00				$700	$0	$0	$0	$700
Transport/dispose IDW off site	1	drums	$150.00				$150	$0	$0	$0	$150
Oversight (inc. sampling, labor, and equipment)	8	hrs			$56.00		$0	$0	$448	$0	$448
PPE (1 p * 1 day)	1	day		$31.67			$0	$32	$0	$0	$32
Subtotal Direct Costs							$1,900	$32	$1,512	$3,686	$7,130

Alternative 3, Remove and Dispose Cost Summary, costs are presented for the representative waste sites in Tables D-33 through D-46.

Table D-33. (Alternative 3), 216-T-26 Crib Representative Site, Capital Cost 200 TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (2 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	64	days			$1,720.00		$0	$0	$110,080	$0	$110,080
RCT on Excavator (2 for 30 days)	60	days			$448.00		$0	$0	$26,880	$0	$26,880
RCT Decontamination Crew (4 RCT)	16	days			$1,792.00		$0	$0	$28,672	$0	$28,672
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845 lcy Contaminated Soil, or 6 Min)	6	ea	$5,000.00				$30,000	$0	$0	$0	$30,000
Site Certification Samples (1 per 6,264 sf, or 6 Min)	6	ea	$5,000.00				$30,000	$0	$0	$0	$30,000
QC Samples (5% of Total Samples)	1	ea	$5,000.00				$5,000	$0	$0	$0	$5,000
Air Sampling and Crew (Sampler and RCT)	30	days	$1,000.00		$896.00	$500.00	$30,000	$0	$26,880	$15,000	$71,880
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	30	days			$672.00		$0	$0	$20,160	$0	$20,160
Site Cert Sampling Crew (Sampler and RCT, 3 samples/hr)	0.3	days			$672.00		$0	$0	$202	$0	$202
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	401	ea	$1,100.00				$441,100	$0	$0	$0	$441,100
Fluor Hanford Field Cost							$542,700	$0	$212,874	$15,000	$770,574
Fluor Hanford G & A on Labor Cost @	15%								$31,931		$31,931
Fluor Hanford G & A on Material Cost @	15%							$0			$0
Fluor Hanford G & A on Equipment Cost @	15%									$2,250	$2,250
Fluor Hanford Total Cost							$542,700	$0	$244,805	$17,250	$804,755
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	3.1	mo				$350.00	$0	$0	$0	$1,085	$1,085
Field Office Support	3.1	mo		$139.00			$0	$431	$0	$0	$431
Storage Trailer	3.1	mo				$105.00	$0	$0	$0	$326	$326
Equipment Mobilization/Demobilization	14	ea			$100.00	$352.00	$0	$0	$1,400	$4,928	$6,328
Personnel Mobilization/Demobilization	16	ea			$592.00		$0	$0	$9,472	$0	$9,472
Construction Survey	0.95	ac	$1,748.00				$1,661	$0	$0	$0	$1,661
Site Utilities, Generator and Oiler	3.1	mo			$6,216.00	$1,394.80	$0	$0	$19,270	$4,324	$23,593
Install Temporary Fence (Blaze Orange)	893	lf		$1.63	$1.16		$0	$1,456	$1,036	$0	$2,491
Haul Road - Gravel, 6" thick	1,760	sy		$6.50	$0.33	$0.53	$0	$11,440	$581	$933	$12,954
Construct Decontamination Pad (See Table D-34)	1	ea		$6,682.86	$5,920.00	$310.56	$0	$6,683	$5,920	$311	$12,913
DECONTAMINATION											
Decontamination Crew (4 Laborers)	16	day			$1,184.00		$0	$0	$18,944	$0	$18,944
Water for Decon Process (1,000 gal/month)	800	gal		$0.20			$0	$160	$0	$0	$160

Table D-33. (Alternative 3), 216-T-26 Crib Representative Site, Capital Cost 200 TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (2 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
EXCAVATION											
Water Truck	30	day			$296.00	$80.00	$0	$0	$8,880	$2,400	$11,280
Hydraulic Excavator (2 for 30 days)	60	day			$296.00	$559.90	$0	$0	$17,760	$33,594	$51,354
Front End Loader	30	day			$296.00	$630.27	$0	$0	$8,880	$18,908	$27,788
SITE RESTORATION											
Front End Loader, On-Site	19	day			$296.00	$630.27	$0	$0	$5,624	$11,975	$17,599
Bulldozer, On-Site	19	day			$296.00	$656.42	$0	$0	$5,624	$12,472	$18,096
Hydraulic Excavator, Pit 30	19	day			$296.00	$559.90	$0	$0	$5,624	$10,638	$16,262
Front End Loader, Pit 30	19	day			$296.00	$630.27	$0	$0	$5,624	$11,975	$17,599
Hauling Pit 30 Material, 5 Trucks, 19 days/each	95	day			$296.00	$398.55	$0	$0	$28,120	$37,862	$65,982
Fine Grading and Seeding (Lime, Fert, and Seed Incl.)	4,613	sy		$0.26	$1.19	$0.18	$0	$1,199	$5,489	$830	$7,519
Water Truck	19	day			$296.00	$80.00	$0	$0	$5,624	$1,520	$7,144
MISCELLANEOUS											
Support Personnel	64	day			$1,896.00		$0	$0	$121,344	$0	$121,344
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$1,661	$21,369	$283,216	$154,081	$460,326
Direct Markup on Labor @	25%								$70,804		$70,804
Direct Markup on Materials @	10%							$2,137			$2,137
Direct Markup on Subcontracts @	10%						$166				$166
Construction Contractor G&A @	26.5%						$440	$5,663	$75,052	$40,831	$121,986
Construction Contractor Subtotal							$2,267	$29,168	$429,072	$194,913	$655,419
Fluor Hanford G&A on Construction Contractor Cost @	15%						$340	$4,375	$64,361	$29,237	$98,313
Construction Contractor Total Cost							$2,607	$33,544	$493,433	$224,149	$753,732
Fluor Hanford Total Cost (From Above)							$542,700	$0	$244,805	$17,250	$804,755
Project Subtotal							$545,307	$33,544	$738,237	$241,399	$1,558,487
Contingency on Total Field Cost @	40%										$623,395
TOTAL COST											**$2,181,882**

Table D-34. (Alternative 3), 216-T-26 Crib Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
Subtotal Direct Cost							$0	$6,683	$5,920	$311	$12,913

NOTE:
Cost of labor to run the decontamination pad provided under Line Item 2.1 (Decontamination Crew) on Table D-33.

Table D-35. (Alternative 3), 216-B-46 Crib Representative Site, Capital Cost 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (2 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	1,192	days			$1,720.00		$0	$0	$1,080,160	$0	$1,080,160
RCT on Excavator (2 for 1,026 days)	2,052	days			$448.00		$0	$0	$462,336	$0	$462,336
RCT Decontamination Crew (4 RCT)	962	days			$1,792.00		$0	$0	$844,032	$0	$844,032
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845 lcy Contaminated Soil, or 6 Min)	96	ea	$5,000.00				$480,000	$0	$0	$0	$480,000
Site Certification Samples (1 per 6,264 sf, or 6 Min)	27	ea	$5,000.00				$135,000	$0	$0	$0	$135,000
QC Samples (5% of Total Samples)	7	ea	$5,000.00				$35,000	$0	$0	$0	$35,000
Air Sampling and Crew (Sampler and RCT)	1,026	days	$1,000.00		$896.00	$500.00	$1,026,000	$0	$919,296	$513,000	$2,458,296
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	1,026	days			$672.00		$0	$0	$689,472	$0	$689,472
Site Cert Sampling Crew (Sampler and RCT, 3 samples/hr)	1.2	days			$672.00		$0	$0	$806	$0	$806
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	8,649	ea	$1,100.00				$9,513,900	$0	$0	$0	$9,513,900
Fluor Hanford Field Cost							$11,196,500	$0	$6,303,014	$513,000	$18,012,514
Fluor Hanford G & A on Labor Cost @	15%								$945,452		$945,452
Fluor Hanford G & A on Material Cost @	15%							$0			$0
Fluor Hanford G & A on Equipment Cost @	15%									$76,950	$76,950
Fluor Hanford Total Cost							$11,196,500	$0	$7,248,467	$589,950	$19,034,917
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	56.8	mo				$350.00	$0	$0	$0	$19,880	$19,880
Field Office Support	56.8	mo		$139.00			$0	$7,895	$0	$0	$7,895
Storage Trailer	56.8	mo				$105.00	$0	$0	$0	$5,964	$5,964
Equipment Mobilization/Demobilization	14	ea			$100.00	$352.00	$0	$0	$1,400	$4,928	$6,328
Personnel Mobilization/Demobilization	16	ea			$592.00		$0	$0	$9,472	$0	$9,472
Construction Survey	4.34	ac	$1,748.00				$7,586	$0	$0	$0	$7,586
Site Utilities, Generator and Oiler	56.8	mo			$6,216.00	$1,394.80	$0	$0	$353,069	$79,225	$432,293
Install Temporary Fence (Blaze Orange)	1,925	lf		$1.63	$1.16		$0	$3,138	$2,233	$0	$5,371
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (See Table D-36)	2	ea		$6,682.86	$5,920.00	$310.56	$0	$13,366	$11,840	$621	$25,827
DECONTAMINATION											
Decontamination Crew (4 Laborers)	962	day			$1,184.00		$0	$0	$1,139,008	$0	$1,139,008
Water for Decon Process (1,000 gal/month)	45,900	gal		$0.20			$0	$9,180	$0	$0	$9,180
EXCAVATION											
Water Truck	1,026	day			$296.00	$80.00	$0	$0	$303,696	$82,080	$385,776
Hydraulic Excavator (2 for 1,026 days)	2,052	day			$296.00	$559.90	$0	$0	$607,392	$1,148,925	$1,756,317
Front End Loader	1,026	day			$296.00	$630.27	$0	$0	$303,696	$646,654	$950,350

Table D-35. (Alternative 3), 216-B-46 Crib Representative Site, Capital Cost 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (2 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
SITE RESTORATION											
Front End Loader, On-Site	141	day			$296.00	$630.27	$0	$0	$41,736	$88,868	$130,604
Bulldozer, On-Site	141	day			$296.00	$656.42	$0	$0	$41,736	$92,555	$134,291
Hydraulic Excavator, Pit 30	141	day			$296.00	$559.90	$0	$0	$41,736	$78,947	$120,683
Front End Loader, Pit 30	141	day			$296.00	$630.27	$0	$0	$41,736	$88,868	$130,604
Hauling Pit 30 Material, 5 Trucks, 141 days/each	705	day			$296.00	$398.55	$0	$0	$208,680	$280,979	$489,659
Fine Grading and Seeding (Lime, Fert, and Seed Incl.)	20,992	sy		$0.26	$1.19	$0.18	$0	$3,867	$24,980	$3,779	$34,217
Water Truck	141	day			$296.00	$80.00	$0	$0	$41,736	$11,280	$53,016
MISCELLANEOUS											
Support Personnel	1,192	day			$1,896.00		$0	$0	$2,260,032	$0	$2,260.032
Post Construction Documents	320	hr			$50.00		$0	$0	$16,000	$0	$16,000
Construction Contractor Field Cost							$7,586	$67,637	$5,451,630	$2,635,883	$8,162,736
Direct Markup on Labor @	25%								$1,362,908		$1,362,908
Direct Markup on Materials @	10%							$6,764			$6,764
Direct Markup on Subcontracts @	10%						$759				$759
Construction Contractor G&A @	26.5%						$2,010	$17,924	$1,444,682	$698,509	$2,163,125
Construction Contractor Subtotal							$10,355	$92,324	$8,259,220	$3,334,391	$11,696,291
Fluor Hanford G&A on Construction Contractor Cost @	15%						$1,553	$13,849	$1,238,883	$500,159	$1,754,444
Construction Contractor Total Cost							$11,909	$106,173	$9,498,103	$3,834,550	$13,450,734
Fluor Hanford Total Cost (From Above)							$11,196,500	$0	$7,248,467	$589,950	$19,034,917
Project Subtotal							$11,208,409	$106,173	$16,746,569	$4,424,500	$32,485,651
Contingency on Total Field Cost @	40%										$12,994,260
TOTAL COST											**$45,479,911**

Table D-36. (Alternative 3), 216-B-46 Crib Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
Subtotal Direct Cost							$0	$6,683	$5,920	$311	$12,913

NOTE:
Cost of labor to run the decontamination pad provided under Line Item 2.1 (Decontamination Crew) on Table D-35.
Assume all decon pad materials replaced every 36 months.

Table D-37. (Alternative 3), 216-B-7A&B Crib Representative Site, Capital Cost 200-TW-2 Tank Waste Group Hanford Site, Washington State, (2 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	70	days			$1,720.00		$0	$0	$120,400	$0	$120,400
RCT on Excavator (2 for 35 days)	70	days			$448.00		$0	$0	$31,360	$0	$31,360
RCT Decontamination Crew (4 RCT)	29	days			$1,792.00		$0	$0	$51,968	$0	$51,968
Additional RCT During Excavation (4 RCT)	35	days			$1,792.00		$0	$0	$62,720	$0	$62,720
RCT Supervisor	35	days			$580.88		$0	$0	$20,331	$0	$20,331
Radiological Engineer	35	days			$502.24		$0	$0	$17,578	$0	$17,578
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845 lcy Contaminated Soil, or 6 Min)	6	ea	$5,000.00				$30,000	$0	$0	$0	$30,000
Site Certification Samples (1 per 6,264 sf, or 6 Min)	6	ea	$5,000.00				$30,000	$0	$0	$0	$30,000
QC Samples (5% of Total Samples)	1	ea	$5,000.00				$5,000	$0	$0	$0	$5,000
Air Sampling and Crew (Sampler and RCT)	35	days	$1,000.00		$896.00	$500.00	$35,000	$0	$31,360	$17,500	$83,860
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	35	days			$672.00		$0	$0	$23,520	$0	$23,520
Site Cert Sampling Crew (Sampler and RCT, 3 samples/hr)	0.3	days			$672.00		$0	$0	$202	$0	$202
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	257	ea	$1,100.00				$282,700	$0	$0	$0	$282,700
Fluor Hanford Field Cost							$389,300	$0	$359,439	$17,500	$766,239
Fluor Hanford G & A on Labor Cost @	15%								$53,916		$53,916
Fluor Hanford G & A on Material Cost @	15%							$0			$0
Fluor Hanford G & A on Equipment Cost @	15%									$2,625	$2,625
Fluor Hanford Total Cost							$389,300	$0	$413,355	$20,125	$822,780
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	3.4	mo				$350.00	$0	$0	$0	$1,190	$1,190
Field Office Support	3.4	mo		$139.00			$0	$473	$0	$0	$473
Storage Trailer	3.4	mo				$105.00	$0	$0	$0	$357	$357
Equipment Mobilization/Demobilization	14	ea			$100.00	$352.00	$0	$0	$1,400	$4,928	$6,328
Personnel Mobilization/Demobilization	16	ea			$592.00		$0	$0	$9,472	$0	$9,472
Construction Survey	0.57	ac	$1,748.00				$996	$0	$0	$0	$996
Site Utilities, Generator and Oiler	3.4	mo			$6,216.00	$1,394.80	$0	$0	$21,134	$4,742	$25,877
Install Temporary Fence (Blaze Orange)	696	lf		$1.63	$1.16		$0	$1,134	$807	$0	$1,942
Haul Road - Gravel, 6" thick	1,760	sy		$6.50	$0.33	$0.53	$0	$11,440	$581	$933	$12,954
Construct Decontamination Pad (See Table D-38)	1	ea		$6,682.86	$5,920.00	$310.56	$0	$6,683	$5,920	$311	$12,913
DECONTAMINATION											
Decontamination Crew (4 Laborers)	29	day			$1,184.00		$0	$0	$34,336	$0	$34,336
Water for Decon Process (1,000 gal/month)	1,400	gal		$0.20			$0	$280	$0	$0	$280

Table D-37. (Alternative 3), 216-B-7A&B Crib Representative Site, Capital Cost 200-TW-2 Tank Waste Group Hanford Site, Washington State, (2 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
EXCAVATION											
Water Truck	35	day			$296.00	$80.00	$0	$0	$10,360	$2,800	$13,160
Hydraulic Excavator (2 for 35 days)	70	day			$296.00	$559.90	$0	$0	$20,720	$39,193	$59,913
Front End Loader	35	day			$296.00	$630.27	$0	$0	$10,360	$22,059	$32,419
SITE RESTORATION											
Front End Loader, On-Site	10	day			$296.00	$630.27	$0	$0	$2,960	$6,303	$9,263
Bulldozer, On-Site	10	day			$296.00	$656.42	$0	$0	$2,960	$6,564	$9,524
Hydraulic Excavator, Pit 30	10	day			$296.00	$559.90	$0	$0	$2,960	$5,599	$8,559
Front End Loader, Pit 30	10	day			$296.00	$630.27	$0	$0	$2,960	$6,303	$9,263
Hauling Pit 30 Material, 5 Trucks, 10 days/each	50	day			$296.00	$398.55	$0	$0	$14,800	$19,928	$34,728
Fine Grading and Seeding (Lime, Fert, and Seed Incl.)	2,765	sy		$0.26	$1.19	$0.18	$0	$719	$3,290	$498	$4,507
Water Truck	10	day			$296.00	$80.00	$0	$0	$2,960	$800	$3,760
MISCELLANEOUS											
Support Personnel	70	day			$1,896.00		$0	$0	$132,720	$0	$132,720
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$996	$20,729	$288,701	$122,507	$432,933
Direct Markup on Labor @	25%								$72,175		$72,175
Direct Markup on Materials @	10%							$2,073			$2,073
Direct Markup on Subcontracts @	10%						$100				$100
Construction Contractor G&A @	26.5%						$264	$5,493	$76,506	$32,464	$114,727
Construction Contractor Subtotal							$1,360	$28,295	$437,382	$154,972	$622,008
Fluor Hanford G&A on Construction Contractor Cost @	15%						$204	$4,244	$65,607	$23,246	$93,301
Construction Contractor Total Cost							$1,564	$32,539	$502,989	$178,217	$715,310
Fluor Hanford Total Cost (From Above)							$389,300	$0	$413,355	$20,125	$822,780
Project Subtotal							$390,864	$32,539	$916,344	$198,342	$1,538,089
Contingency on Total Field Cost @	40%										$615,236
TOTAL COST											**$2,153,325**

Table D-38. (Alternative 3), 216-B-7A&B Crib Representative Site, Calculation Sheet 200-TW-2 Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
Subtotal Direct Cost							$0	$6,683	$5,920	$311	$12,913

NOTE:
Cost of labor to run the decontamination pad provided under Line Item 2.1 (Decontamination Crew) on Table D-37.

Table D-39. (Alternative 3), 216-B-38 Crib Representative Site, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (2 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	2,477	days			$1,720.00		$0	$0	$4,260,440	$0	$4,260,440
RCT on Excavator (2 for 2,195 days)	4,390	days			$448.00		$0	$0	$1,966,720	$0	$1,966,720
RCT Decontamination Crew (4 RCT)	2,104	days			$1,792.00		$0	$0	$3,770,368	$0	$3,770,368
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845 lcy Contaminated Soil, or 6 Min)	209	ea	$5,000.00				$1,045,000	$0	$0	$0	$1,045,000
Site Certification Samples (1 per 6,264 sf, or 6 Min)	48	ea	$5,000.00				$240,000	$0	$0	$0	$240,000
QC Samples (5% of Total Samples)	14	ea	$5,000.00				$70,000	$0	$0	$0	$70,000
Air Sampling and Crew (Sampler and RCT)	2,195	days	$1,000.00		$896.00	$500.00	$2,195,000	$0	$1,966,720	$1,097,500	$5,259,220
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	2,195	days			$672.00		$0	$0	$1,475,040	$0	$1,475,040
Site Cert Sampling Crew (Sampler and RCT, 3 samples/hr)	2	days			$672.00		$0	$0	$1,344	$0	$1,344
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	33,505	ea	$1,100.00				$36,855,500	$0	$0	$0	$36,855,500
Fluor Hanford Field Cost							$40,412,100	$0	$13,440,632	$1,097,500	$54,950,232
Fluor Hanford G & A on Labor Cost @	15%								$2,016,095		$2,016,095
Fluor Hanford G & A on Material Cost @	15%							$0			$0
Fluor Hanford G & A on Equipment Cost @	15%									$164,625	$164,625
Fluor Hanford Total Cost							$40,412,100	$0	$15,456,727	$1,262,125	$57,130,952
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	118	mo				$350.00	$0	$0	$0	$41,300	$41,300
Field Office Support	118	mo		$139.00			$0	$16,402	$0	$0	$16,402
Storage Trailer	118	mo				$105.00	$0	$0	$0	$12,390	$12,390
Equipment Mobilization/Demobilization	14	ea			$100.00	$352.00	$0	$0	$1,400	$4,928	$6,328
Personnel Mobilization/Demobilization	16	ea			$592.00		$0	$0	$9,472	$0	$9,472
Construction Survey	7.76	ac	$1,748.00				$13,564	$0	$0	$0	$13,564
Site Utilities, Generator and Oiler	118	mo			$6,216.00	$1,394.80	$0	$0	$733,488	$164,586	$898,074
Install Temporary Fence (Blaze Orange)	2,604	lf		$1.63	$1.16		$0	$4,245	$3,021	$0	$7,265
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (See Table D-40)	4	ea		$6,682.86	$5,920.00	$310.56	$0	$26,731	$23,680	$1,242	$51,654
DECONTAMINATION											
Decontamination Crew (4 Laborers)	2,104	day			$1,184.00		$0	$0	$2,491,136	$0	$2,491,136

Table D-39. (Alternative 3), 216-B-38 Crib Representative Site, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (2 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Water for Decon Process (1,000 gal/month)	100,200	gal		$0.20			$0	$20,040	$0	$0	$20,040
EXCAVATION											
Water Truck	2,195	day			$296.00	$80.00	$0	$0	$649,720	$175,600	$825,320
Hydraulic Excavator (2 for 2,195 days)	4,390	day			$296.00	$559.90	$0	$0	$1,299,440	$2,457,982	$3,757,422
Front End Loader	2,195	day			$296.00	$630.27	$0	$0	$649,720	$1,383,435	$2,033,155
Hydraulic Excavator, Pit 30	32	day			$296.00	$559.90	$0	$0	$9,472	$17,917	$27,389
Front End Loader, Pit 30	32	day			$296.00	$630.27	$0	$0	$9,472	$20,169	$29,641
Hauling Pit 30 Material, 5 Trucks, 32 days/each	160	day			$296.00	$398.55	$0	$0	$47,360	$63,768	$111,128
SITE RESTORATION											
Front End Loader, On-Site	257	day			$296.00	$630.27	$0	$0	$76,072	$161,979	$238,051
Bulldozer, On-Site	257	day			$296.00	$656.42	$0	$0	$76,072	$168,699	$244,771
Hydraulic Excavator, Pit 30	257	day			$296.00	$559.90	$0	$0	$76,072	$143,896	$219,968
Front End Loader, Pit 30	257	day			$296.00	$630.27	$0	$0	$76,072	$161,979	$238,051
Hauling Pit 30 Material, 5 Trucks, 257 days/each	1,285	day			$296.00	$398.55	$0	$0	$380,360	$512,140	$892,500
Fine Grading and Seeding (Lime, Fert, and Seed Incl.)	37,553	sy		$0.26	$1.19	$0.18	$0	$9,764	$44,688	$6,760	$61,211
Water Truck	257	day			$296.00	$80.00	$0	$0	$76,072	$20,560	$96,632
MISCELLANEOUS											
Support Personnel	2,477	day			$1,896.00		$0	$0	$4,696,392	$0	$4,696,392
Post Construction Documents	320	hr			$50.00		$0	$0	$16,000	$0	$16,000
Construction Contractor Field Cost							$13,564	$105,782	$11,446,633	$5,521,661	$17,087,640
Direct Markup on Labor @	25%								$2,861,658		$2,861,658
Direct Markup on Materials @	10%							$10,578			$10,578
Direct Markup on Subcontracts @	10%						$1,356				$1,356
Construction Contractor G&A @	26.5%						$3,595	$28,032	$3,033,358	$1,463,240	$4,528,225
Construction Contractor Subtotal							$18,516	$144,392	$17,341,649	$6,984,901	$24,489,457
Fluor Hanford G&A on Constr. Contractor Cost @	15%						$2,777	$21,659	$2,601,247	$1,047,735	$3,673,419
Construction Contractor Total Cost							$21,293	$166,051	$19,942,896	$8,032,636	$28,162,876
Fluor Hanford Total Cost (From Above)							$40,412,100	$0	$15,456,727	$1,262,125	$57,130,952
Project Subtotal							$40,433,393	$166,051	$35,399,623	$9,294,761	$85,293,828
Contingency on Total Field Cost @	40%										$34,117,531
TOTAL COST											**$119,411,359**

Table D-40. (Alternative 3), 216-B-38 Crib Representative Site, Calculation Sheet 200-TW-2 Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Decontamination Pad Construction and Rental Costs											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
Subtotal Direct Cost							$0	$6,683	$5,920	$311	$12,913

NOTE:
Cost of labor to run the decontamination pad provided under Line Item 2.1 (Decontamination Crew) on Table D-39.
Assume all decon pad materials replaced every 36 months.

Table D-41. (Alternative 3), 216-B-57 Crib Representative Site, Capital Cost 200-PW-5 Fission Product Rich Process Waste Group, Hanford Site, Washington State, (2 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	125	days			$1,720.00		$0	$0	$215,000	$0	$215,000
RCT on Excavator (2 for 76 days)	152	days			$448.00		$0	$0	$68,096	$0	$68,096
RCT Decontamination Crew (4 RCT)	54	days			$1,792.00		$0	$0	$96,768	$0	$96,768
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845 lcy Contaminated Soil, or 6 Min)	6	ea	$5,000.00				$30,000	$0	$0	$0	$30,000
Site Certification Samples (1 per 6,264 sf, or 6 Min)	10	ea	$5,000.00				$50,000	$0	$0	$0	$50,000
QC Samples (5% of Total Samples)	2	ea	$5,000.00				$10,000	$0	$0	$0	$10,000
Air Sampling and Crew (Sampler and RCT)	76	days	$1,000.00		$896.00	$500.00	$76,000	$0	$68,096	$38,000	$182,096
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	76	days			$672.00		$0	$0	$51,072	$0	$51,072
Site Cert Sampling Crew (Sampler and RCT, 3 samples/hr)	0.5	days			$672.00		$0	$0	$336	$0	$336
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	1,819	ea	$1,100.00				$2,000,900	$0	$0	$0	$2,000,900
Fluor Hanford Field Cost							$2,173,500	$0	$499,368	$38,000	$2,710,868
Fluor Hanford G & A on Labor Cost @	15%								$74,905		$74,905
Fluor Hanford G & A on Material Cost @	15%							$0			$0
Fluor Hanford G & A on Equipment Cost @	15%									$5,700	$5,700
Fluor Hanford Total Cost							$2,173,500	$0	$574,273	$43,700	$2,791,473
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	6	mo				$350.00	$0	$0	$0	$2,100	$2,100
Field Office Support	6	mo		$139.00			$0	$834	$0	$0	$834
Storage Trailer	6	mo				$105.00	$0	$0	$0	$630	$630
Equipment Mobilization/Demobilization	14	ea			$100.00	$352.00	$0	$0	$1,400	$4,928	$6,328
Personnel Mobilization/Demobilization	16	ea			$592.00		$0	$0	$9,472	$0	$9,472
Construction Survey	1.59	ac	$1,748.00				$2,779	$0	$0	$0	$2,779
Site Utilities, Generator and Oiler	6	mo			$6,216.00	$1,394.80	$0	$0	$37,296	$8,369	$45,665
Install Temporary Fence (Blaze Orange)	1,236	lf		$1.63	$1.16		$0	$2,015	$1,434	v	$3,448
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (See Table D-42)	1	ea		$6,682.86	$5,920.00	$310.56	$0	$6,683	$5,920	$311	$12,913
DECONTAMINATION											
Decontamination Crew (4 Laborers)	54	day			$1,184.00		$0	$0	$63,936	$0	$63,936
Water for Decon Process (1,000 gal/month)	2,600	gal		$0.20			$0	$520	$0	$0	$520

Table D-41. (Alternative 3), 216-B-57 Crib Representative Site, Capital Cost 200-PW-5 Fission Product Rich Process Waste Group, Hanford Site, Washington State, (2 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
EXCAVATION											
Water Truck	76	day			$296.00	$80.00	$0	$0	$22,496	$6,080	$28,576
Hydraulic Excavator (2 for 76 days)	152	day			$296.00	$559.90	$0	$0	$44,992	$85,106	$130,098
Front End Loader	76	day			$296.00	$630.27	$0	$0	$22,496	$47,900	$70,396
SITE RESTORATION											
Front End Loader, On-Site	34	day			$296.00	$630.27	$0	$0	$10,064	$21,429	$31,493
Bulldozer, On-Site	34	day			$296.00	$656.42	$0	$0	$10,064	$22,318	$32,382
Hydraulic Excavator, Pit 30	34	day			$296.00	$559.90	$0	$0	$10,064	$19,037	$29,101
Front End Loader, Pit 30	34	day			$296.00	$630.27	$0	$0	$10,064	$21,429	$31,493
Hauling Pit 30 Material, 5 Trucks, 34 days/each	170	day			$296.00	$398.55	$0	$0	$50,320	$67,754	$118,074
Fine Grading and Seeding (Lime, Fert, and Seed Incl.)	7,700	sy		$0.26	$1.19	$0.18	$0	$2,002	$9,163	$1,386	$12,551
Water Truck	34	day			$296.00	$80.00	$0	$0	$10,064	$2,720	$12,784
MISCELLANEOUS											
Support Personnel	125	day			$1,896.00		$0	$0	$237,000	$0	$237,000
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$2,779	$40,654	$565,697	$313,828	$922,958
Direct Markup on Labor @	25%								$141,424		$141,424
Direct Markup on Materials @	10%							$4,065			$4,065
Direct Markup on Subcontracts @	10%						$278				$278
Construction Contractor G&A @	26.5%						$737	$10,773	$149,910	$83,164	$244,584
Construction Contractor Subtotal							$3,794	$55,492	$857,031	$396,993	$1,313,309
Fluor Hanford G&A on Construction Contractor Cost @	15%						$569	$8,324	$128,555	$59,549	$196,996
Construction Contractor Total Cost							$4,363	$63,816	$985,585	$456,541	$1,510,305
Fluor Hanford Total Cost (From Above)							$2,173,500	$0	$574,273	$43,700	$2,791,473
Project Subtotal							$2,177,863	$63,816	$1,559,858	$500,241	$4,301,779
Contingency on Total Field Cost @	40%										$1,720,711
TOTAL COST											$6,022,490

Table D-42. (Alternative 3), 216-B-57 Crib Representative Site, Calculation Sheet 200-PW-5 Fission Product Rich Process Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
Subtotal Direct Cost							$0	$6,683	$5,920	$311	$12,913

NOTE:
Cost of labor to run the decontamination pad provided under Line Item 2.1 (Decontamination Crew) on Table D-41.

Table D-43. (Alternative 3), 241-B-361 Settling Tank, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (2 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	46	days			$1,720.00		$0	$0	$79,120	$0	$79,120
RCT on Excavator (1)	22	days			$448.00		$0	$0	$9,856	$0	$9,856
RCT Decontamination Crew (4 RCT)	10	days			$1,792.00		$0	$0	$17,920	$0	$17,920
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
Site Certification Samples (1 per 6,264 sf, or 6 Min)	6	ea	$5,000.00				$30,000	$0	$0	$0	$30,000
QC Samples (5% of Total Samples)	1	ea	$5,000.00				$5,000	$0	$0	$0	$5,000
Air Sampling and Crew (Sampler and RCT)	22	days	$1,000.00		$896.00	$500.00	$22,000	$0	$19,712	$11,000	$52,712
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	22	days			$672.00		$0	$0	$14,784	$0	$14,784
Site Cert Sampling Crew (Sampler and RCT, 3 samples/hr)	0.3	days			$672.00		$0	$0	$202	$0	$202
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	4	ea	$1,100.00				$4,400	$0	$0	$0	$4,400
Fluor Hanford Field Cost							$68,000	$0	$141,594	$11,000	$220,594
Fluor Hanford G & A on Labor Cost @	15%								$21,239		$21,239
Fluor Hanford G & A on Material Cost @	15%							$0			$0
Fluor Hanford G & A on Equipment Cost @	15%									$1,650	$1,650
Fluor Hanford Total Cost							$68,000	$0	$162,833	$12,650	$243,483
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	2.2	mo				$350.00	$0	$0	$0	$770	$770
Field Office Support	2.2	mo		$139.00			$0	$306	$0	$0	$306
Storage Trailer	2.2	mo				$105.00	$0	$0	$0	$231	$231
Equipment Mobilization/Demobilization	15	ea			$100.00	$352.00	$0	$0	$1,500	$5,280	$6,780
Personnel Mobilization/Demobilization	16	ea			$592.00		$0	$0	$9,472	$0	$9,472
Construction Survey	0.74	ac	$1,748.00				$1,294	$0	$0	$0	$1,294
Site Utilities, Generator and Oiler	2.2	mo		$1,394.80	$6,216.00		$0	$3,069	$13,675	$0	$16,744
Install Temporary Fence (Blaze Orange)	1,395	lf		$1.63	$1.16		$0	$2,274	$1,618	$0	$3,892
Haul Road - Gravel, 6" thick	1,760	sy		$6.50	$0.33	$0.53	$0	$11,440	$581	$933	$12,954
Construct Decontamination Pad (See Table D-44)	1	ea		$6,682.86	$5,920.00	$310.56	$0	$6,683	$5,920	$311	$12,913
DECONTAMINATION											
Decontamination Crew (4 Laborers)	10	day			$1,184.00		$0	$0	$11,840	$0	$11,840
Water for Decon Process (1,000 gal/month)	500	gal		$0.20			$0	$100	$0	$0	$100
EXCAVATION											
Water Truck	12	day			$296.00	$80.00	$0	$0	$3,552	$960	$4,512

Table D-43. (Alternative 3), 241-B-361 Settling Tank, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (2 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Hydraulic Excavator	12	day			$296.00	$559.90	$0	$0	$3,552	$6,719	$10,271
Front End Loader	12	day			$296.00	$630.27	$0	$0	$3,552	$7,563	$11,115
TANK DEMOLITION											
Hydraulic Excavator, 3 1/2 cy (2 for 10 days)	20	day			$296.00	$1,667.50	$0	$0	$5,920	$33,350	$39,270
Bucket Thumb for Excavator	10	day				$98.10	$0	$0	$0	$981	$981
Grapple for Excavator	10	day				$94.90	$0	$0	$0	$949	$949
Front End Loader	10	day			$296.00	$630.27	$0	$0	$2,960	$6,303	$9,263
SITE RESTORATION											
Front End Loader, On-Site	9	day			$296.00	$630.27	$0	$0	$2,664	$5,672	$8,336
Bulldozer, On-Site	9	day			$296.00	$656.42	$0	$0	$2,664	$5,908	$8,572
Hydraulic Excavator, Pit 30	9	day			$296.00	$559.90	$0	$0	$2,664	$5,039	$7,703
Front End Loader, Pit 30	9	day			$296.00	$630.27	$0	$0	$2,664	$5,672	$8,336
Hauling Pit 30 Material, 5 Trucks, 9 days/each	45	day			$296.00	$398.55	$0	$0	$13,320	$17,935	$31,255
Fine Grading and Seeding (Lime, Fert, and Seed Incl.)	3,584	sy		$0.26	$1.19	$0.18	$0	$932	$4,265	$645	$5,842
Water Truck	9	day			$296.00	$80.00	$0	$0	$2,664	$720	$3,384
MISCELLANEOUS											
Support Personnel	46	day			$1,896.00		$0	$0	$87,216	$0	$87,216
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$1,294	$24,803	$190,263	$105,941	$322,300
Direct Markup on Labor @	25%								$47,566		$47,566
Direct Markup on Materials @	10%							$2,480			$2,480
Direct Markup on Subcontracts @	10%						$129				$129
Construction Contractor G&A @	26.5%						$343	$6,573	$50,420	$28,074	$85,410
Construction Contractor Subtotal							$1,766	$33,856	$288,249	$134,015	$457,885
Fluor Hanford G&A on Construction Contractor Cost @	15%						$265	$5,078	$43,237	$20,102	$68,683
Construction Contractor Total Cost							$2,031	$38,934	$331,486	$154,117	$526,568
Fluor Hanford Total Cost (From Above)							$68,000	$0	$162,833	$12,650	$243,483
Project Subtotal							$70,031	$38,934	$494,319	$166,767	$770,051
Contingency on Total Field Costs @	40%										$308,020
Total Cost Minus Sludge Removal											$1,078,071
Sludge Removal											$6,000,000
TOTAL COST											$7,078,071

Table D-44. (Alternative 3), 241-B-361 Settling Tank, Calculation Sheet 200-TW-2 Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
Subtotal Direct Cost							$0	$6,683	$5,920	$311	$12,913

NOTE:
Cost of labor to run the decontamination pad provided under Line Item 2.1 (Decontamination Crew) on Table D-43

Table D-45. (Alternative 3), 216-B-58 Crib Representative Site, Capital Cost 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (2 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	44	days			$1,720.00		$0	$0	$75,680	$0	$75,680
RCT on Excavator (2 for 21 days)	42	days			$448.00		$0	$0	$18,816	$0	$18,816
RCT Decontamination Crew (4 RCT)	16	days			$1,792.00		$0	$0	$28,672	$0	$28,672
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845 lcy Contaminated Soil, or 6 Min)	6	ea	$5,000.00				$30,000	$0	$0	$0	$30,000
Site Certification Samples (1 per 6,264 sf, or 6 Min)	6	ea	$5,000.00				$30,000	$0	$0	$0	$30,000
QC Samples (5% of Total Samples)	1	ea	$5,000.00				$5,000	$0	$0	$0	$5,000
Air Sampling and Crew (Sampler and RCT)	21	days	$1,000.00		$896.00	$500.00	$21,000	$0	$18,816	$10,500	$50,316
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	21	days			$672.00		$0	$0	$14,112	$0	$14,112
Site Cert Sampling Crew (Sampler and RCT, 3 samples/hr)	0.3	days			$672.00		$0	$0	$202	$0	$202
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	284	ea	$1,100.00				$312,400	$0	$0	$0	$312,400
Fluor Hanford Field Cost							$405,000	$0	$156,298	$10,500	$571,798
Fluor Hanford G & A on Labor Cost @	15%								$23,445		$23,445
Fluor Hanford G & A on Material Cost @	15%							$0			$0
Fluor Hanford G & A on Equipment Cost @	15%									$1,575	$1,575
Fluor Hanford Total Cost							$405,000	$0	$179,742	$12,075	$596,817
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	2.1	mo				$350.00	$0	$0	$0	$735	$735
Field Office Support	2.1	mo		$139.00			$0	$292	$0	$0	$292
Storage Trailer	2.1	mo				$105.00	$0	$0	$0	$221	$221
Equipment Mobilization/Demobilization	14	ea			$100.00	$352.00	$0	$0	$1,400	$4,928	$6,328
Personnel Mobilization/Demobilization	16	ea			$592.00		$0	$0	$9,472	$0	$9,472
Construction Survey	0.64	se	$1,748.00				$1,119	$0	$0	$0	$1,119
Site Utilities, Generator and Oiler	2.1	mo			$6,216.00	$1,394.80	$0	$0	$13,054	$2,929	$15,983
Install Temporary Fence (Blaze Orange)	864	lf		$1.63	$1.16		$0	$1,408	$1,002	$0	$2,411
Haul Road - Gravel, 6" thick	1,760	sy		$6.50	$0.33	$0.53	$0	$11,440	$581	$933	$12,954
Construct Decontamination Pad (See Table D-46)	1	ea		$6,682.86	$5,920.00	$310.56	$0	$6,683	$5,920	$311	$12,913
DECONTAMINATION											
Decontamination Crew (4 Laborers)	16	day			$1,184.00		$0	$0	$18,944	$0	$18,944
Water for Decon Process (1,000 gal/month)	800	gal		$0.20			$0	$160	$0	$0	$160

Table D-45. (Alternative 3), 216-B-58 Crib Representative Site, Capital Cost 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (2 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
EXCAVATION											
Water Truck	21	day			$296.00	$80.00	$0	$0	$6,216	$1,680	$7,896
Hydraulic Excavator (2 for 21 days)	42	day			$296.00	$559.90	$0	$0	$12,432	$23,516	$35,948
Front End Loader	21	day			$296.00	$630.27	$0	$0	$6,216	$13,236	$19,452
SITE RESTORATION											
Front End Loader, On-Site	8	day			$296.00	$630.27	$0	$0	$2,368	$5,042	$7,410
Bulldozer, On-Site	8	day			$296.00	$656.42	$0	$0	$2,368	$5,251	$7,619
Hydraulic Excavator, Pit 30	8	day			$296.00	$559.90	$0	$0	$2,368	$4,479	$6,847
Front End Loader, Pit 30	8	day			$296.00	$630.27	$0	$0	$2,368	$5,042	$7,410
Hauling Pit 30 Material, 5 Trucks, 8 days/each	40	day			$296.00	$398.55	$0	$0	$11,840	$15,942	$27,782
Fine Grading and Seeding (Lime, Fert, and Seed Incl.)	3,117	sy		$0.26	$1.19	$0.18	$0	$810	$3,709	$561	$5,081
Water Truck	8	day			$296.00	$80.00	$0	$0	$2,368	$640	$3,008
MISCELLANEOUS											
Support Personnel	44	day			$1,896.00		$0	$0	$83,424	$0	$83,424
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$1,119	$20,794	$194,050	$85,446	$301,408
Direct Markup on Labor @	25%								$48,512		$48,512
Direct Markup on Materials @	10%							$2,079			$2,079
Direct Markup on Subcontracts @	10%						$112				$112
Construction Contractor G&A @	26.5%						$296	$5,510	$51,423	$22,643	$79,873
Construction Contractor Subtotal							$1,527	$28,383	$293,986	$108,089	$431,984
Fluor Hanford G&A on Construction Contractor Cost @	15%						$229	$4,257	$44,098	$16,213	$64,798
Construction Contractor Total Cost							$1,756	$32,641	$338,083	$124,302	$496,782
Fluor Hanford Total Cost (From Above)							$405,000	$0	$179,742	$12,075	$596,817
Project Subtotal							$406,756	$32,641	$517,826	$136,377	$1,093,599
Contingency on Total Field Cost @	40%										$437,440
TOTAL COST											$1,531,039

Table D-46. (Alternative 3), 216-B-58 Trench Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
Subtotal Direct Cost							$0	$6,683	$5,920	$311	$12,913

NOTE:
Cost of labor to run the decontamination pad provided under Line Item 2.1 (Decontamination Crew) on Table D-45.

Alternative 4, Capping, costs are presented for the representative waste sites in Tables D-47 through D-78.

Table D-47. (Alternative 4), 216-T-26 Crib Representative Site, Capital Cost 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	27	days			$1,720.00		$0	$0	$46,440	$0	$46,440
RCT Decontamination Crew (4 RCTs)	1	days			$1,792.00		$0	$0	$1,792	$0	$1,792
SAMPLING CREWS AND SAMPLING											
Air Sampling Crew (Sampler and RCT)	5.0	days	$1,000.00		$896.00	$500.00	$5,000	$0	$4,480	$2,500	$11,980
Fluor Hanford Field Cost							$5,000	$0	$52,712	$2,500	$60,212
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$7,907	$0	$7,907
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$375	$375
Fluor Hanford Total Cost							**$5,000**	**$0**	**$60,619**	**$2,875**	**$68,494**
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	1.4	mo				$350.00	$0	$0	$0	$490	$490
Field Office Support	1.4	mo		$139.00			$0	$195	$0	$0	$195
Storage Trailer	1.4	mo				$105.00	$0	$0	$0	$147	$147
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	0.39	ac	$1,748.00				$682	$0	$0	$0	$682
Site Utilities, Generator and Oiler	1.4	mo			$6,216.00	$1,394.80	$0	$0	$8,702	$1,953	$10,655

Table D-47. (Alternative 4), 216-T-26 Crib Representative Site, Capital Cost 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (see Table D-50)	1	ea		$836.86	$0.00	$1,360.56	$0	$837	$0	$1,361	$2,197
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler, (add one day for decon)	4	day			$592.00	$1,851.60	$0	$0	$2,368	$7,406	$9,774
Water Truck	3	day			$296.00	$80.00	$0	$0	$888	$240	$1,128
DECONTAMINATION											
Water for Decon Process (1,000 gal/month)	50	gal		$0.20			$0	$10	$0	$0	$10
CAPPING											
Grading Fill, Excavate and load from Pit 30 (1,933 cy)	2	day			$592.00	$1,190.17	$0	$0	$1,184	$2,380	$3,564
Grading Fill, Hauling, 5 Trucks, 2 Days/Each	10	day			$296.00	$398.55	$0	$0	$2,960	$3,986	$6,946
Grading Fill, Front End Loader	2	day			$296.00	$630.27	$0	$0	$592	$1,261	$1,853
Grading Fill, Bulldozer	2	day			$296.00	$656.42	$0	$0	$592	$1,313	$1,905
Grading Fill, Vibratory Roller	2	day			$296.00	$353.98	$0	$0	$592	$708	$1,300
Asphalt Base-course (4" thick)	1,248	sy	$10.70				$13,354	$0	$0	$0	$13,354
Asphalt Paving (6" thick)	1,248	sy	$15.40				$19,219	$0	$0	$0	$19,219
Purchase Lateral Drainage Layer (190 cy)	190	cy		$44.47			$0	$8,449	$0	$0	$8,449
Lateral Drainage Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Lateral Drainage Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Lateral Drainage Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Purchase Gravel Filter Layer (184 cy)	184	cy		$45.67			$0	$8,403	$0	$0	$8,403
Gravel Filter Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Gravel Filter Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Gravel Filter Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Purchase Sand Layer (133 cy)	133	cy		$41.42			$0	$5,509	$0	$0	$5,509
Sand Filter Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Sand Filter Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Sand Filter Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Geotextile (Non-woven)	796	sy		$1.10		$0.06	$0	$876	$0	$48	$923
Compacted Silt Loam, from Pit 30 excavate/load (330 cy)	0.5	day			$592.00	$1,190.17	$0	$0	$296	$595	$891

Table D-47. (Alternative 4), 216-T-26 Crib Representative Site, Capital Cost 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Compacted Silt Loam Hauling, 5 Trucks, .5 Days/Ea	2.5	day			$296.00	$398.55	$0	$0	$740	$996	$1,736
Compacted Silt Loam Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Compacted Silt Loam Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Compacted Silt Loam Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Silt Loam, from Pit 30 excavate/load (360 cy)	0.5	day			$592.00	$1,190.17	$0	$0	$296	$595	$891
Purchase Pea Gravel Layer	40	cy		$55.67			$0	$2,227	$0	$0	$2,227
Silt Loam Hauling, 5 Trucks, .5 Day/Each	2.5	day			$296.00	$398.55	$0	$0	$740	$996	$1,736
Silt Loam/Pea Gravel Layer, Front End Loader (400 cy)	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Silt Loam/Pea Gravel Layer, Bulldozer (400 cy)	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Silt Loam/Pea Gravel Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Purchase Riprap	301	cy		$45.42			$0	$13,671	$0	$0	$13,671
Riprap, Front End Loader	1	day			$296.00	$630.27	$0	$0	$296	$630	$926
Riprap, Hydraulic Excavator	1	day			$296.00	$559.90	$0	$0	$296	$560	$856
Install Cap Monitoirng System	1	ea		$5,000.00			$0	$5,000	$0	$0	$5,000
Water Truck	8	day			$296.00	$80.00	$0	$0	$2,368	$640	$3,008
REVEGETATION											
Fine Grade & Seed Topsoil	771	sy		$0.26	$1.19	$0.18	$0	$200	$917	$139	$1,257
MISCELLANEOUS											
Support Personnel	27	day			$1,896.00		$0	$0	$51,192	$0	$51,192
Labor (4 laborers @ $37/hour)	27	day			$1,184.00		$0	$0	$31,968	$0	$31,968
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000

Construction Contractor Field Cost		$33,255	$73,977	$134,215	$42,678	$284,125
Direct Markup on Labor @	25%	$0	$0	$33,554	$0	$33,554
Direct Markup on Materials @	10%	$0	$7,398	$0	$0	$7,398
Direct Markup on Subcontracts @	10%	$3,325	$0	$0	$0	$3,325
Construction Contractor G&A @	26.5%	$8,812	$19,604	$35,567	$11,310	$75,293
Construction Contractor Subtotal		$45,392	$100,979	$203,336	$53,988	$403,695

Table D-47. (Alternative 4), 216-T-26 Crib Representative Site, Capital Cost 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Fluor Hanford G&A on Construction Contractor Cost @	15%						$6,809	$15,147	$30,500	$8,098	$60,554
Construction Contractor Total Cost							$52,201	$116,126	$233,836	$62,086	$464,249
Fluor Hanford Total Cost (From Above)							$5,000	$0	$60,619	$2,875	$68,494
Project Subtotal							$57,201	$116,126	$294,455	$64,961	$532,743
Contingency on Field Costs @	20%										$106,549
TOTAL COST											**$639,291**

Table D-48. (Alternative 4), 216-T-26 Crib Representative Site, Periodic Cost 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$1,792		Cost is based on 16 hrs for every 50,000 sf (area = 14,232 ft^2) @ $112/hr.
Radiation Survey of Surface Soil	$3,000		Cost is based on $1,000 for every 5,000 square feet (area = 14,232 ft^2)
Cover Maintenance	$7,161		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.
TOTALS	$11,953	$20,000	

Table D-49. (Alternative 4). 216-T-26 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$639,291		$639,291	1.0000	$639,291
1		$11,953	$11,953	0.9690	$11,582
2		$11,953	$11,953	0.9389	$11,222
3		$11,953	$11,953	0.9098	$10,875
4		$11,953	$11,953	0.8816	$10,538
5		$31,953	$31,953	0.8543	$27,297
6		$11,953	$11,953	0.8278	$9,894
7		$11,953	$11,953	0.8021	$9,587
8		$11,953	$11,953	0.7773	$9,291
9		$11,953	$11,953	0.7532	$9,003
10		$31,953	$31,953	0.7298	$23,319
11		$11,953	$11,953	0.7072	$8,453
12		$11,953	$11,953	0.6852	$8,190
13		$11,953	$11,953	0.6640	$7,937
14		$11,953	$11,953	0.6434	$7,690
15		$31,953	$31,953	0.6235	$19,923
16		$11,953	$11,953	0.6041	$7,221
17		$11,953	$11,953	0.5854	$6,997
18		$11,953	$11,953	0.5672	$6,780
19		$11,953	$11,953	0.5496	$6,569
20		$31,953	$31,953	0.5326	$17,018
21		$11,953	$11,953	0.5161	$6,169
22		$11,953	$11,953	0.5001	$5,978
23		$11,953	$11,953	0.4846	$5,792
24		$11,953	$11,953	0.4696	$5,613
25		$31,953	$31,953	0.4550	$14,538
26		$11,953	$11,953	0.4409	$5,270
27		$11,953	$11,953	0.4272	$5,106
28		$11,953	$11,953	0.4140	$4,948
29		$11,953	$11,953	0.4011	$4,794
30		$31,953	$31,953	0.3887	$12,420
31		$11,953	$11,953	0.3766	$4,501
32		$11,953	$11,953	0.3650	$4,363
33		$11,953	$11,953	0.3536	$4,226
34		$11,953	$11,953	0.3427	$4,096
35		$31,953	$31,953	0.3321	$10,612
36		$11,953	$11,953	0.3218	$3,846
37		$11,953	$11,953	0.3118	$3,727
38		$11,953	$11,953	0.3021	$3,611
39		$11,953	$11,953	0.2927	$3,499
40		$31,953	$31,953	0.2837	$9,065
41		$11,953	$11,953	0.2749	$3,286

Table D-49. (Alternative 4). 216-T-26 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
42		$11,953	$11,953	0.2664	$3,184
43		$11,953	$11,953	0.2581	$3,085
44		$11,953	$11,953	0.2501	$2,989
45		$31,953	$31,953	0.2423	$7,742
46		$11,953	$11,953	0.2348	$2,807
47		$11,953	$11,953	0.2275	$2,719
48		$11,953	$11,953	0.2205	$2,636
49		$11,953	$11,953	0.2136	$2,553
50		$31,953	$31,953	0.2070	$6,614
51		$11,953	$11,953	0.2006	$2,398
52		$11,953	$11,953	0.1944	$2,324
53		$11,953	$11,953	0.1884	$2,252
54		$11,953	$11,953	0.1825	$2,181
55		$31,953	$31,953	0.1769	$5,652
56		$11,953	$11,953	0.1714	$2,049
57		$11,953	$11,953	0.1661	$1,985
58		$11,953	$11,953	0.1609	$1,923
59		$11,953	$11,953	0.1559	$1,863
60		$31,953	$31,953	0.1511	$4,828
61		$11,953	$11,953	0.1464	$1,750
62		$11,953	$11,953	0.1419	$1,696
63		$11,953	$11,953	0.1375	$1,644
64		$11,953	$11,953	0.1332	$1,592
65		$31,953	$31,953	0.1291	$4,125
66		$11,953	$11,953	0.1251	$1,495
67		$11,953	$11,953	0.1212	$1,449
68		$11,953	$11,953	0.1174	$1,403
69		$11,953	$11,953	0.1138	$1,360
70		$31,953	$31,953	0.1103	$3,524
71		$11,953	$11,953	0.1068	$1,277
72		$11,953	$11,953	0.1035	$1,237
73		$11,953	$11,953	0.1003	$1,199
74		$11,953	$11,953	0.0972	$1,162
75		$31,953	$31,953	0.0942	$3,010
76		$11,953	$11,953	0.0913	$1,091
77		$11,953	$11,953	0.0884	$1,057
78		$11,953	$11,953	0.0857	$1,024
79		$11,953	$11,953	0.0830	$992
80		$31,953	$31,953	0.0805	$2,572
81		$11,953	$11,953	0.0780	$932
82		$11,953	$11,953	0.0756	$904
83		$11,953	$11,953	0.0732	$875
84		$11,953	$11,953	0.0709	$847
85		$31,953	$31,953	0.0687	$2,195

Table D-49. (Alternative 4). 216-T-26 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
86		$11,953	$11,953	0.0666	$796
87		$11,953	$11,953	0.0645	$771
88		$11,953	$11,953	0.0625	$747
89		$11,953	$11,953	0.0606	$724
90		$31,953	$31,953	0.0587	$1,876
91		$11,953	$11,953	0.0569	$680
92		$11,953	$11,953	0.0551	$659
93		$11,953	$11,953	0.0534	$638
94		$11,953	$11,953	0.0518	$619
95		$31,953	$31,953	0.0502	$1,604
96		$11,953	$11,953	0.0486	$581
97		$11,953	$11,953	0.0471	$563
98		$11,953	$11,953	0.0456	$545
99		$11,953	$11,953	0.0442	$528
100		$31,953	$31,953	0.0429	$1,371
101		$11,953	$11,953	0.0415	$496
102		$11,953	$11,953	0.0402	$481
103		$11,953	$11,953	0.0390	$466
104		$11,953	$11,953	0.0378	$452
105		$31,953	$31,953	0.0366	$1,169
106		$11,953	$11,953	0.0355	$424
107		$11,953	$11,953	0.0344	$411
108		$11,953	$11,953	0.0333	$398
109		$11,953	$11,953	0.0323	$386
110		$31,953	$31,953	0.0313	$1,000
111		$11,953	$11,953	0.0303	$362
112		$11,953	$11,953	0.0294	$351
113		$11,953	$11,953	0.0285	$341
114		$11,953	$11,953	0.0276	$330
115		$31,953	$31,953	0.0267	$853
116		$11,953	$11,953	0.0259	$310
117		$11,953	$11,953	0.0251	$300
118		$11,953	$11,953	0.0243	$290
119		$11,953	$11,953	0.0236	$282
120		$31,953	$31,953	0.0228	$729
121		$11,953	$11,953	0.0221	$264
122		$11,953	$11,953	0.0214	$256
123		$11,953	$11,953	0.0208	$249
124		$11,953	$11,953	0.0201	$240
125		$31,953	$31,953	0.0195	$623
126		$11,953	$11,953	0.0189	$226
127		$11,953	$11,953	0.0183	$219
128		$11,953	$11,953	0.0177	$212
129		$11,953	$11,953	0.0172	$206

Table D-49. (Alternative 4). 216-T-26 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
130		$31,953	$31,953	0.0167	$534
131		$11,953	$11,953	0.0161	$192
132		$11,953	$11,953	0.0156	$186
133		$11,953	$11,953	0.0152	$182
134		$11,953	$11,953	0.0147	$176
135		$31,953	$31,953	0.0142	$454
136		$11,953	$11,953	0.0138	$165
137		$11,953	$11,953	0.0134	$160
138		$11,953	$11,953	0.0129	$154
139		$11,953	$11,953	0.0125	$149
140		$31,953	$31,953	0.0122	$390
141		$11,953	$11,953	0.0118	$141
142		$11,953	$11,953	0.0114	$136
143		$11,953	$11,953	0.0111	$133
144		$11,953	$11,953	0.0107	$128
145		$31,953	$31,953	0.0104	$332
146		$11,953	$11,953	0.0101	$121
147		$11,953	$11,953	0.0098	$117
148		$11,953	$11,953	0.0094	$112
149		$11,953	$11,953	0.0092	$110
150		$31,953	$31,953	0.0089	$284
				TOTAL PRESENT WORTH	$1,125,720

Table D-50. (Alternative 4), 216-T-26 Crib Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Cover Maintenance (Purchase, Deliver, and Place Topsoil) Annual Cost											
Purchase Pea Gravel (includes purchase and delivery)	10	cy		$55.67			$0	$557	$0	$0	$557
Silt Loam, from Pit 30 excavate/load (90 cy)	0.5	day			$296.00	$559.90	$0	$0	$148	$280	$428
Silt Loam Hauling, 2 Trucks, .5 Day/Each (90 cy)	1	day			$296.00	$398.55	$0	$0	$296	$399	$695
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	100	cy		$14.00	$10.00	$5.68	$0	$1,400	$1,000	$568	$2,968
Fine Grading and seeding, incl. lime, fert, and seed	158	sy		$0.26	$1.19	$0.18	$0	$41	$188	$28	$258
Oversight (1 day x 8 hr/day)	8	hrs			$56.00		$0	$0	$448	$0	$448
						Total Cost	$0	$1,998	$2,480	$2,683	$7,161
Decontamination Pad Construction											
Decon Pad - Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Decon Pads -Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
Decon Pads - 3" SCH 80 PVC Pipe	5	lf		$1.63		$0.00	$0	$8	$0	$0	$8
Decon Pads - Sump Pump (2 for 1.4 months)	2.8	mo				$375.00	$0	$0	$0	$1,050	$1,050
Decon Pads - Sump Construction (1)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
						Total Cost	$0	$837	$0	$1,361	$2,197

Note:

1. The decontamination pad cost for Alternative 4 is less expensive than the decontamination pad for Alternative 3 because the Alternative 4 decontamination pad usage is expected to be only 1 day, where for Alternative 3 decontamination pad is expected to be used day after day for long periods of time.

2. Costs of labor to construct and operate the decontamination pad presented on Table D-47.

Table D-51. (Alternative 4), 216-B-46 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	126	days			$1,720.00		$0	$0	$216,720	$0	$216,720
RCT Decontamination Crew (4 RCTs)	1	days			$1,792.00		$0	$0	$1,792	$0	$1,792
SAMPLING CREWS AND SAMPLING											
Air Sampling Crew (Sampler and RCT)	34	days	$1,000.00		$896.00	$500.00	$34,000	$0	$30,464	$17,000	$81,464
Fluor Hanford Field Cost							$34,000	$0	$248,976	$17,000	$299,976
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$37,346	$0	$37,346
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$2,550	$2,550
Fluor Hanford Total Cost							$34,000	$0	$286,322	$19,550	$339,872
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	6	mo				$350.00	$0	$0	$0	$2,100	$2,100
Field Office Support	6	mo		$139.00			$0	$834	$0	$0	$834
Storage Trailer	6	mo				$105.00	$0	$0	$0	$630	$630
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	3.15	ac	$1,748.00				$5,506	$0	$0	$0	$5,506
Site Utilities, Generator and Oiler	6	mo			$6,216.00	$1,394.80	$0	$0	$37,296	$8,369	$45,665
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (see Table D-54)	1	ea		$836.86	$0.00	$1,360.56	$0	$837	$0	$1,361	$2,197

Table D-51. (Alternative 4), 216-B-46 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler, (add one day for decon)	24	day			$592.00	$1,851.60	$0	$0	$14,208	$44,438	$58,646
Water Truck	23	day			$296.00	$80.00	$0	$0	$6,808	$1,840	$8,648
DECONTAMINATION											
Water for Decon Process (1,000 gal/month)	50	gal		$0.20			$0	$10	$0	$0	$10
CAPPING											
Grading Fill, Excavate and load from Pit 30 (14,921 cy)	12	day			$592.00	$1,190.17	$0	$0	$7,104	$14,282	$21,386
Grading Fill, Hauling, 5 Trucks, 12 Days/Each	60	day			$296.00	$398.55	$0	$0	$17,760	$23,913	$41,673
Grading Fill, Front End Loader	12	day			$296.00	$630.27	$0	$0	$3,552	$7,563	$11,115
Grading Fill, Bulldozer	12	day			$296.00	$656.42	$0	$0	$3,552	$7,877	$11,429
Grading Fill, Vibratory Roller	12	day			$296.00	$353.98	$0	$0	$3,552	$4,248	$7,800
Asphalt Base-course (4" thick)	11,726	sy	$10.70				$125,468	$0	$0	$0	$125,468
Asphalt Paving (6" thick)	11,726	sy	$15.40				$180,580	$0	$0	$0	$180,580
Purchase Lateral Drainage Layer (1,902 cy)	1,902	cy		$44.47			$0	$84,582	$0	$0	$84,582
Lateral Drainage Layer, Front End Loader	1.5	day			$296.00	$630.27	$0	$0	$444	$945	$1,389
Lateral Drainage Layer, Bulldozer	1.5	day			$296.00	$656.42	$0	$0	$444	$985	$1,429
Lateral Drainage Layer, Vibratory Roller	1.5	day			$296.00	$353.98	$0	$0	$444	$531	$975
Purchase Gravel Filter Layer (1,878 cy)	1,878	cy		$45.67			$0	$85,768	$0	$0	$85,768
Gravel Filter Layer, Front End Loader	1.5	day			$296.00	$630.27	$0	$0	$444	$945	$1,389
Gravel Filter Layer, Bulldozer	1.5	day			$296.00	$656.42	$0	$0	$444	$985	$1,429
Gravel Filter Layer, Vibratory Roller	1.5	day			$296.00	$353.98	$0	$0	$444	$531	$975
Purchase Sand Layer (1,704 cy)	1,704	cy		$41.42			$0	$70,580	$0	$0	$70,580
Sand Filter Layer, Front End Loader	1.5	day			$296.00	$630.27	$0	$0	$444	$945	$1,389
Sand Filter Layer, Bulldozer	1.5	day			$296.00	$656.42	$0	$0	$444	$985	$1,429
Sand Filter Layer, Vibratory Roller	1.5	day			$296.00	$353.98	$0	$0	$444	$531	$975
Geotextile (Non-woven)	10,266	sy		$1.10		$0.06	$0	$11,293	$0	$616	$11,909
Compacted Silt Loam, from Pit 30 excavate/load (5,250 cy)	4	day			$592.00	$1,190.17	$0	$0	$2,368	$4,761	$7,129
Compacted Silt Loam Hauling, 5 Trucks, 4 Days/Ea	20.0	day			$296.00	$398.55	$0	$0	$5,920	$7,971	$13,891
Compacted Silt Loam Layer, Front End Loader	4	day			$296.00	$630.27	$0	$0	$1,184	$2,521	$3,705
Compacted Silt Loam Layer, Bulldozer	4	day			$296.00	$656.42	$0	$0	$1,184	$2,626	$3,810

Table D-51. (Alternative 4), 216-B-46 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Compacted Silt Loam Layer, Vibratory Roller	4	day			$296.00	$353.98	$0	$0	$1,184	$1,416	$2,600
Silt Loam, from Pit 30 excavate/load (4,948 cy)	4	day			$592.00	$1,190.17	$0	$0	$2,368	$4,761	$7,129
Purchase Pea Gravel Layer	550	cy		$55.67			$0	$30,619	$0	$0	$30,619
Silt Loam Hauling, 5 Trucks, 4 Day/Each	20	day			$296.00	$398.55	$0	$0	$5,920	$7,971	$13,891
Silt Loam/Pea Gravel Layer, Front End Loader (5,498 cy)	4	day			$296.00	$630.27	$0	$0	$1,184	$2,521	$3,705
Silt Loam/Pea Gravel Layer, Bulldozer (5,498 cy)	4	day			$296.00	$656.42	$0	$0	$1,184	$2,626	$3,810
Silt Loam/Pea Gravel Layer, Vibratory Roller	4	day			$296.00	$353.98	$0	$0	$1,184	$1,416	$2,600
Purchase Riprap	970	cy		$45.42			$0	$44,057	$0	$0	$44,057
Riprap, Front End Loader	10	day			$296.00	$630.27	$0	$0	$2,960	$6,303	$9,263
Riprap, Hydraulic Excavator	10	day			$296.00	$559.90	$0	$0	$2,960	$5,599	$8,559
Install Cap Monitoirng System	1	ea		$5,000.00			$0	$5,000	$0	$0	$5,000
Water Truck	78	day			$296.00	$80.00	$0	$0	$23,088	$6,240	$29,328
REVEGETATION											
Fine Grade & Seed Topsoil	10,121	sy		$0.26	$1.19	$0.18	$0	$2,631	$12,044	$1,822	$16,497
MISCELLANEOUS											
Support Personnel	126	day			$1,896.00		$0	$0	$238,896	$0	$238,896
Labor (4 laborers @ $37/hour)	126	day			$1,184.00		$0	$0	$149,184	$0	$149,184
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$311,555	$364,811	$575,647	$195,305	$1,447,318
Direct Markup on Labor @	25%						$0	$0	$143,912	$0	$143,912
Direct Markup on Materials @	10%						$0	$36,481	$0	$0	$36,481
Direct Markup on Subcontracts @	10%						$31,155	$0	$0	$0	$31,155
Construction Contractor G&A @	26.5%						$82,562	$96,675	$152,546	$51,756	$383,539
Construction Contractor Subtotal							$425,272	$497,967	$872,105	$247,061	$2,042,405
Fluor Hanford G&A on Construction Contractor Cost @	15%						$63,791	$74,695	$130,816	$37,059	$306,361

Table D-51. (Alternative 4), 216-B-46 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Construction Contractor Total Cost							$489,063	$572,662	$1,002,921	$284,120	$2,348,766
Fluor Hanford Total Cost (From Above)							$34,000	$0	$286,322	$19,550	$339,872
Project Subtotal							$523,063	$572,662	$1,289,243	$303,670	$2,688,638
Contingency on Field Costs @	20%										$537,728
TOTAL COST											$3,226,366

Table D-52. (Alternative 4), 216-B-46 Crib Representative Site, Periodic Cost200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$5,376		Cost is based on 16 hrs. for every 50,000 sf (area = 114,514 ft^2) @ $112/hr
Radiation Survey of Surface Soil	$23,000		Cost is based on $1,000 for every 5,000 square feet
Cover Maintenance	$42,816		Cost includes the purchas of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.
TOTALS	**$71,192**	**$20,000**	

Table D-53. (Alternative 4), 216-B-46 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$3,226,366		$3,226,366	1.0000	$3,226,366
1		$71,192	$71,192	0.9690	$68,985
2		$71,192	$71,192	0.9389	$66,842
3		$71,192	$71,192	0.9098	$64,771
4		$71,192	$71,192	0.8816	$62,763
5		$91,192	$91,192	0.8543	$77,906
6		$71,192	$71,192	0.8278	$58,933
7		$71,192	$71,192	0.8021	$57,103
8		$71,192	$71,192	0.7773	$55,338
9		$71,192	$71,192	0.7532	$53,622
10		$91,192	$91,192	0.7298	$66,552
11		$71,192	$71,192	0.7072	$50,347
12		$71,192	$71,192	0.6852	$48,781
13		$71,192	$71,192	0.6640	$47,272
14		$71,192	$71,192	0.6434	$45,805
15		$91,192	$91,192	0.6235	$56,858
16		$71,192	$71,192	0.6041	$43,007
17		$71,192	$71,192	0.5854	$41,676
18		$71,192	$71,192	0.5672	$40,380
19		$71,192	$71,192	0.5496	$39,127
20		$91,192	$91,192	0.5326	$48,569
21		$71,192	$71,192	0.5161	$36,742
22		$71,192	$71,192	0.5001	$35,603
23		$71,192	$71,192	0.4846	$34,500
24		$71,192	$71,192	0.4696	$33,432
25		$91,192	$91,192	0.4550	$41,493
26		$71,192	$71,192	0.4409	$31,389
27		$71,192	$71,192	0.4272	$30,413
28		$71,192	$71,192	0.4140	$29,474
29		$71,192	$71,192	0.4011	$28,555
30		$91,192	$91,192	0.3887	$35,446
31		$71,192	$71,192	0.3766	$26,811
32		$71,192	$71,192	0.3650	$25,985
33		$71,192	$71,192	0.3536	$25,174
34		$71,192	$71,192	0.3427	$24,398
35		$91,192	$91,192	0.3321	$30,285
36		$71,192	$71,192	0.3218	$22,910
37		$71,192	$71,192	0.3118	$22,198
38		$71,192	$71,192	0.3021	$21,507
39		$71,192	$71,192	0.2927	$20,838
40		$91,192	$91,192	0.2837	$25,871

Table D-53. (Alternative 4), 216-B-46 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

41		$71,192	$71,192	0.2749	$19,571
42		$71,192	$71,192	0.2664	$18,966
43		$71,192	$71,192	0.2581	$18,375
44		$71,192	$71,192	0.2501	$17,805
45		$91,192	$91,192	0.2423	$22,096
46		$71,192	$71,192	0.2348	$16,716
47		$71,192	$71,192	0.2275	$16,196
48		$71,192	$71,192	0.2205	$15,698
49		$71,192	$71,192	0.2136	$15,207
50		$91,192	$91,192	0.2070	$18,877
51		$71,192	$71,192	0.2006	$14,281
52		$71,192	$71,192	0.1944	$13,840
53		$71,192	$71,192	0.1884	$13,413
54		$71,192	$71,192	0.1825	$12,993
55		$91,192	$91,192	0.1769	$16,132
56		$71,192	$71,192	0.1714	$12,202
57		$71,192	$71,192	0.1661	$11,825
58		$71,192	$71,192	0.1609	$11,455
59		$71,192	$71,192	0.1559	$11,099
60		$91,192	$91,192	0.1511	$13,779
61		$71,192	$71,192	0.1464	$10,423
62		$71,192	$71,192	0.1419	$10,102
63		$71,192	$71,192	0.1375	$9,789
64		$71,192	$71,192	0.1332	$9,483
65		$91,192	$91,192	0.1291	$11,773
66		$71,192	$71,192	0.1251	$8,906
67		$71,192	$71,192	0.1212	$8,629
68		$71,192	$71,192	0.1174	$8,358
69		$71,192	$71,192	0.1138	$8,102
70		$91,192	$91,192	0.1103	$10,059
71		$71,192	$71,192	0.1068	$7,603
72		$71,192	$71,192	0.1035	$7,368
73		$71,192	$71,192	0.1003	$7,141
74		$71,192	$71,192	0.0972	$6,920
75		$91,192	$91,192	0.0942	$8,590
76		$71,192	$71,192	0.0913	$6,500
77		$71,192	$71,192	0.0884	$6,293
78		$71,192	$71,192	0.0857	$6,101
79		$71,192	$71,192	0.0830	$5,909
80		$91,192	$91,192	0.0805	$7,341
81		$71,192	$71,192	0.0780	$5,553
82		$71,192	$71,192	0.0756	$5,382
83		$71,192	$71,192	0.0732	$5,211
84		$71,192	$71,192	0.0709	$5,048
85		$91,192	$91,192	0.0687	$6,265

Table D-53. (Alternative 4), 216-B-46 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

86		$71,192	$71,192	0.0666	$4,741
87		$71,192	$71,192	0.0645	$4,592
88		$71,192	$71,192	0.0625	$4,450
89		$71,192	$71,192	0.0606	$4,314
90		$91,192	$91,192	0.0587	$5,353
91		$71,192	$71,192	0.0569	$4,051
92		$71,192	$71,192	0.0551	$3,923
93		$71,192	$71,192	0.0534	$3,802
94		$71,192	$71,192	0.0518	$3,688
95		$91,192	$91,192	0.0502	$4,578
96		$71,192	$71,192	0.0486	$3,460
97		$71,192	$71,192	0.0471	$3,353
98		$71,192	$71,192	0.0456	$3,246
99		$71,192	$71,192	0.0442	$3,147
100		$91,192	$91,192	0.0429	$3,912
101		$71,192	$71,192	0.0415	$2,954
102		$71,192	$71,192	0.0402	$2,862
103		$71,192	$71,192	0.0390	$2,777
104		$71,192	$71,192	0.0378	$2,691
105		$91,192	$91,192	0.0366	$3,338
106		$71,192	$71,192	0.0355	$2,527
107		$71,192	$71,192	0.0344	$2,449
108		$71,192	$71,192	0.0333	$2,371
109		$71,192	$71,192	0.0323	$2,300
110		$91,192	$91,192	0.0313	$2,854
111		$71,192	$71,192	0.0303	$2,157
112		$71,192	$71,192	0.0294	$2,093
113		$71,192	$71,192	0.0285	$2,029
114		$71,192	$71,192	0.0276	$1,965
115		$91,192	$91,192	0.0267	$2,435
116		$71,192	$71,192	0.0259	$1,844
117		$71,192	$71,192	0.0251	$1,787
118		$71,192	$71,192	0.0243	$1,730
119		$71,192	$71,192	0.0236	$1,680
120		$91,192	$91,192	0.0228	$2,079
121		$71,192	$71,192	0.0221	$1,573
122		$71,192	$71,192	0.0214	$1,524
123		$71,192	$71,192	0.0208	$1,481
124		$71,192	$71,192	0.0201	$1,431
125		$91,192	$91,192	0.0195	$1,778
126		$71,192	$71,192	0.0189	$1,346
127		$71,192	$71,192	0.0183	$1,303
128		$71,192	$71,192	0.0177	$1,260
129		$71,192	$71,192	0.0172	$1,225
130		$91,192	$91,192	0.0167	$1,523

Table D-53. (Alternative 4), 216-B-46 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

131		$71,192	$71,192	0.0161	$1,146
132		$71,192	$71,192	0.0156	$1,111
133		$71,192	$71,192	0.0152	$1,082
134		$71,192	$71,192	0.0147	$1,047
135		$91,192	$91,192	0.0142	$1,295
136		$71,192	$71,192	0.0138	$982
137		$71,192	$71,192	0.0134	$954
138		$71,192	$71,192	0.0129	$918
139		$71,192	$71,192	0.0125	$890
140		$91,192	$91,192	0.0122	$1,113
141		$71,192	$71,192	0.0118	$840
142		$71,192	$71,192	0.0114	$812
143		$71,192	$71,192	0.0111	$790
144		$71,192	$71,192	0.0107	$762
145		$91,192	$91,192	0.0104	$948
146		$71,192	$71,192	0.0101	$719
147		$71,192	$71,192	0.0098	$698
148		$71,192	$71,192	0.0094	$669
149		$71,192	$71,192	0.0092	$655
150		$91,192	$91,192	0.0089	$812
				TOTAL PRESENT WORTH	$5,547,617

Table D-54. (Alternative 4), 216-B-46 Crib Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Cover Maintenance (Purchase, Deliver, and Place Topsoil) Annual Cost											
Purchase Pea Gravel (includes purchase and delivery)	85	cy		$55.67			$0	$4,732	$0	$0	$4,732
Silt Loam, from Pit 30 excavate/load (765 cy)	3.0	day			$296.00	$559.90	$0	$0	$888	$1,680	$2,568
Silt Loam Hauling, 2 Trucks, 3 Days/Each	6	day			$296.00	$398.55	$0	$0	$1,776	$2,391	$4,167
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	850	cy		$14.00	$10.00	$5.68	$0	$11,900	$8,500	$4,828	$25,228
Fine Grading and seeding, incl. lime, fert, and seed	1,272	sy		$0.26	$1.19	$0.18	$0	$331	$1,514	$229	$2,073
Oversight (5 days x 8 hrs/day)	40	hrs			$56.00		$0	$0	$2,240	$0	$2,240
					Total Cost		$0	$16,963	$15,318	$10,536	$42,816
Decontamination Pad Construction											
Decon Pad - Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Decon Pads -Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
Decon Pads - 3" SCH 80 PVC Pipe	5	lf		$1.63		$0.00	$0	$8	$0	$0	$8
Decon Pads - Sump Pump (2 for 1.4 months)	2.7	mo				$375.00	$0	$0	$0	$1,013	$1,013
Decon Pads - Sump Construction (1)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
					Total Cost		$0	$837	$0	$1,323	$2,160

Note:

1. The decontamination pad cost for Alternative 4 is less expensive than the decontamination pad for Alternative 3 because the Alternative 4 decontamination pad usage is expected to be only 1 day, where for Alternative 3 decontamination pad is expected to be used day after day for long periods of time.

2. Costs of labor to construct and operate the decontamination pad presented on Table D-51.

Table D-55. (Alternative 4), 216-B-5 Reverse Well Representative Site, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	28.5	days			$1,720.00		$0	$0	$49,020	$0	$49,020
RCT Decontamination Crew (4 RCTs)	1	days			$1,792.00		$0	$0	$1,792	$0	$1,792
SAMPLING CREWS AND SAMPLING											
Air Sampling Crew (Sampler and RCT)	5	days	$1,000.00		$896.00	$500.00	$5,000	$0	$4,480	$2,500	$11,980
Fluor Hanford Field Cost							$5,000	$0	$55,292	$2,500	$62,792
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$8,294	$0	$8,294
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$375	$375
Fluor Hanford Total Cost							$5,000	$0	$63,586	$2,875	$71,461
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	1.4	mo				$350.00	$0	$0	$0	$490	$490
Field Office Support	1.4	mo		$139.00			$0	$195	$0	$0	$195
Storage Trailer	1.4	mo				$105.00	$0	$0	$0	$147	$147
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	0.53	ac	$1,748.00				$926	$0	$0	$0	$926
Site Utilities, Generator and Oiler	1.4	mo			$6,216.00	$1,394.80	$0	$0	$8,702	$1,953	$10,655
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (see Table D-58)	1	ea		$836.86	$0.00	$1,360.56	$0	$837	$0	$1,361	$2,197

Table D-55. (Alternative 4), 216-B-5 Reverse Well Representative Site, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler, (add one day for decon)	5	day			$592.00	$1,851.60	$0	$0	$2,960	$9,258	$12,218
Water Truck	4	day			$296.00	$80.00	$0	$0	$1,184	$320	$1,504
DECONTAMINATION											
Water for Decon Process (1,000 gal/month)	50	gal		$0.20			$0	$10	$0	$0	$10
CAPPING											
Grading Fill, Excavate/Load from Pit 30 (1,020 cy)	1	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Foundation Soil, 5 Trucks, 1 Days/Each	5	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Foundation Soil, Front End Loader	1	day			$592.00	$630.27	$0	$0	$592	$630	$1,222
Foundation Soil, Bulldozer	1	day			$592.00	$656.42	$0	$0	$592	$656	$1,248
Foundation Soil, Vibratory Roller	1	day			$592.00	$353.98	$0	$0	$592	$354	$946
Asphalt Top Course (4" thick)	1,955	sy	$10.70				$20,919	$0	$0	$0	$20,919
Asphalt Paving (6" thick)	1,955	sy	$15.40				$30,107	$0	$0	$0	$30,107
Purchase Drainage Gravel Cushion (600 cy)	600	cy		$44.47			$0	$26,682	$0	$0	$26,682
Drainage Gravel Cushion Layer, Front End Loader	0.5	day			$592.00	$630.27	$0	$0	$296	$315	$611
Drainage Gravel Cushion Layer, Bulldozer	0.5	day			$592.00	$656.42	$0	$0	$296	$328	$624
Drainage Gravel Cushion Layer, Vibratory Roller	0.5	day			$592.00	$353.98	$0	$0	$296	$177	$473
Purchase Riprap	4,030	cy		$45.42			$0	$183,043	$0	$0	$183,043
Riprap, Front End Loader	3.5	day			$592.00	$630.27	$0	$0	$2,072	$2,206	$4,278
Riprap, Bulldozer	3.5	day			$592.00	$656.42	$0	$0	$2,072	$2,297	$4,369
Riprap, Vibratory Roller	3.5	day			$592.00	$353.98	$0	$0	$2,072	$1,239	$3,311
Purchase Gravel Filter Material (130 cy)	130	cy		$44.47			$0	$5,781	$0	$0	$5,781
Gravel Filter Layer, Front End Loader	0.5	day			$592.00	$630.27	$0	$0	$296	$315	$611
Gravel Filter Layer, Bulldozer	0.5	day			$592.00	$656.42	$0	$0	$296	$328	$624
Gravel Filter Layer, Vibratory Roller	0.5	day			$592.00	$353.98	$0	$0	$296	$177	$473
Purchase Sand Layer (70 cy)	70	cy		$41.42			$0	$2,899	$0	$0	$2,899
Sand Filter Layer, Front End Loader	0.5	day			$592.00	$630.27	$0	$0	$296	$315	$611
Sand Filter Layer, Bulldozer	0.5	day			$592.00	$656.42	$0	$0	$296	$328	$624
Sand Filter Layer, Vibratory Roller	0.5	day			$592.00	$353.98	$0	$0	$296	$177	$473
Compacted Silt Loam, from Pit 30 excavate/load (350 cy)	0.5	day			$592.00	$1,190.17	$0	$0	$296	$595	$891

Table D-55. (Alternative 4), 216-B-5 Reverse Well Representative Site, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Compacted Silt Loam Haul, 5 Trucks, .5 Days/Each	2.5	day			$296.00	$398.55	$0	$0	$740	$996	$1,736
Compacted Silt Loam Layer, Front End Loader	0.5	day			$592.00	$630.27	$0	$0	$296	$315	$611
Compacted Silt Loam Layer, Bulldozer	0.5	day			$592.00	$656.42	$0	$0	$296	$328	$624
Compacted Silt Loam Layer, Vibratory Roller	0.5	day			$592.00	$353.98	$0	$0	$296	$177	$473
Silt Loam, from Pit 30 excavate/load (486 cy)	0.5	day			$592.00	$1,190.17	$0	$0	$296	$595	$891
Purchase Pea Gravel Layer	54	cy		$55.67			$0	$3,006	$0	$0	$3,006
Silt Loam Hauling, 5 Trucks, 1 Day/Each (486 cy)	2.5	day			$296.00	$398.55	$0	$0	$740	$996	$1,736
Silt Loam/Pea Gravel Layer, Front End Loader (540 cy)	0.5	day			$592.00	$630.27	$0	$0	$296	$315	$611
Silt Loam/Pea Gravel Layer, Bulldozer	0.5	day			$592.00	$656.42	$0	$0	$296	$328	$624
Silt Loam/Pea Gravel Layer, Vibratory Roller	0.5	day			$592.00	$353.98	$0	$0	$296	$177	$473
Install Cap Monitoing System	1	ea		$5,000.00			$0	$5,000	$0	$0	$5,000
Water Truck	8.5	day			$296.00	$80.00	$0	$0	$2,516	$680	$3,196
REVEGETATION											
Fine Grade & Seed Topsoil	586	sy		$0.26	$1.19	$0.18	$0	$152	$697	$105	$955
MISCELLANEOUS											
Support Personnel	28.5	day			$1,896.00		$0	$0	$54,036	$0	$54,036
Labor (4 laborers @ $37/hour)	28.5	day			$1,184.00		$0	$0	$33,744	$0	$33,744
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000

Construction Contractor Field Cost							$51,952	$256,205	$145,423	$44,297	$497,877
Direct Markup on Labor @	25%						$0	$0	$36,356	$0	$36,356
Direct Markup on Materials @	10%						$0	$25,621	$0	$0	$25,621
Direct Markup on Subcontracts @	10%						$5,195	$0	$0	$0	$5,195
Construction Contractor G&A @	26.5%						$13,767	$67,894	$38,537	$11,739	$131,937
Construction Contractor Subtotal							$70,914	$349,720	$220,315	$56,036	$696,986
Fluor Hanford G&A on Construction Contractor Cost @	15%						$10,637	$52,458	$33,047	$8,405	$104,548
Construction Contractor Total Cost							$81,552	$402,178	$253,363	$64,441	$801,534

Table D-55. (Alternative 4), 216-B-5 Reverse Well Representative Site, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Fluor Hanford Total Cost (From Above)	$5,000	$0	$63,586	$2,875	$71,461
Project Subtotal	$86,552	$402,178	$316,949	$67,316	$872,995
Contingency on Field Costs @ 20%					$174,599
TOTAL COST					$1,047,593

Table D-56. (Alternative 4), 216-B-5 Reverse Well Representative Site, Periodic Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$1,792		Cost is based on 16 hrs. for every 50,000 sf (area = 19,226 ft^2) @ $112/hr
Radiation Survey of Surface Soil	$4,000		Cost is based on $1,000 for every 5,000 square feet
Cover Maintenance	$9,149		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.
TOTALS	$14,941	$20,000	

Table D-57. (Alternative 4), 216-B-5 Reverse Well Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$1,047,593		$1,047,593	1.0000	$1,047,593
1		$14,941	$14,941	0.9690	$14,478
2		$14,941	$14,941	0.9389	$14,028
3		$14,941	$14,941	0.9098	$13,594
4		$14,941	$14,941	0.8816	$13,172
5		$34,941	$34,941	0.8543	$29,850
6		$14,941	$14,941	0.8278	$12,368
7		$14,941	$14,941	0.8021	$11,984
8		$14,941	$14,941	0.7773	$11,614
9		$14,941	$14,941	0.7532	$11,254
10		$34,941	$34,941	0.7298	$25,500
11		$14,941	$14,941	0.7072	$10,566
12		$14,941	$14,941	0.6852	$10,238
13		$14,941	$14,941	0.6640	$9,921
14		$14,941	$14,941	0.6434	$9,613
15		$34,941	$34,941	0.6235	$21,786
16		$14,941	$14,941	0.6041	$9,026
17		$14,941	$14,941	0.5854	$8,747
18		$14,941	$14,941	0.5672	$8,475
19		$14,941	$14,941	0.5496	$8,212
20		$34,941	$34,941	0.5326	$18,610
21		$14,941	$14,941	0.5161	$7,711
22		$14,941	$14,941	0.5001	$7,472
23		$14,941	$14,941	0.4846	$7,241
24		$14,941	$14,941	0.4696	$7,016
25		$34,941	$34,941	0.4550	$15,898
26		$14,941	$14,941	0.4409	$6,588
27		$14,941	$14,941	0.4272	$6,383
28		$14,941	$14,941	0.4140	$6,186
29		$14,941	$14,941	0.4011	$5,993
30		$34,941	$34,941	0.3887	$13,582
31		$14,941	$14,941	0.3766	$5,627
32		$14,941	$14,941	0.3650	$5,454
33		$14,941	$14,941	0.3536	$5,283
34		$14,941	$14,941	0.3427	$5,120
35		$34,941	$34,941	0.3321	$11,604
36		$14,941	$14,941	0.3218	$4,808
37		$14,941	$14,941	0.3118	$4,659
38		$14,941	$14,941	0.3021	$4,514
39		$14,941	$14,941	0.2927	$4,373
40		$34,941	$34,941	0.2837	$9,913
41		$14,941	$14,941	0.2749	$4,107
42		$14,941	$14,941	0.2664	$3,980

Table D-57. (Alternative 4), 216-B-5 Reverse Well Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
43		$14,941	$14,941	0.2581	$3,856
44		$14,941	$14,941	0.2501	$3,737
45		$34,941	$34,941	0.2423	$8,466
46		$14,941	$14,941	0.2348	$3,508
47		$14,941	$14,941	0.2275	$3,399
48		$14,941	$14,941	0.2205	$3,295
49		$14,941	$14,941	0.2136	$3,191
50		$34,941	$34,941	0.2070	$7,233
51		$14,941	$14,941	0.2006	$2,997
52		$14,941	$14,941	0.1944	$2,905
53		$14,941	$14,941	0.1884	$2,815
54		$14,941	$14,941	0.1825	$2,727
55		$34,941	$34,941	0.1769	$6,181
56		$14,941	$14,941	0.1714	$2,561
57		$14,941	$14,941	0.1661	$2,482
58		$14,941	$14,941	0.1609	$2,404
59		$14,941	$14,941	0.1559	$2,329
60		$34,941	$34,941	0.1511	$5,280
61		$14,941	$14,941	0.1464	$2,187
62		$14,941	$14,941	0.1419	$2,120
63		$14,941	$14,941	0.1375	$2,054
64		$14,941	$14,941	0.1332	$1,990
65		$34,941	$34,941	0.1291	$4,511
66		$14,941	$14,941	0.1251	$1,869
67		$14,941	$14,941	0.1212	$1,811
68		$14,941	$14,941	0.1174	$1,754
69		$14,941	$14,941	0.1138	$1,700
70		$34,941	$34,941	0.1103	$3,854
71		$14,941	$14,941	0.1068	$1,596
72		$14,941	$14,941	0.1035	$1,546
73		$14,941	$14,941	0.1003	$1,499
74		$14,941	$14,941	0.0972	$1,452
75		$34,941	$34,941	0.0942	$3,291
76		$14,941	$14,941	0.0913	$1,364
77		$14,941	$14,941	0.0884	$1,321
78		$14,941	$14,941	0.0857	$1,280
79		$14,941	$14,941	0.0830	$1,240
80		$34,941	$34,941	0.0805	$2,813
81		$14,941	$14,941	0.0780	$1,165
82		$14,941	$14,941	0.0756	$1,130
83		$14,941	$14,941	0.0732	$1,094
84		$14,941	$14,941	0.0709	$1,059
85		$34,941	$34,941	0.0687	$2,400
86		$14,941	$14,941	0.0666	$995
87		$14,941	$14,941	0.0645	$964

Table D-57. (Alternative 4), 216-B-5 Reverse Well Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 12%	Present Worth
88		$14,941	$14,941	0.0625	$934
89		$14,941	$14,941	0.0606	$905
90		$34,941	$34,941	0.0587	$2,051
91		$14,941	$14,941	0.0569	$850
92		$14,941	$14,941	0.0551	$823
93		$14,941	$14,941	0.0534	$798
94		$14,941	$14,941	0.0518	$774
95		$34,941	$34,941	0.0502	$1,754
96		$14,941	$14,941	0.0486	$726
97		$14,941	$14,941	0.0471	$704
98		$14,941	$14,941	0.0456	$681
99		$14,941	$14,941	0.0442	$660
100		$34,941	$34,941	0.0429	$1,499
101		$14,941	$14,941	0.0415	$620
102		$14,941	$14,941	0.0402	$601
103		$14,941	$14,941	0.0390	$583
104		$14,941	$14,941	0.0378	$565
105		$34,941	$34,941	0.0366	$1,279
106		$14,941	$14,941	0.0355	$530
107		$14,941	$14,941	0.0344	$514
108		$14,941	$14,941	0.0333	$498
109		$14,941	$14,941	0.0323	$483
110		$34,941	$34,941	0.0313	$1,094
111		$14,941	$14,941	0.0303	$453
112		$14,941	$14,941	0.0294	$439
113		$14,941	$14,941	0.0285	$426
114		$14,941	$14,941	0.0276	$412
115		$34,941	$34,941	0.0267	$933
116		$14,941	$14,941	0.0259	$387
117		$14,941	$14,941	0.0251	$375
118		$14,941	$14,941	0.0243	$363
119		$14,941	$14,941	0.0236	$353
120		$34,941	$34,941	0.0228	$797
121		$14,941	$14,941	0.0221	$330
122		$14,941	$14,941	0.0214	$320
123		$14,941	$14,941	0.0208	$311
124		$14,941	$14,941	0.0201	$300
125		$34,941	$34,941	0.0195	$681
126		$14,941	$14,941	0.0189	$282
127		$14,941	$14,941	0.0183	$273
128		$14,941	$14,941	0.0177	$264
129		$14,941	$14,941	0.0172	$257
130		$34,941	$34,941	0.0167	$584
131		$14,941	$14,941	0.0161	$241
132		$14,941	$14,941	0.0156	$233

Table D-57. (Alternative 4), 216-B-5 Reverse Well Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 2.2%	Present Worth
133		$14,941	$14,941	0.0152	$227
134		$14,941	$14,941	0.0147	$220
135		$34,941	$34,941	0.0142	$496
136		$14,941	$14,941	0.0138	$206
137		$14,941	$14,941	0.0134	$200
138		$14,941	$14,941	0.0129	$193
139		$14,941	$14,941	0.0125	$187
140		$34,941	$34,941	0.0122	$426
141		$14,941	$14,941	0.0118	$176
142		$14,941	$14,941	0.0114	$170
143		$14,941	$14,941	0.0111	$166
144		$14,941	$14,941	0.0107	$160
145		$34,941	$34,941	0.0104	$363
146		$14,941	$14,941	0.0101	$151
147		$14,941	$14,941	0.0098	$146
148		$14,941	$14,941	0.0094	$140
149		$14,941	$14,941	0.0092	$137
150		$34,941	$34,941	0.0089	$311
				TOTAL PRESENT WORTH	$1,626,584

Table D-58. (Alternative 4), 216-B-5 Reverse Well Representative Site, Calculation Sheet 200-TW-2 Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Cover Maintenance (Purchase, Deliver, and Place Topsoil) Annual Cost											
Purchase Pea Gravel (includes purchase and delivery)	14	cy		$55.67			$0	$779	$0	$0	$779
Silt Loam, from Pit 30 excavate/load (128 cy)	1	day			$296.00	$559.90	$0	$0	$296	$560	$856
Silt Loam Hauling, 2 Trucks, .5 Day/Each (54 cy)	1	day			$296.00	$398.55	$0	$0	$296	$399	$695
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	142	cy		$14.00	$10.00	$5.68	$0	$1,988	$1,420	$807	$4,215
Fine Grading and seeding, incl. lime, fert, and seed	214	sy		$0.26	$1.19	$0.18	$0	$56	$255	$39	$349
Oversight (0.5 days x 8 hrs/day)	8	hrs			$56.00		$0	$0	$448	$0	$448
					Total Cost		$0	$2,823	$3,115	$3,212	$9,149
Decontamination Pad Construction											
Decon Pad - Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Decon Pads -Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
Decon Pads - 3" SCH 80 PVC Pipe	5	lf		$1.63		$0.00	$0	$8	$0	$0	$8
Decon Pads - Sump Pump (2 for 1.2 months)	2.2	mo				$375.00	$0	$0	$0	$825	$825
Decon Pads - Sump Construction (1)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
					Total Cost		$0	$837	$0	$1,136	$1,972

Note:

1. The decontamination pad cost for Alternative 4 is less expensive than the decontamination pad for Alternative 3 because the Alternative 4 decontamination pad usage is expected to be only 1 day, where for Alternative 3 decontamination pad is expected to be used day after day for long periods of time.

2. Costs of labor to construct and operate the decontamination pad presented on Table D-55.

Table D-59. (Alternative 4), 216-B-7A&B Crib Representative Site, Capital Costs 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	33	days			$1,720.00		$0	$0	$56,760	$0	$56,760
RCT Decontaminaiton Crew (4 RCTs)	1	days			$1,792.00		$0	$0	$1,792	$0	$1,792
SAMPLING CREWS AND SAMPLING											
Air Sampling Crew (Sampler and RCT)	8	days			$896.00	$500.00	$0	$0	$7,168	$4,000	$11,168
Fluor Hanford Field Cost							$0	$0	$65,720	$4,000	$69,720
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$9,858	$0	$9,858
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$600	$600
Fluor Hanford Total Cost							$0	$0	$75,578	$4,600	$80,178
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	1.6	mo				$350.00	$0	$0	$0	$560	$560
Field Office Support	1.6	mo		$139.00			$0	$222	$0	$0	$222
Storage Trailer	1.6	mo				$105.00	$0	$0	$0	$168	$168
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	0.79	ac	$1,748.00				$1,381	$0	$0	$0	$1,381
Site Utilities, Generator and Oiler	1.6	mo		$1,394.80	$6,216.00		$0	$2,232	$9,946	$0	$12,177
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (see Table D-62)	1	ea		$836.86	$0.00	$1,360.56	$0	$837	$0	$1,361	$2,197
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler, (add one day for decon)	7	day			$592.00	$1,851.60	$0	$0	$4,144	$12,961	$17,105
Water Truck	6	day			$296.00	$80.00	$0	$0	$1,776	$480	$2,256

Table D-59. (Alternative 4), 216-B-7A&B Crib Representative Site, Capital Costs 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
DECONTAMINATION											
Water for Decon Process (1,000 gal/month)	50	gal		$0.20			$0	$10	$0	$0	$10
CAPPING											
Grading Fill, Excavate/Load from Pit 30 (1,528 cy)	1.5	day			$592.00	$1,190.17	$0	$0	$888	$1,785	$2,673
Foundation Soil, 5 Trucks, 1.5 Days/Each	7.5	day			$296.00	$398.55	$0	$0	$2,220	$2,989	$5,209
Foundation Soil, Front End Loader	1.5	day			$592.00	$630.27	$0	$0	$888	$945	$1,833
Foundation Soil, Bulldozer	1.5	day			$592.00	$656.42	$0	$0	$888	$985	$1,873
Foundation Soil, Vibratory Roller	1.5	day			$592.00	$353.98	$0	$0	$888	$531	$1,419
Asphalt Top Course (4" thick)	2,944	sy	$10.70				$31,501	$0	$0	$0	$31,501
Asphalt Paving (6" thick)	2,944	sy	$15.40				$45,338	$0	$0	$0	$45,338
Purchase Drainage Gravel Cushion (918 cy)	918	cy		$44.47			$0	$40,823	$0	$0	$40,823
Drainage Gravel Cushion Layer, Front End Loader	1	day			$592.00	$630.27	$0	$0	$592	$630	$1,222
Drainage Gravel Cushion Layer, Bulldozer	1	day			$592.00	$656.42	$0	$0	$592	$656	$1,248
Drainage Gravel Cushion Layer, Vibratory Roller	1	day			$592.00	$353.98	$0	$0	$592	$354	$946
Purchase Riprap	5,855	cy		$45.42			$0	$265,934	$0	$0	$265,934
Riprap, Front End Loader	4.5	day			$592.00	$630.27	$0	$0	$2,664	$2,836	$5,500
Riprap, Bulldozer	4.5	day			$592.00	$656.42	$0	$0	$2,664	$2,954	$5,618
Riprap, Vibratory Roller	4.5	day			$592.00	$353.98	$0	$0	$2,664	$1,593	$4,257
Purchase Gravel Filter Material (412 cy)	412	cy		$44.47			$0	$18,322	$0	$0	$18,322
Gravel Filter Layer, Front End Loader	0.5	day			$592.00	$630.27	$0	$0	$296	$315	$611
Gravel Filter Layer, Bulldozer	0.5	day			$592.00	$656.42	$0	$0	$296	$328	$624
Gravel Filter Layer, Vibratory Roller	0.5	day			$592.00	$353.98	$0	$0	$296	$177	$473
Purchase Sand Layer (206 cy)	206	cy		$41.42			$0	$8,533	$0	$0	$8,533
Sand Filter Layer, Front End Loader	0.5	day			$592.00	$630.27	$0	$0	$296	$315	$611
Sand Filter Layer, Bulldozer	0.5	day			$592.00	$656.42	$0	$0	$296	$328	$624
Sand Filter Layer, Vibratory Roller	0.5	day			$592.00	$353.98	$0	$0	$296	$177	$473
Compacted Silt Loam, from Pit 30 excavate/load (834 cy)	1	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Compacted Silt Loam Haul, 5 Trucks, 1 Day/Each	5	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Compacted Silt Loam Layer, Front End Loader	1	day			$592.00	$630.27	$0	$0	$592	$630	$1,222
Compacted Silt Loam Layer, Bulldozer	1	day			$592.00	$656.42	$0	$0	$592	$656	$1,248
Compacted Silt Loam Layer, Vibratory Roller	1	day			$592.00	$353.98	$0	$0	$592	$354	$946
Silt Loam, from Pit 30 excavate/load (1,018 cy)	1	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782

Table D-59. (Alternative 4), 216-B-7A&B Crib Representative Site, Capital Costs 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Purchase Pea Gravel Layer	113	cy		$55.67			$0	$6,291	$0	$0	$6,291
Silt Loam Hauling, 5 Trucks, 1 Day/Each (1,018 cy)	5	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Silt Loam/Pea Gravel Layer, Front End Loader (1,131 cy)	1	day			$592.00	$630.27	$0	$0	$592	$630	$1,222
Silt Loam/Pea Gravel Layer, Bulldozer	1	day			$592.00	$656.42	$0	$0	$592	$656	$1,248
Silt Loam/Pea Gravel Layer, Vibratory Roller	1	day			$592.00	$353.98	$0	$0	$592	$354	$946
Install Cap Monitoirng System	1	ea		$5,000.00			$0	$5,000	$0	$0	$5,000
Water Truck	11	day			$296.00	$80.00	$0	$0	$3,256	$880	$4,136
REVEGETATION											
Fine Grade & Seed Topsoil	1,162	sy		$0.26	$1.19	$0.18	$0	$302	$1,383	$209	$1,894
MISCELLANEOUS											
Support Personnel	33	day			$1,896.00		$0	$0	$62,568	$0	$62,568
Labor (4 laborers @ $37/hour)	33	day			$1,184.00		$0	$0	$39,072	$0	$39,072
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$78,219	$377,105	$172,163	$56,299	$683,787
Direct Markup on Labor @	25%						$0	$0	$43,041	$0	$43,041
Direct Markup on Materials @	10%						$0	$37,711	$0	$0	$37,711
Direct Markup on Subcontracts @	10%						$7,822	$0	$0	$0	$7,822
Construction Contractor G&A @	26.5%						$20,728	$99,933	$45,623	$14,919	$181,204
Construction Contractor Subtotal							$106,769	$514,749	$260,828	$71,218	$953,564
Fluor Hanford G&A on Construction Contractor Cost @	15%						$16,015	$77,212	$39,124	$10,683	$143,035
Construction Contractor Total Cost							$122,785	$591,961	$299,952	$81,901	$1,096,599
Fluor Hanford Total Cost (From Above)							$0	$0	$75,578	$4,600	$80,178
Project Subtotal							$122,785	$591,961	$375,530	$86,501	$1,176,777
Contingency on Field Costs @	20%										$235,355

Table D-59. (Alternative 4), 216-B-7A&B Crib Representative Site, Capital Costs 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
TOTAL COST											$1,412,132

Table D-60. (Alternative 4), 216-B-7A&B Crib Representative Site, Periodic Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$1,792		Cost is based on 16 hrs. for every 50,000 sf (area = 28,498 ft^2) @ $112/hr
Radiation Survey of Surface Soil	$6,000		Cost is based on $1,000 for every 5,000 square feet (area = 28,498 ft^2)
Cover Maintenance	$12,868		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.
TOTALS	**$20,660**	**$20,000**	

Table D-61. (Alternative 4), 216-B-7A&B Crib Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$1,412,132		$1,412,132	1.0000	$1,412,132
1		$20,660	$20,660	0.9690	$20,019
2		$20,660	$20,660	0.9389	$19,397
3		$20,660	$20,660	0.9098	$18,796
4		$20,660	$20,660	0.8816	$18,213
5		$40,660	$40,660	0.8543	$34,735
6		$20,660	$20,660	0.8278	$17,102
7		$20,660	$20,660	0.8021	$16,571
8		$20,660	$20,660	0.7773	$16,059
9		$20,660	$20,660	0.7532	$15,561
10		$40,660	$40,660	0.7298	$29,673
11		$20,660	$20,660	0.7072	$14,610
12		$20,660	$20,660	0.6852	$14,156
13		$20,660	$20,660	0.6640	$13,718
14		$20,660	$20,660	0.6434	$13,292
15		$40,660	$40,660	0.6235	$25,351
16		$20,660	$20,660	0.6041	$12,480
17		$20,660	$20,660	0.5854	$12,094
18		$20,660	$20,660	0.5672	$11,718
19		$20,660	$20,660	0.5496	$11,355
20		$40,660	$40,660	0.5326	$21,655
21		$20,660	$20,660	0.5161	$10,662
22		$20,660	$20,660	0.5001	$10,332
23		$20,660	$20,660	0.4846	$10,012
24		$20,660	$20,660	0.4696	$9,702
25		$40,660	$40,660	0.4550	$18,500
26		$20,660	$20,660	0.4409	$9,109
27		$20,660	$20,660	0.4272	$8,826
28		$20,660	$20,660	0.4140	$8,553
29		$20,660	$20,660	0.4011	$8,287
30		$40,660	$40,660	0.3887	$15,804
31		$20,660	$20,660	0.3766	$7,780
32		$20,660	$20,660	0.3650	$7,541
33		$20,660	$20,660	0.3536	$7,305
34		$20,660	$20,660	0.3427	$7,080
35		$40,660	$40,660	0.3321	$13,503
36		$20,660	$20,660	0.3218	$6,648
37		$20,660	$20,660	0.3118	$6,442
38		$20,660	$20,660	0.3021	$6,241
39		$20,660	$20,660	0.2927	$6,047
40		$40,660	$40,660	0.2837	$11,535

Table D-61. (Alternative 4), 216-B-7A&B Crib Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
41		$20,660	$20,660	0.2749	$5,679
42		$20,660	$20,660	0.2664	$5,504
43		$20,660	$20,660	0.2581	$5,332
44		$20,660	$20,660	0.2501	$5,167
45		$40,660	$40,660	0.2423	$9,852
46		$20,660	$20,660	0.2348	$4,851
47		$20,660	$20,660	0.2275	$4,700
48		$20,660	$20,660	0.2205	$4,555
49		$20,660	$20,660	0.2136	$4,413
50		$40,660	$40,660	0.2070	$8,417
51		$20,660	$20,660	0.2006	$4,144
52		$20,660	$20,660	0.1944	$4,016
53		$20,660	$20,660	0.1884	$3,892
54		$20,660	$20,660	0.1825	$3,770
55		$40,660	$40,660	0.1769	$7,193
56		$20,660	$20,660	0.1714	$3,541
57		$20,660	$20,660	0.1661	$3,432
58		$20,660	$20,660	0.1609	$3,324
59		$20,660	$20,660	0.1559	$3,221
60		$40,660	$40,660	0.1511	$6,144
61		$20,660	$20,660	0.1464	$3,025
62		$20,660	$20,660	0.1419	$2,932
63		$20,660	$20,660	0.1375	$2,841
64		$20,660	$20,660	0.1332	$2,752
65		$40,660	$40,660	0.1291	$5,249
66		$20,660	$20,660	0.1251	$2,585
67		$20,660	$20,660	0.1212	$2,504
68		$20,660	$20,660	0.1174	$2,425
69		$20,660	$20,660	0.1138	$2,351
70		$40,660	$40,660	0.1103	$4,485
71		$20,660	$20,660	0.1068	$2,206
72		$20,660	$20,660	0.1035	$2,138
73		$20,660	$20,660	0.1003	$2,072
74		$20,660	$20,660	0.0972	$2,008
75		$40,660	$40,660	0.0942	$3,830
76		$20,660	$20,660	0.0913	$1,886
77		$20,660	$20,660	0.0884	$1,826
78		$20,660	$20,660	0.0857	$1,771
79		$20,660	$20,660	0.0830	$1,715
80		$40,660	$40,660	0.0805	$3,273
81		$20,660	$20,660	0.0780	$1,611
82		$20,660	$20,660	0.0756	$1,562
83		$20,660	$20,660	0.0732	$1,512

Table D-61. (Alternative 4), 216-B-7A&B Crib Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
84		$20,660	$20,660	0.0709	$1,465
85		$40,660	$40,660	0.0687	$2,793
86		$20,660	$20,660	0.0666	$1,376
87		$20,660	$20,660	0.0645	$1,333
88		$20,660	$20,660	0.0625	$1,291
89		$20,660	$20,660	0.0606	$1,252
90		$40,660	$40,660	0.0587	$2,387
91		$20,660	$20,660	0.0569	$1,176
92		$20,660	$20,660	0.0551	$1,138
93		$20,660	$20,660	0.0534	$1,103
94		$20,660	$20,660	0.0518	$1,070
95		$40,660	$40,660	0.0502	$2,041
96		$20,660	$20,660	0.0486	$1,004
97		$20,660	$20,660	0.0471	$973
98		$20,660	$20,660	0.0456	$942
99		$20,660	$20,660	0.0442	$913
100		$40,660	$40,660	0.0429	$1,744
101		$20,660	$20,660	0.0415	$857
102		$20,660	$20,660	0.0402	$831
103		$20,660	$20,660	0.0390	$806
104		$20,660	$20,660	0.0378	$781
105		$40,660	$40,660	0.0366	$1,488
106		$20,660	$20,660	0.0355	$733
107		$20,660	$20,660	0.0344	$711
108		$20,660	$20,660	0.0333	$688
109		$20,660	$20,660	0.0323	$667
110		$40,660	$40,660	0.0313	$1,273
111		$20,660	$20,660	0.0303	$626
112		$20,660	$20,660	0.0294	$607
113		$20,660	$20,660	0.0285	$589
114		$20,660	$20,660	0.0276	$570
115		$40,660	$40,660	0.0267	$1,086
116		$20,660	$20,660	0.0259	$535
117		$20,660	$20,660	0.0251	$519
118		$20,660	$20,660	0.0243	$502
119		$20,660	$20,660	0.0236	$488
120		$40,660	$40,660	0.0228	$927
121		$20,660	$20,660	0.0221	$457
122		$20,660	$20,660	0.0214	$442
123		$20,660	$20,660	0.0208	$430
124		$20,660	$20,660	0.0201	$415
125		$40,660	$40,660	0.0195	$793
126		$20,660	$20,660	0.0189	$390

Table D-61. (Alternative 4), 216-B-7A&B Crib Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
127		$20,660	$20,660	0.0183	$378
128		$20,660	$20,660	0.0177	$366
129		$20,660	$20,660	0.0172	$355
130		$40,660	$40,660	0.0167	$679
131		$20,660	$20,660	0.0161	$333
132		$20,660	$20,660	0.0156	$322
133		$20,660	$20,660	0.0152	$314
134		$20,660	$20,660	0.0147	$304
135		$40,660	$40,660	0.0142	$577
136		$20,660	$20,660	0.0138	$285
137		$20,660	$20,660	0.0134	$277
138		$20,660	$20,660	0.0129	$267
139		$20,660	$20,660	0.0125	$258
140		$40,660	$40,660	0.0122	$496
141		$20,660	$20,660	0.0118	$244
142		$20,660	$20,660	0.0114	$236
143		$20,660	$20,660	0.0111	$229
144		$20,660	$20,660	0.0107	$221
145		$40,660	$40,660	0.0104	$423
146		$20,660	$20,660	0.0101	$209
147		$20,660	$20,660	0.0098	$202
148		$20,660	$20,660	0.0094	$194
149		$20,660	$20,660	0.0092	$190
150		$40,660	$40,660	0.0089	$362
				TOTAL PRESENT WORTH	$2,168,237

Table D-62. (Alternative 4), 216-B-7A&B Reverse Well Representative Site, Calculation Sheet 200-TW-2 Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Cover Maintenance (Purchase, Deliver, and Place Topsoil) Annual Cost											
Purchase Pea Gravel (includes purchase and delivery)	21	cy		$55.67			$0	$1,169	$0	$0	$1,169
Silt Loam, from Pit 30 excavate/load (189 cy)	1	day			$296.00	$559.90	$0	$0	$296	$560	$856
Silt Loam Hauling, 2 Trucks, .1 Day/Each (189 cy)	2	day			$296.00	$398.55	$0	$0	$592	$797	$1,389
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	210	cy		$14.00	$10.00	$5.68	$0	$2,940	$2,100	$1,193	$6,233
Fine Grading and seeding, incl. lime, fert, and seed	317	sy		$0.26	$1.19	$0.18	$0	$82	$377	$57	$517
Oversight (2 day x 8 hrs/day)	16	hrs			$56.00		$0	$0	$896	$0	$896
					Total Cost		$0	$4,191	$4,661	$4,015	$12,868
Decontamination Pad Construction											
Decon Pad - Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Decon Pads -Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
Decon Pads - 3" SCH 80 PVC Pipe	5	lf		$1.63		$0.00	$0	$8	$0	$0	$8
Decon Pads - Sump Pump (2 for 1.5 months)	3	mo				$375.00	$0	$0	$0	$1,125	$1,125
Decon Pads - Sump Construction (1)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
					Total Cost		$0	$837	$0	$1,436	$2,272

Note:

1. The decontamination pad cost for Alternative 4 is less expensive than the decontamination pad for Alternative 3 because the Alternative 4 decontamination pad usage is expected to be only 1 day, where for Alternative 3 decontamination pad is expected to be used day after day for long periods of time.

2. Costs of labor to construct and operate the decontamination pad presented on Table D-59.

Table D-63. (Alternative 4), 216-B-38 Trench Representative Site, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	227.5	days			$1,720.00		$0	$0	$391,300	$0	$391,300
RCT Decontamination Crew (4 RCTs)	1	days			$1,792.00		$0	$0	$1,792	$0	$1,792
SAMPLING CREWS AND SAMPLING											
Air Sampling Crew (Sampler and RCT)	75	days	$1,000.00		$896.00	$500.00	$75,000	$0	$67,200	$37,500	$179,700
Fluor Hanford Field Cost							$75,000	$0	$460,292	$37,500	$572,792
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$69,044	$0	$69,044
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$5,625	$5,625
Fluor Hanford Total Cost							**$75,000**	**$0**	**$529,336**	**$43,125**	**$647,461**
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	10.8	mo				$350.00	$0	$0	$0	$3,780	$3,780
Field Office Support	10.8	mo		$139.00			$0	$1,501	$0	$0	$1,501
Storage Trailer	10.8	mo				$105.00	$0	$0	$0	$1,134	$1,134
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	6.87	ac	$1,748.00				$12,009	$0	$0	$0	$12,009
Site Utilities, Generator and Oiler	10.8	mo			$6,216.00	$1,394.80	$0	$0	$67,133	$15,064	$82,197
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (see Table D-66)	1	ea		$836.86	$0.00	$1,360.56	$0	$837	$0	$1,361	$2,197

Table D-63. (Alternative 4), 216-B-38 Trench Representative Site, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler, (add one day for decon)	51	day			$592.00	$1,851.60	$0	$0	$30,192	$94,432	$124,624
Water Truck	50	day			$296.00	$80.00	$0	$0	$14,800	$4,000	$18,800
DECONTAMINATION											
Water for Decon Process (1,000 gal/month)	50	gal		$0.20			$0	$10	$0	$0	$10
CAPPING											
Grading Fill, Excavate and Load from Pit 30 (31,500 cy)	25	day			$592.00	$1,190.17	$0	$0	$14,800	$29,754	$44,554
Grading Fill, Hauling, 5 Trucks, 25 Days/Each	125	day			$296.00	$398.55	$0	$0	$37,000	$49,819	$86,819
Grading Fill, Front End Loader	25	day			$296.00	$630.27	$0	$0	$7,400	$15,757	$23,157
Grading Fill, Bulldozer	25	day			$296.00	$656.42	$0	$0	$7,400	$16,410	$23,810
Grading Fill, Vibratory Roller	25	day			$296.00	$353.98	$0	$0	$7,400	$8,850	$16,250
Asphalt Base-course (4" thick)	26,205	sy	$10.70				$280,394	$0	$0	$0	$280,394
Asphalt Paving (6" thick)	26,205	sy	$15.40				$403,557	$0	$0	$0	$403,557
Purchase Lateral Drainage Layer (4,290 cy)	4,290	cy		$44.47			$0	$190,776	$0	$0	$190,776
Lateral Drainage Layer, Front End Loader	3.5	day			$296.00	$630.27	$0	$0	$1,036	$2,206	$3,242
Lateral Drainage Layer, Bulldozer	3.5	day			$296.00	$656.42	$0	$0	$1,036	$2,297	$3,333
Lateral Drainage Layer, Vibratory Roller	3.5	day			$296.00	$353.98	$0	$0	$1,036	$1,239	$2,275
Purchase Gravel Filter Layer (4,250 cy)	4,250	cy		$45.67			$0	$194,098	$0	$0	$194,098
Gravel Filter Layer, Front End Loader	3.5	day			$296.00	$630.27	$0	$0	$1,036	$2,206	$3,242
Gravel Filter Layer, Bulldozer	3.5	day			$296.00	$656.42	$0	$0	$1,036	$2,297	$3,333
Gravel Filter Layer, Vibratory Roller	3.5	day			$296.00	$353.98	$0	$0	$1,036	$1,239	$2,275
Purchase Sand Layer (3,980 cy)	3,980	cy		$41.42			$0	$164,852	$0	$0	$164,852
Sand Filter Layer, Front End Loader	3.0	day			$296.00	$630.27	$0	$0	$888	$1,891	$2,779
Sand Filter Layer, Bulldozer	3.0	day			$296.00	$656.42	$0	$0	$888	$1,969	$2,857
Sand Filter Layer, Vibratory Roller	3.0	day			$296.00	$353.98	$0	$0	$888	$1,062	$1,950
Geotextile (Non-woven)	23,900	sy		$1.10		$0.06	$0	$26,290	$0	$1,434	$27,724
Compacted Silt Loam, Pit 30 excavate/load (12,610 cy)	10.0	day			$592.00	$1,190.17	$0	$0	$5,920	$11,902	$17,822
Compacted Silt Loam Hauling, 5 Trucks, 10 Days/Ea	50.0	day			$296.00	$398.55	$0	$0	$14,800	$19,928	$34,728
Compacted Silt Loam Layer, Front End Loader	10.0	day			$296.00	$630.27	$0	$0	$2,960	$6,303	$9,263
Compacted Silt Loam Layer, Bulldozer	10.0	day			$296.00	$656.42	$0	$0	$2,960	$6,564	$9,524
Compacted Silt Loam Layer, Vibratory Roller	10.0	day			$296.00	$353.98	$0	$0	$2,960	$3,540	$6,500

Table D-63. (Alternative 4), 216-B-38 Trench Representative Site, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Silt Loam, from Pit 30 excavate/load (11,700 cy)	10.0	day			$592.00	$1,190.17	$0	$0	$5,920	$11,902	$17,822
Purchase Pea Gravel Layer	1,300	cy		$55.67			$0	$72,371	$0	$0	$72,371
Silt Loam Hauling, 5 Trucks, .5 Day/Each (11,700 cy)	50.0	day			$296.00	$398.55	$0	$0	$14,800	$19,928	$34,728
Silt Loam/Pea Gravel Layer, Front End Loader (13,000 cy)	10.0	day			$296.00	$630.27	$0	$0	$2,960	$6,303	$9,263
Silt Loam/Pea Gravel Layer, Bulldozer (13,000 cy)	10.0	day			$296.00	$656.42	$0	$0	$2,960	$6,564	$9,524
Silt Loam/Pea Gravel Layer, Vibratory Roller	10.0	day			$296.00	$353.98	$0	$0	$2,960	$3,540	$6,500
Purchase Riprap	1,470	cy		$45.42			$0	$66,767	$0	$0	$66,767
Riprap, Front End Loader	4	day			$296.00	$630.27	$0	$0	$1,184	$2,521	$3,705
Riprap, Hydraulic Excavator	4	day			$296.00	$559.90	$0	$0	$1,184	$2,240	$3,424
Install Cap Monitoirng System	1	ea		$5,000.00			$0	$5,000	$0	$0	$5,000
Water Truck	135.5	day			$296.00	$80.00	$0	$0	$40,108	$10,840	$50,948
REVEGETATION											
Fine Grade & Seed Topsoil	26,126	sy		$0.26	$1.19	$0.18	$0	$6,793	$31,090	$4,703	$42,585
MISCELLANEOUS											
Support Personnel	227.5	day			$1,896.00		$0	$0	$431,340	$0	$431,340
Labor (4 laborers @ $37/hour)	227.5	day			$1,184.00		$0	$0	$269,360	$0	$269,360
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$695,959	$757,895	$1,053,478	$387,109	$2,894,441
Direct Markup on Labor @	25%						$0	$0	$263,369	$0	$263,369
Direct Markup on Materials @	10%						$0	$75,789	$0	$0	$75,789
Direct Markup on Subcontracts @	10%						$69,596	$0	$0	$0	$69,596
Construction Contractor G&A @	26.5%						$184,429	$200,842	$279,172	$102,584	$767,027
Construction Contractor Subtotal							$949,984	$1,034,526	$1,596,019	$489,693	$4,070,222
Fluor Hanford G&A on Construction Contractor Cost @	15%						$142,498	$155,179	$239,403	$73,454	$610,533
Construction Contractor Total Cost							$1,092,482	$1,189,705	$1,835,422	$563,147	$4,680,755

Table D-63. (Alternative 4), 216-B-38 Trench Representative Site, Capital Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Fluor Hanford Total Cost (From Above)							$75,000	$0	$529,336	$43,125	$647,461
Project Subtotal							$1,167,482	$1,189,705	$2,364,757	$606,272	$5,382,216
Contingency on Field Costs @	20%										$1,065,643
TOTAL COST											**$6,393,859**

Table D-64. (Alternative 4), 216-B-38 Trench Well Representative Site, Periodic Cost 200-TW-2 Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$8,960		Cost is based on 16 hrs. for every 50,000 sf (area = 249,314 ft^2) @ $112/hr
Radiation Survey of Surface Soil	$50,000		Cost is based on $1,000 for every 5,000 square feet (area = 249,314 ft^2)
Cover Maintenance	$90,381		Cost includes the purchas of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.
TOTALS	**$149,341**	**$20,000**	

Table D-65. (Alternative 4), 216-B-38 Reverse Well Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$6,393,859		$6,393,859	1.0000	$6,393,859
1		$149,341	$149,341	0.9690	$144,712
2		$149,341	$149,341	0.9389	$140,216
3		$149,341	$149,341	0.9098	$135,871
4		$149,341	$149,341	0.8816	$131,659
5		$169,341	$169,341	0.8543	$144,668
6		$149,341	$149,341	0.8278	$123,625
7		$149,341	$149,341	0.8021	$119,787
8		$149,341	$149,341	0.7773	$116,083
9		$149,341	$149,341	0.7532	$112,484
10		$169,341	$169,341	0.7298	$123,585
11		$149,341	$149,341	0.7072	$105,614
12		$149,341	$149,341	0.6852	$102,329
13		$149,341	$149,341	0.6640	$99,163
14		$149,341	$149,341	0.6434	$96,086
15		$169,341	$169,341	0.6235	$105,584
16		$149,341	$149,341	0.6041	$90,217
17		$149,341	$149,341	0.5854	$87,424
18		$149,341	$149,341	0.5672	$84,706
19		$149,341	$149,341	0.5496	$82,078
20		$169,341	$169,341	0.5326	$90,191
21		$149,341	$149,341	0.5161	$77,075
22		$149,341	$149,341	0.5001	$74,685
23		$149,341	$149,341	0.4846	$72,371
24		$149,341	$149,341	0.4696	$70,131
25		$169,341	$169,341	0.4550	$77,050
26		$149,341	$149,341	0.4409	$65,844
27		$149,341	$149,341	0.4272	$63,799
28		$149,341	$149,341	0.4140	$61,827
29		$149,341	$149,341	0.4011	$59,901
30		$169,341	$169,341	0.3887	$65,823
31		$149,341	$149,341	0.3766	$56,242
32		$149,341	$149,341	0.3650	$54,510
33		$149,341	$149,341	0.3536	$52,807
34		$149,341	$149,341	0.3427	$51,179
35		$169,341	$169,341	0.3321	$56,238
36		$149,341	$149,341	0.3218	$48,058
37		$149,341	$149,341	0.3118	$46,565
38		$149,341	$149,341	0.3021	$45,116
39		$149,341	$149,341	0.2927	$43,712
40		$169,341	$169,341	0.2837	$48,042
41		$149,341	$149,341	0.2749	$41,054
42		$149,341	$149,341	0.2664	$39,784

Table D-65. (Alternative 4), 216-B-38 Reverse Well Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
43		$149,341	$149,341	0.2581	$38,545
44		$149,341	$149,341	0.2501	$37,350
45		$169,341	$169,341	0.2423	$41,031
46		$149,341	$149,341	0.2348	$35,065
47		$149,341	$149,341	0.2275	$33,975
48		$149,341	$149,341	0.2205	$32,930
49		$149,341	$149,341	0.2136	$31,899
50		$169,341	$169,341	0.2070	$35,054
51		$149,341	$149,341	0.2006	$29,958
52		$149,341	$149,341	0.1944	$29,032
53		$149,341	$149,341	0.1884	$28,136
54		$149,341	$149,341	0.1825	$27,255
55		$169,341	$169,341	0.1769	$29,956
56		$149,341	$149,341	0.1714	$25,597
57		$149,341	$149,341	0.1661	$24,806
58		$149,341	$149,341	0.1609	$24,029
59		$149,341	$149,341	0.1559	$23,282
60		$169,341	$169,341	0.1511	$25,587
61		$149,341	$149,341	0.1464	$21,864
62		$149,341	$149,341	0.1419	$21,192
63		$149,341	$149,341	0.1375	$20,534
64		$149,341	$149,341	0.1332	$19,892
65		$169,341	$169,341	0.1291	$21,862
66		$149,341	$149,341	0.1251	$18,683
67		$149,341	$149,341	0.1212	$18,100
68		$149,341	$149,341	0.1174	$17,533
69		$149,341	$149,341	0.1138	$16,995
70		$169,341	$169,341	0.1103	$18,678
71		$149,341	$149,341	0.1068	$15,950
72		$149,341	$149,341	0.1035	$15,457
73		$149,341	$149,341	0.1003	$14,979
74		$149,341	$149,341	0.0972	$14,516
75		$169,341	$169,341	0.0942	$15,952
76		$149,341	$149,341	0.0913	$13,635
77		$149,341	$149,341	0.0884	$13,202
78		$149,341	$149,341	0.0857	$12,799
79		$149,341	$149,341	0.0830	$12,395
80		$169,341	$169,341	0.0805	$13,632
81		$149,341	$149,341	0.0780	$11,649
82		$149,341	$149,341	0.0756	$11,290
83		$149,341	$149,341	0.0732	$10,932
84		$149,341	$149,341	0.0709	$10,588
85		$169,341	$169,341	0.0687	$11,634
86		$149,341	$149,341	0.0666	$9,946

Table D-65. (Alternative 4), 216-B-38 Reverse Well Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
87		$149,341	$149,341	0.0645	$9,633
88		$149,341	$149,341	0.0625	$9,334
89		$149,341	$149,341	0.0606	$9,050
90		$169,341	$169,341	0.0587	$9,940
91		$149,341	$149,341	0.0569	$8,498
92		$149,341	$149,341	0.0551	$8,229
93		$149,341	$149,341	0.0534	$7,975
94		$149,341	$149,341	0.0518	$7,736
95		$169,341	$169,341	0.0502	$8,501
96		$149,341	$149,341	0.0486	$7,258
97		$149,341	$149,341	0.0471	$7,034
98		$149,341	$149,341	0.0456	$6,810
99		$149,341	$149,341	0.0442	$6,601
100		$169,341	$169,341	0.0429	$7,265
101		$149,341	$149,341	0.0415	$6,198
102		$149,341	$149,341	0.0402	$6,004
103		$149,341	$149,341	0.0390	$5,824
104		$149,341	$149,341	0.0378	$5,645
105		$169,341	$169,341	0.0366	$6,198
106		$149,341	$149,341	0.0355	$5,302
107		$149,341	$149,341	0.0344	$5,137
108		$149,341	$149,341	0.0333	$4,973
109		$149,341	$149,341	0.0323	$4,824
110		$169,341	$169,341	0.0313	$5,300
111		$149,341	$149,341	0.0303	$4,525
112		$149,341	$149,341	0.0294	$4,391
113		$149,341	$149,341	0.0285	$4,256
114		$149,341	$149,341	0.0276	$4,122
115		$169,341	$169,341	0.0267	$4,521
116		$149,341	$149,341	0.0259	$3,868
117		$149,341	$149,341	0.0251	$3,748
118		$149,341	$149,341	0.0243	$3,629
119		$149,341	$149,341	0.0236	$3,524
120		$169,341	$169,341	0.0228	$3,861
121		$149,341	$149,341	0.0221	$3,300
122		$149,341	$149,341	0.0214	$3,196
123		$149,341	$149,341	0.0208	$3,106
124		$149,341	$149,341	0.0201	$3,002
125		$169,341	$169,341	0.0195	$3,302
126		$149,341	$149,341	0.0189	$2,823
127		$149,341	$149,341	0.0183	$2,733
128		$149,341	$149,341	0.0177	$2,643
129		$149,341	$149,341	0.0172	$2,569
130		$169,341	$169,341	0.0167	$2,828

Table D-65. (Alternative 4), 216-B-38 Reverse Well Representative Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
131		$149,341	$149,341	0.0161	$2,404
132		$149,341	$149,341	0.0156	$2,330
133		$149,341	$149,341	0.0152	$2,270
134		$149,341	$149,341	0.0147	$2,195
135		$169,341	$169,341	0.0142	$2,405
136		$149,341	$149,341	0.0138	$2,061
137		$149,341	$149,341	0.0134	$2,001
138		$149,341	$149,341	0.0129	$1,927
139		$149,341	$149,341	0.0125	$1,867
140		$169,341	$169,341	0.0122	$2,066
141		$149,341	$149,341	0.0118	$1,762
142		$149,341	$149,341	0.0114	$1,702
143		$149,341	$149,341	0.0111	$1,658
144		$149,341	$149,341	0.0107	$1,598
145		$169,341	$169,341	0.0104	$1,761
146		$149,341	$149,341	0.0101	$1,508
147		$149,341	$149,341	0.0098	$1,464
148		$149,341	$149,341	0.0094	$1,404
149		$149,341	$149,341	0.0092	$1,374
150		$169,341	$169,341	0.0089	$1,507
				TOTAL PRESENT WORTH	$11,135,605

Table D-66. (Alternative 4), 216-B-38 Trench Well Representative Site, Calculation Sheet 200-TW-2 Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Cover Maintenance (Purchase, Deliver, and Place Topsoil) Annual Cost											
Purchase Pea Gravel (purchase and delivery)	185	cy		$55.67			$0	$10,299	$0	$0	$10,299
Silt Loam, from Pit 30 excavate/load (1,665 cy)	7	day			$296.00	$559.90	$0	$0	$2,072	$3,919	$5,991
Silt Loam Hauling, 2 Trucks, 7 Days/Each	14	day			$296.00	$398.55	$0	$0	$4,144	$5,580	$9,724
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	1,850	cy		$14.00	$10.00	$5.68	$0	$25,900	$18,500	$10,508	$54,908
Fine Grading and seeding, incl. lime, fert, and seed	2,770	sy		$0.26	$1.19	$0.18	$0	$720	$3,296	$499	$4,515
Oversight (7 days x 8 hrs/day)	56	hrs			$56.00		$0	$0	$3,136	$0	$3,136
					Total Cost		$0	$36,919	$31,548	$21,914	$90,381
Decontamination Pad Construction											
Decon Pad - Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Decon Pads -Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
Decon Pads - 3" SCH 80 PVC Pipe	5	lf		$1.63		$0.00	$0	$8	$0	$0	$8
Decon Pads - Sump Pump (2 for 10.8 months)	21.6	mo				$375.00	$0	$0	$0	$8,100	$8,100
Decon Pads - Sump Construction (1)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
					Total Cost		$0	$837	$0	$8,411	$9,247

Note:

1. The decontamination pad cost for Alternative 4 is less expensive than the decontamination pad for Alternative 3 because the Alternative 4 decontamination pad usage is expected to be only 1 day, where for Alternative 3 decontamination pad is expected to be used day after day for long periods of time.

2. Costs of labor to construct and operate the decontamination pad presented on Table D-63.

Table D-67. (Alternative 4), 216-B-57 Crib Representative Site, Capital Costs 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	34.5	days			$1,720.00		$0	$0	$59,340	$0	$59,340
RCT Decontamination Crew (4 RCTs)	1	days			$1,792.00		$0	$0	$1,792	$0	$1,792
SAMPLING CREWS AND SAMPLING											
Air Sampling Crew (Sampler and RCT)	9	days	$1,000.00		$896.00	$500.00	$9,000	$0	$8,064	$4,500	$21,564
Fluor Hanford Field Cost							$9,000	$0	$69,196	$4,500	$82,696
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$10,379	$0	$10,379
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$675	$675
Fluor Hanford Total Cost							**$9,000**	**$0**	**$79,575**	**$5,175**	**$93,750**
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	1.7	mo				$350.00	$0	$0	$0	$595	$595
Field Office Support	1.7	mo		$139.00			$0	$236	$0	$0	$236
Storage Trailer	1.7	mo				$105.00	$0	$0	$0	$179	$179
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	0.83	ac	$1,748.00				$1,451	$0	$0	$0	$1,451
Site Utilities, Generator and Oiler	1.7	mo			$6,216.00	$1,394.80	$0	$0	$10,567	$2,371	$12,938
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (see Table D-70)	1	ea		$836.86		$1,585.56	$0	$837	$0	$1,586	$2,422

Table D-67. (Alternative 4), 216-B-57 Crib Representative Site, Capital Costs 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler, (add one day for decon)	7	day			$592.00	$1,851.60	$0	$0	$4,144	$12,961	$17,105
Water Truck	6	day			$296.00	$80.00	$0	$0	$1,776	$480	$2,256
DECONTAMINATION											
Water for Decon Process (1,000 gal/month)	50	gal		$0.20			$0	$10	$0	$0	$10
CAPPING											
Grading Fill, Excavate/load from Pit 30 (3,930 cy)	3	day			$592.00	$1,190.17	$0	$0	$1,776	$3,571	$5,347
Grading Fill, Hauling, 5 Trucks, 2 Days/Each (3,930 cy)	15	day			$296.00	$398.55	$0	$0	$4,440	$5,978	$10,418
Grading Fill, Front End Loader	3	day			$296.00	$630.27	$0	$0	$888	$1,891	$2,779
Grading Fill, Bulldozer	3	day			$296.00	$656.42	$0	$0	$888	$1,969	$2,857
Grading Fill, Vibratory Roller	3	day			$296.00	$353.98	$0	$0	$888	$1,062	$1,950
Asphalt Base-course (4" thick)	2,790	sy	$10.70				$29,853	$0	$0	$0	$29,853
Asphalt Paving (6" thick)	2,790	sy	$15.40				$42,966	$0	$0	$0	$42,966
Purchase Lateral Drainage Layer (440 cy)	440	cy		$44.47			$0	$19,567	$0	$0	$19,567
Lateral Drainage Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Lateral Drainage Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Lateral Drainage Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Purchase Gravel Filter Layer (420 cy)	420	cy		$45.67			$0	$19,181	$0	$0	$19,181
Gravel Filter Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Gravel Filter Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Gravel Filter Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Purchase Sand Layer (330 cy)	330	cy		$41.42			$0	$13,669	$0	$0	$13,669
Sand Filter Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Sand Filter Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Sand Filter Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Geotextile (Non-woven)	1,980	sy		$1.10		$0.06	$0	$2,178	$0	$119	$2,297
Compacted Silt Loam, from Pit 30 excavate/load (880 cy)	1.0	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Compacted Silt Loam Hauling, 5 Trucks, .5 Days/Ea	5.0	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Compacted Silt Loam Layer, Front End Loader	1.0	day			$296.00	$630.27	$0	$0	$296	$630	$926
Compacted Silt Loam Layer, Bulldozer	1.0	day			$296.00	$656.42	$0	$0	$296	$656	$952

Table D-67. (Alternative 4), 216-B-57 Crib Representative Site, Capital Costs 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Compacted Silt Loam Layer, Vibratory Roller	1.0	day			$296.00	$353.98	$0	$0	$296	$354	$650
Silt Loam, from Pit 30 excavate/load (900 cy)	1.0	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Purchase Pea Gravel Layer	100	cy		$55.67			$0	$5,567	$0	$0	$5,567
Silt Loam Hauling, 5 Trucks, .5 Day/Each (900 cy)	5.0	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Silt Loam/Pea Gravel Layer, Front End Loader (1,000 cy)	1.0	day			$296.00	$630.27	$0	$0	$296	$630	$926
Silt Loam/Pea Gravel Layer, Bulldozer (1,000 cy)	1.0	day			$296.00	$656.42	$0	$0	$296	$656	$952
Silt Loam/Pea Gravel Layer, Vibratory Roller	1.0	day			$296.00	$353.98	$0	$0	$296	$354	$650
Purchase Riprap	530	cy		$45.42			$0	$24,073	$0	$0	$24,073
Riprap, Front End Loader	1.5	day			$296.00	$630.27	$0	$0	$444	$945	$1,389
Riprap, Hydraulic Excavator	1.5	day			$296.00	$559.90	$0	$0	$444	$840	$1,284
Install Cap Monitoirng System	1	ea		$5,000.00			$0	$5,000	$0	$0	$5,000
Water Truck	11.5	day			$296.00	$80.00	$0	$0	$3,404	$920	$4,324
REVEGETATION											
Fine Grade & Seed Topsoil	1,923	sy		$0.26	$1.19	$0.18	$0	$500	$2,288	$346	$3,134
MISCELLANEOUS											
Support Personnel	34.5	day			$1,896.00		$0	$0	$65,412	$0	$65,412
Labor (4 laborers @ $37/hour)	34.5	day			$1,184.00		$0	$0	$40,848	$0	$40,848
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$74,270	$119,418	$170,467	$60,054	$424,208
Direct Markup on Labor @	25%						$0	$0	$42,617	$0	$42,617
Direct Markup on Materials @	10%						$0	$11,942	$0	$0	$11,942
Direct Markup on Subcontracts @	10%						$7,427	$0	$0	$0	$7,427
Construction Contractor G&A @	26.5%						$19,682	$31,646	$45,174	$15,914	$112,415
Construction Contractor Subtotal							$101,378	$163,005	$258,257	$75,968	$598,608
Fluor Hanford G&A on Construction Contractor Cost @	15%						$15,207	$24,451	$38,739	$11,395	$89,791
Construction Contractor Total Cost							$116,585	$187,456	$296,905	$87,363	$688,399

Table D-67. (Alternative 4), 216-B-57 Crib Representative Site, Capital Costs 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Fluor Hanford Total Cost (From Above)							$9,000	$0	$79,575	$5,175	$93,750
Project Subtotal							$125,585	$187,456	$376,571	$92,538	$782,150
Contingency on Field Costs @	20%										$156,430
TOTAL COST											**$938,579**

Table D-68. (Alternative 4), 216-B-57 Trench Representative Site, Periodic Cost 200-PW-5 Fission Product Rich Process Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$1,792		Cost is based on 16 hrs. for every 50,000 sf (area = 30,186 ft^2) @ $112/hr
Radiation Survey of Surface Soil	$6,000		Cost is based on $1,000 for every 5,000 square feet (area = 30,186 ft^2)
Cover Maintenance	$12,890		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.
TOTALS	**$20,682**	**$20,000**	

Table D-69. (Alternative 4), 216-B-57 Trench Representative Site, Present Worth Analysis 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$938,579		$938,579	1.0000	$938,579
1		$20,682	$20,682	0.9690	$20,041
2		$20,682	$20,682	0.9389	$19,419
3		$20,682	$20,682	0.9098	$18,817
4		$20,682	$20,682	0.8816	$18,234
5		$40,682	$40,682	0.8543	$34,755
6		$20,682	$20,682	0.8278	$17,121
7		$20,682	$20,682	0.8021	$16,589
8		$20,682	$20,682	0.7773	$16,076
9		$20,682	$20,682	0.7532	$15,578
10		$40,682	$40,682	0.7298	$29,690
11		$20,682	$20,682	0.7072	$14,627
12		$20,682	$20,682	0.6852	$14,172
13		$20,682	$20,682	0.6640	$13,733
14		$20,682	$20,682	0.6434	$13,307
15		$40,682	$40,682	0.6235	$25,366
16		$20,682	$20,682	0.6041	$12,494
17		$20,682	$20,682	0.5854	$12,108
18		$20,682	$20,682	0.5672	$11,731
19		$20,682	$20,682	0.5496	$11,367
20		$40,682	$40,682	0.5326	$21,667
21		$20,682	$20,682	0.5161	$10,674
22		$20,682	$20,682	0.5001	$10,343
23		$20,682	$20,682	0.4846	$10,023
24		$20,682	$20,682	0.4696	$9,712
25		$40,682	$40,682	0.4550	$18,511
26		$20,682	$20,682	0.4409	$9,119
27		$20,682	$20,682	0.4272	$8,836
28		$20,682	$20,682	0.4140	$8,563
29		$20,682	$20,682	0.4011	$8,296
30		$40,682	$40,682	0.3887	$15,813
31		$20,682	$20,682	0.3766	$7,789
32		$20,682	$20,682	0.3650	$7,549
33		$20,682	$20,682	0.3536	$7,313
34		$20,682	$20,682	0.3427	$7,088
35		$40,682	$40,682	0.3321	$13,511
36		$20,682	$20,682	0.3218	$6,656
37		$20,682	$20,682	0.3118	$6,449
38		$20,682	$20,682	0.3021	$6,248
39		$20,682	$20,682	0.2927	$6,054
40		$40,682	$40,682	0.2837	$11,542
41		$20,682	$20,682	0.2749	$5,686

Table D-69. (Alternative 4), 216-B-57 Trench Representative Site, Present Worth Analysis 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 2.2%	Present Worth
42		$20,682	$20,682	0.2664	$5,510
43		$20,682	$20,682	0.2581	$5,338
44		$20,682	$20,682	0.2501	$5,173
45		$40,682	$40,682	0.2423	$9,857
46		$20,682	$20,682	0.2348	$4,856
47		$20,682	$20,682	0.2275	$4,705
48		$20,682	$20,682	0.2205	$4,560
49		$20,682	$20,682	0.2136	$4,418
50		$40,682	$40,682	0.2070	$8,421
51		$20,682	$20,682	0.2006	$4,149
52		$20,682	$20,682	0.1944	$4,021
53		$20,682	$20,682	0.1884	$3,897
54		$20,682	$20,682	0.1825	$3,775
55		$40,682	$40,682	0.1769	$7,197
56		$20,682	$20,682	0.1714	$3,545
57		$20,682	$20,682	0.1661	$3,435
58		$20,682	$20,682	0.1609	$3,328
59		$20,682	$20,682	0.1559	$3,224
60		$40,682	$40,682	0.1511	$6,147
61		$20,682	$20,682	0.1464	$3,028
62		$20,682	$20,682	0.1419	$2,935
63		$20,682	$20,682	0.1375	$2,844
64		$20,682	$20,682	0.1332	$2,755
65		$40,682	$40,682	0.1291	$5,252
66		$20,682	$20,682	0.1251	$2,587
67		$20,682	$20,682	0.1212	$2,507
68		$20,682	$20,682	0.1174	$2,428
69		$20,682	$20,682	0.1138	$2,354
70		$40,682	$40,682	0.1103	$4,487
71		$20,682	$20,682	0.1068	$2,209
72		$20,682	$20,682	0.1035	$2,141
73		$20,682	$20,682	0.1003	$2,074
74		$20,682	$20,682	0.0972	$2,010
75		$40,682	$40,682	0.0942	$3,832
76		$20,682	$20,682	0.0913	$1,888
77		$20,682	$20,682	0.0884	$1,828
78		$20,682	$20,682	0.0857	$1,772
79		$20,682	$20,682	0.0830	$1,717
80		$40,682	$40,682	0.0805	$3,275
81		$20,682	$20,682	0.0780	$1,613
82		$20,682	$20,682	0.0756	$1,564
83		$20,682	$20,682	0.0732	$1,514
84		$20,682	$20,682	0.0709	$1,466

Table D-69. (Alternative 4), 216-B-57 Trench Representative Site, Present Worth Analysis 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 5.2%	Present Worth
85		$40,682	$40,682	0.0687	$2,795
86		$20,682	$20,682	0.0666	$1,377
87		$20,682	$20,682	0.0645	$1,334
88		$20,682	$20,682	0.0625	$1,293
89		$20,682	$20,682	0.0606	$1,253
90		$40,682	$40,682	0.0587	$2,388
91		$20,682	$20,682	0.0569	$1,177
92		$20,682	$20,682	0.0551	$1,140
93		$20,682	$20,682	0.0534	$1,104
94		$20,682	$20,682	0.0518	$1,071
95		$40,682	$40,682	0.0502	$2,042
96		$20,682	$20,682	0.0486	$1,005
97		$20,682	$20,682	0.0471	$974
98		$20,682	$20,682	0.0456	$943
99		$20,682	$20,682	0.0442	$914
100		$40,682	$40,682	0.0429	$1,745
101		$20,682	$20,682	0.0415	$858
102		$20,682	$20,682	0.0402	$831
103		$20,682	$20,682	0.0390	$807
104		$20,682	$20,682	0.0378	$782
105		$40,682	$40,682	0.0366	$1,489
106		$20,682	$20,682	0.0355	$734
107		$20,682	$20,682	0.0344	$711
108		$20,682	$20,682	0.0333	$689
109		$20,682	$20,682	0.0323	$668
110		$40,682	$40,682	0.0313	$1,273
111		$20,682	$20,682	0.0303	$627
112		$20,682	$20,682	0.0294	$608
113		$20,682	$20,682	0.0285	$589
114		$20,682	$20,682	0.0276	$571
115		$40,682	$40,682	0.0267	$1,086
116		$20,682	$20,682	0.0259	$536
117		$20,682	$20,682	0.0251	$519
118		$20,682	$20,682	0.0243	$503
119		$20,682	$20,682	0.0236	$488
120		$40,682	$40,682	0.0228	$928
121		$20,682	$20,682	0.0221	$457
122		$20,682	$20,682	0.0214	$443
123		$20,682	$20,682	0.0208	$430
124		$20,682	$20,682	0.0201	$416
125		$40,682	$40,682	0.0195	$793
126		$20,682	$20,682	0.0189	$391
127		$20,682	$20,682	0.0183	$378

Table D-69. (Alternative 4), 216-B-57 Trench Representative Site, Present Worth Analysis 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 2.2%	Present Worth
128		$20,682	$20,682	0.0177	$366
129		$20,682	$20,682	0.0172	$356
130		$40,682	$40,682	0.0167	$679
131		$20,682	$20,682	0.0161	$333
132		$20,682	$20,682	0.0156	$323
133		$20,682	$20,682	0.0152	$314
134		$20,682	$20,682	0.0147	$304
135		$40,682	$40,682	0.0142	$578
136		$20,682	$20,682	0.0138	$285
137		$20,682	$20,682	0.0134	$277
138		$20,682	$20,682	0.0129	$267
139		$20,682	$20,682	0.0125	$259
140		$40,682	$40,682	0.0122	$496
141		$20,682	$20,682	0.0118	$244
142		$20,682	$20,682	0.0114	$236
143		$20,682	$20,682	0.0111	$230
144		$20,682	$20,682	0.0107	$221
145		$40,682	$40,682	0.0104	$423
146		$20,682	$20,682	0.0101	$209
147		$20,682	$20,682	0.0098	$203
148		$20,682	$20,682	0.0094	$194
149		$20,682	$20,682	0.0092	$190
150		$40,682	$40,682	0.0089	$362
				TOTAL PRESENT WORTH	$1,695,393

Table D-70. (Alternative 4), 216-B-57 Crib Representative Site, Calculation Sheet 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Cover Maintenance (Purchase, Deliver, and Place Topsoil) Annual Cost											
Purchase Pea Gravel (includes purchase and delivery)	22	cy		$55.67			$0	$1,225	$0	$0	$1,225
Silt Loam, from Pit 30 excavate/load (201 cy)	1	day			$296.00	$559.90	$0	$0	$296	$560	$856
Silt Loam Hauling, 2 Trucks, 1 Day/Each (201 cy)	2	day			$296.00	$398.55	$0	$0	$592	$797	$1,389
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	223	cy		$14.00	$10.00	$5.68	$0	$3,122	$2,230	$1,267	$6,619
Fine Grading and seeding, incl. lime, fert, and seed	335	sy		$0.26	$1.19	$0.18	$0	$87	$399	$60	$546
Oversight	8	hrs			$56.00		$0	$0	$448	$0	$448
					Total Cost		$0	$4,434	$4,365	$4,092	$12,890
Decontamination Pad Construction											
Decon Pad - Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Decon Pads -Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
Decon Pads - 3" SCH 80 PVC Pipe	5	lf		$1.63		$0.00	$0	$8	$0	$0	$8
Decon Pads - Sump Pump (2 for 1.7 months)	3.4	mo				$375.00	$0	$0	$0	$1,275	$1,275
Decon Pads - Sump Construction (1)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
					Total Cost		$0	$837	$0	$1,586	$2,422

Note:

1. The decontamination pad cost for Alternative 4 is less expensive than the decontamination pad for Alternative 3 because the Alternative 4 decontamination pad usage is expected to be only 1 day, where for Alternative 3 decontamination pad is expected to be used day after day for long periods of time.

2. Costs of labor to construct and operate the decontamination pad presented on Table D-67.

Table D-71. (Alternative 4), 216-B-341 Settling Tank Site, Capital Costs 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	32.5	days			$1,720.00		$0	$0	$55,900	$0	$55,900
RCT Decontamination Crew (4 RCTs)	1	days			$1,792.00		$0	$0	$1,792	$0	$1,792
SAMPLING CREWS AND SAMPLING											
Air Sampling Crew (Sampler and RCT)	7	days	$1,000.00		$896.00	$500.00	$7,000	$0	$6,272	$3,500	$16,772
Fluor Hanford Field Cost							$7,000	$0	$63,964	$3,500	$74,464
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$9,595	$0	$9,595
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$525	$525
Fluor Hanford Total Cost							**$7,000**	**$0**	**$73,559**	**$4,025**	**$84,584**
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	1.6	mo				$350.00	$0	$0	$0	$560	$560
Field Office Support	1.6	mo		$139.00			$0	$222	$0	$0	$222
Storage Trailer	1.6	mo				$105.00	$0	$0	$0	$168	$168
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	0.69	ac	$1,748.00				$1,206	$0	$0	$0	$1,206
Site Utilities, Generator and Oiler	1.6	mo			$6,216.00	$1,394.80	$0	$0	$9,946	$2,232	$12,177
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (see Table D-74)	1	ea		$836.86		$1,510.56	$0	$837	$0	$1,511	$2,347
FILL SETTLING TANK											
Fill Settling Tank with Sand	35,929	gal		$0.23			$0	$8,264	$0	$0	$8,264

Table D-71. (Alternative 4), 216-B-341 Settling Tank Site, Capital Costs 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler, (add one day for decon)	6	day			$592.00	$1,851.60	$0	$0	$3,552	$11,110	$14,662
Water Truck	5	day			$296.00	$80.00	$0	$0	$1,480	$400	$1,880
DECONTAMINATION											
Water for Decon Process (1,000 gal/month)	50	gal		$0.20			$0	$10	$0	$0	$10
CAPPING											
Grading Fill, Excavate and load from Pit 30 (1,350 cy)	1.5	day			$592.00	$1,190.17	$0	$0	$888	$1,785	$2,673
Grading Fill, Hauling, 5 Trucks, 1.5 Days/Each	7.5	day			$296.00	$398.55	$0	$0	$2,220	$2,989	$5,209
Grading Fill, Front End Loader	1.5	day			$296.00	$630.27	$0	$0	$444	$945	$1,389
Grading Fill, Bulldozer	1.5	day			$296.00	$656.42	$0	$0	$444	$985	$1,429
Grading Fill, Vibratory Roller	1.5	day			$296.00	$353.98	$0	$0	$444	$531	$975
Asphalt Base-course (4" thick)	2,590	sy	$10.70				$27,713	$0	$0	$0	$27,713
Asphalt Paving (6" thick)	2,590	sy	$15.40				$39,886	$0	$0	$0	$39,886
Purchase Lateral Drainage Layer (800 cy)	800	cy		$44.47			$0	$35,576	$0	$0	$35,576
Lateral Drainage Layer, Front End Loader	1	day			$296.00	$630.27	$0	$0	$296	$630	$926
Lateral Drainage Layer, Bulldozer	1	day			$296.00	$656.42	$0	$0	$296	$656	$952
Lateral Drainage Layer, Vibratory Roller	1	day			$296.00	$353.98	$0	$0	$296	$354	$650
Purchase Gravel Filter Layer (270 cy)	270	cy		$45.67			$0	$12,331	$0	$0	$12,331
Purchase Riprap	5,260	cy		$45.42			$0	$238,909	$0	$0	$238,909
Riprap, Front End Loader	4.5	day			$592.00	$630.27	$0	$0	$2,664	$2,836	$5,500
Riprap, Bulldozer	4.5	day			$592.00	$656.42	$0	$0	$2,664	$2,954	$5,618
Riprap, Vibratory Roller	4.5	day			$592.00	$353.98	$0	$0	$2,664	$1,593	$4,257
Gravel Filter Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Gravel Filter Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Gravel Filter Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Purchase Sand Layer (130 cy)	130	cy		$41.42			$0	$5,385	$0	$0	$5,385
Sand Filter Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Sand Filter Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Sand Filter Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Compacted Silt Loam, from Pit 30 excavate/load (660 cy)	0.5	day			$592.00	$1,190.17	$0	$0	$296	$595	$891

Table D-71. (Alternative 4), 216-B-341 Settling Tank Site, Capital Costs 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Compacted Silt Loam Hauling, 5 Trucks, .5 Days/Ea	2.5	day			$296.00	$398.55	$0	$0	$740	$996	$1,736
Compacted Silt Loam Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Compacted Silt Loam Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Compacted Silt Loam Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Silt Loam, from Pit 30 excavate/load (828 cy)	1	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Purchase Pea Gravel Layer	92	cy		$55.67			$0	$5,122	$0	$0	$5,122
Silt Loam Hauling, 5 Trucks, 1 Day/Each	5	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Silt Loam/Pea Gravel Layer, Front End Loader (920 cy)	1	day			$296.00	$630.27	$0	$0	$296	$630	$926
Silt Loam/Pea Gravel Layer, Bulldozer (920 cy)	1	day			$296.00	$656.42	$0	$0	$296	$656	$952
Silt Loam/Pea Gravel Layer, Vibratory Roller	1	day			$296.00	$353.98	$0	$0	$296	$354	$650
Install Cap Monitoirng System	1	ea		$5,000.00			$0	$5,000	$0	$0	$5,000
Water Truck	11.5	day			$296.00	$80.00	$0	$0	$3,404	$920	$4,324
REVEGETATION											
Fine Grade & Seed Topsoil	954	sy		$0.26	$1.19	$0.18	$0	$248	$1,135	$172	$1,555
MISCELLANEOUS											
Support Personnel	32.5	day			$1,896.00		$0	$0	$61,620	$0	$61,620
Labor (4 laborers @ $37/hour)	32.5	day			$1,184.00		$0	$0	$38,480	$0	$38,480
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000

Construction Contractor Field Cost		$68,805	$340,503	$163,272	$54,340	$626,920
Direct Markup on Labor @	25%	$0	$0	$40,818	$0	$40,818
Direct Markup on Materials @	10%	$0	$34,050	$0	$0	$34,050
Direct Markup on Subcontracts @	10%	$6,881	$0	$0	$0	$6,881
Construction Contractor G&A @	26.5%	$18,233	$90,233	$43,267	$14,400	$166,134
Construction Contractor Subtotal		$93,919	$464,787	$247,357	$68,740	$874,803
Fluor Hanford G&A on Construction Contractor Cost @	15%	$14,088	$69,718	$37,104	$10,311	$131,200
Construction Contractor Total Cost		$108,007	$534,505	$284,460	$79,051	$1,006,023

Table D-71. (Alternative 4), 216-B-341 Settling Tank Site, Capital Costs 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Fluor Hanford Total Cost (From Above)							$7,000	$0	$73,559	$4,025	$84,584
Project Subtotal							$115,007	$534,505	$358,019	$83,076	$1,090,607
Contingency on Field Costs @	20%										$218,121
Total Cost Minus Sludge Removal											$1,308,728
Sludge Removal											$6,000,000
TOTAL COST											**$7,308,728**

Table D-72. (Alternative 4), 216-B-361 Settling Tank Representative Site, Periodic Cost 200-TW-1 Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$1,792		Cost is based on 16 hrs. for every 50,000 sf (area = 25,173 ft^2) @ $112/hr
Radiation Survey of Surface Soil	$5,000		Cost is based on $1,000 for every 5,000 square feet (area = 25,173 ft^2)
Cover Maintenance	$11,536		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet Table D-69.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.
TOTALS	**$18,328**	**$20,000**	

Table D-73. (Alternative 4), 216-B-361 Settling Tank Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$7,308,728		$7,308,728	1.0000	$7,308,728
1		$18,328	$18,328	0.9690	$17,759
2		$18,328	$18,328	0.9389	$17,208
3		$18,328	$18,328	0.9098	$16,674
4		$18,328	$18,328	0.8816	$16,158
5		$38,328	$38,328	0.8543	$32,743
6		$18,328	$18,328	0.8278	$15,172
7		$18,328	$18,328	0.8021	$14,701
8		$18,328	$18,328	0.7773	$14,246
9		$18,328	$18,328	0.7532	$13,804
10		$38,328	$38,328	0.7298	$27,971
11		$18,328	$18,328	0.7072	$12,961
12		$18,328	$18,328	0.6852	$12,558
13		$18,328	$18,328	0.6640	$12,170
14		$18,328	$18,328	0.6434	$11,792
15		$38,328	$38,328	0.6235	$23,897
16		$18,328	$18,328	0.6041	$11,072
17		$18,328	$18,328	0.5854	$10,729
18		$18,328	$18,328	0.5672	$10,395
19		$18,328	$18,328	0.5496	$10,073
20		$38,328	$38,328	0.5326	$20,413
21		$18,328	$18,328	0.5161	$9,459
22		$18,328	$18,328	0.5001	$9,166
23		$18,328	$18,328	0.4846	$8,882
24		$18,328	$18,328	0.4696	$8,607
25		$38,328	$38,328	0.4550	$17,439
26		$18,328	$18,328	0.4409	$8,081
27		$18,328	$18,328	0.4272	$7,830
28		$18,328	$18,328	0.4140	$7,588
29		$18,328	$18,328	0.4011	$7,351
30		$38,328	$38,328	0.3887	$14,898
31		$18,328	$18,328	0.3766	$6,902
32		$18,328	$18,328	0.3650	$6,690
33		$18,328	$18,328	0.3536	$6,481
34		$18,328	$18,328	0.3427	$6,281
35		$38,328	$38,328	0.3321	$12,729
36		$18,328	$18,328	0.3218	$5,898
37		$18,328	$18,328	0.3118	$5,715
38		$18,328	$18,328	0.3021	$5,537
39		$18,328	$18,328	0.2927	$5,364
40		$38,328	$38,328	0.2837	$10,874

Table D-73. (Alternative 4), 216-B-361 Settling Tank Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.5%	Present Worth
41		$18,328	$18,328	0.2749	$5,038
42		$18,328	$18,328	0.2664	$4,882
43		$18,328	$18,328	0.2581	$4,730
44		$18,328	$18,328	0.2501	$4,584
45		$38,328	$38,328	0.2423	$9,287
46		$18,328	$18,328	0.2348	$4,303
47		$18,328	$18,328	0.2275	$4,170
48		$18,328	$18,328	0.2205	$4,041
49		$18,328	$18,328	0.2136	$3,915
50		$38,328	$38,328	0.2070	$7,934
51		$18,328	$18,328	0.2006	$3,677
52		$18,328	$18,328	0.1944	$3,563
53		$18,328	$18,328	0.1884	$3,453
54		$18,328	$18,328	0.1825	$3,345
55		$38,328	$38,328	0.1769	$6,780
56		$18,328	$18,328	0.1714	$3,141
57		$18,328	$18,328	0.1661	$3,044
58		$18,328	$18,328	0.1609	$2,949
59		$18,328	$18,328	0.1559	$2,857
60		$38,328	$38,328	0.1511	$5,791
61		$18,328	$18,328	0.1464	$2,683
62		$18,328	$18,328	0.1419	$2,601
63		$18,328	$18,328	0.1375	$2,520
64		$18,328	$18,328	0.1332	$2,441
65		$38,328	$38,328	0.1291	$4,948
66		$18,328	$18,328	0.1251	$2,293
67		$18,328	$18,328	0.1212	$2,221
68		$18,328	$18,328	0.1174	$2,152
69		$18,328	$18,328	0.1138	$2,086
70		$38,328	$38,328	0.1103	$4,228
71		$18,328	$18,328	0.1068	$1,957
72		$18,328	$18,328	0.1035	$1,897
73		$18,328	$18,328	0.1003	$1,838
74		$18,328	$18,328	0.0972	$1,781
75		$38,328	$38,328	0.0942	$3,610
76		$18,328	$18,328	0.0913	$1,673
77		$18,328	$18,328	0.0884	$1,620
78		$18,328	$18,328	0.0857	$1,571
79		$18,328	$18,328	0.0830	$1,521
80		$38,328	$38,328	0.0805	$3,085
81		$18,328	$18,328	0.0780	$1,430
82		$18,328	$18,328	0.0756	$1,386
83		$18,328	$18,328	0.0732	$1,342

Table D-73. (Alternative 4), 216-B-361 Settling Tank Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
84		$18,328	$18,328	0.0709	$1,299
85		$38,328	$38,328	0.0687	$2,633
86		$18,328	$18,328	0.0666	$1,221
87		$18,328	$18,328	0.0645	$1,182
88		$18,328	$18,328	0.0625	$1,145
89		$18,328	$18,328	0.0606	$1,111
90		$38,328	$38,328	0.0587	$2,250
91		$18,328	$18,328	0.0569	$1,043
92		$18,328	$18,328	0.0551	$1,010
93		$18,328	$18,328	0.0534	$979
94		$18,328	$18,328	0.0518	$949
95		$38,328	$38,328	0.0502	$1,924
96		$18,328	$18,328	0.0486	$891
97		$18,328	$18,328	0.0471	$863
98		$18,328	$18,328	0.0456	$836
99		$18,328	$18,328	0.0442	$810
100		$38,328	$38,328	0.0429	$1,644
101		$18,328	$18,328	0.0415	$761
102		$18,328	$18,328	0.0402	$737
103		$18,328	$18,328	0.0390	$715
104		$18,328	$18,328	0.0378	$693
105		$38,328	$38,328	0.0366	$1,403
106		$18,328	$18,328	0.0355	$651
107		$18,328	$18,328	0.0344	$630
108		$18,328	$18,328	0.0333	$610
109		$18,328	$18,328	0.0323	$592
110		$38,328	$38,328	0.0313	$1,200
111		$18,328	$18,328	0.0303	$555
112		$18,328	$18,328	0.0294	$539
113		$18,328	$18,328	0.0285	$522
114		$18,328	$18,328	0.0276	$506
115		$38,328	$38,328	0.0267	$1,023
116		$18,328	$18,328	0.0259	$475
117		$18,328	$18,328	0.0251	$460
118		$18,328	$18,328	0.0243	$445
119		$18,328	$18,328	0.0236	$433
120		$38,328	$38,328	0.0228	$874
121		$18,328	$18,328	0.0221	$405
122		$18,328	$18,328	0.0214	$392
123		$18,328	$18,328	0.0208	$381
124		$18,328	$18,328	0.0201	$368
125		$38,328	$38,328	0.0195	$747
126		$18,328	$18,328	0.0189	$346

Table D-73. (Alternative 4), 216-B-361 Settling Tank Site, Present Worth Analysis 200-TW-2 Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
127		$18,328	$18,328	0.0183	$335
128		$18,328	$18,328	0.0177	$324
129		$18,328	$18,328	0.0172	$315
130		$38,328	$38,328	0.0167	$640
131		$18,328	$18,328	0.0161	$295
132		$18,328	$18,328	0.0156	$286
133		$18,328	$18,328	0.0152	$279
134		$18,328	$18,328	0.0147	$269
135		$38,328	$38,328	0.0142	$544
136		$18,328	$18,328	0.0138	$253
137		$18,328	$18,328	0.0134	$246
138		$18,328	$18,328	0.0129	$236
139		$38,328	$38,328	0.0125	$479
140		$18,328	$18,328	0.0122	$224
141		$18,328	$18,328	0.0118	$216
142		$18,328	$18,328	0.0114	$209
143		$18,328	$18,328	0.0111	$203
144		$18,328	$18,328	0.0107	$196
145		$38,328	$38,328	0.0104	$399
146		$18,328	$18,328	0.0101	$185
147		$18,328	$18,328	0.0098	$180
148		$18,328	$18,328	0.0094	$172
149		$18,328	$18,328	0.0092	$169
150		$38,328	$38,328	0.0089	$341
				TOTAL PRESENT WORTH	$7,992,611

Table D-74. (Alternative 4), 216-B-341 Settling Tank Site, Calculation Sheet 200-TW-2 Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Cover Maintenance (Purchase, Deliver, and Place Topsoil) Annual Cost											
Purchase Pea Gravel (includes purchase and delivery)	19	cy		$55.67			$0	$1,058	$0	$0	$1,058
Silt Loam, from Pit 30 excavate/load (167 cy)	1	day			$296.00	$559.90	$0	$0	$296	$560	$856
Silt Loam Hauling, 2 Trucks, .5 Day/Each (90 cy)	2	day			$296.00	$398.55	$0	$0	$592	$797	$1,389
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	186	cy		$14.00	$10.00	$5.68	$0	$2,604	$1,860	$1,056	$5,520
Fine Grading and seeding, incl. lime, fert, and seed	280	sy		$0.26	$1.19	$0.18	$0	$73	$333	$50	$456
Oversight (1 day x 8 hr/day)	8	hrs			$56.00		$0	$0	$448	$0	$448
					Total Cost		$0	$3,735	$3,929	$3,872	$11,536
Decontamination Pad Construction											
Decon Pad - Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Decon Pads -Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
Decon Pads - 3" SCH 80 PVC Pipe	5	lf		$1.63		$0.00	$0	$8	$0	$0	$8
Decon Pads - Sump Pump (2 for 1.6 months)	3.2	mo				$375.00	$0	$0	$0	$1,200	$1,200
Decon Pads - Sump Construction (1)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
					Total Cost		$0	$837	$0	$1,511	$2,347

Note:

1. The decontamination pad cost for Alternative 4 is less expensive than the decontamination pad for Alternative 3 because the Alternative 4 decontamination pad usage is expected to be only 1 day, where for Alternative 3 decontamination pad is expected to be

2. Costs of labor to construct and operate the decontamination pad presented on Table D-71.

Table D-75. (Alternative 4), 216-B-58 Trench Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	38	days			$1,720.00		$0	$0	$65,360	$0	$65,360
RCT Decontamination Crew (4 RCTs)	1	days			$1,792.00		$0	$0	$1,792	$0	$1,792
SAMPLING CREWS AND SAMPLING											
Air Sampling Crew (Sampler and RCT)	9.0	days	$1,000.00		$896.00	$500.00	$9,000	$0	$8,064	$4,500	$21,564
Fluor Hanford Field Cost							$9,000	$0	$75,216	$4,500	$88,716
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$11,282	$0	$11,282
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$675	$675
Fluor Hanford Total Cost							**$9,000**	**$0**	**$86,498**	**$5,175**	**$100,673**
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	1.8	mo				$350.00	$0	$0	$0	$630	$630
Field Office Support	1.8	mo		$139.00			$0	$250	$0	$0	$250
Storage Trailer	1.8	mo				$105.00	$0	$0	$0	$189	$189
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	0.79	ac	$1,748.00				$1,381	$0	$0	$0	$1,381
Site Utilities, Generator and Oiler	1.8	mo			$6,216.00	$1,394.80	$0	$0	$11,189	$2,511	$13,699
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (see Table D-50)	1	ea		$836.86	$0.00	$1,360.56	$0	$837	$0	$1,361	$2,197
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler, (add one day for decon)	7	day			$592.00	$1,851.60	$0	$0	$4,144	$12,961	$17,105

Table D-75. (Alternative 4), 216-B-58 Trench Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Water Truck	6	day			$296.00	$80.00	$0	$0	$1,776	$480	$2,256
DECONTAMINATION											
Water for Decon Process (1,000 gal/month)	50	gal		$0.20			$0	$10	$0	$0	$10
CAPPING											
Grading Fill, Excavate and load from Pit 30 (3,754 cy)	3.0	day			$592.00	$1,190.17	$0	$0	$1,776	$3,571	$5,347
Grading Fill, Hauling, 5 Trucks, 3 Days/Each	15.0	day			$296.00	$398.55	$0	$0	$4,440	$5,978	$10,418
Grading Fill, Front End Loader	3.0	day			$296.00	$630.27	$0	$0	$888	$1,891	$2,779
Grading Fill, Bulldozer	3.0	day			$296.00	$656.42	$0	$0	$888	$1,969	$2,857
Grading Fill, Vibratory Roller	3.0	day			$296.00	$353.98	$0	$0	$888	$1,062	$1,950
Asphalt Base-course (4" thick)	2,640	sy	$10.70				$28,248	$0	$0	$0	$28,248
Asphalt Paving (6" thick)	2,640	sy	$15.40				$40,656	$0	$0	$0	$40,656
Purchase Lateral Drainage Layer (410 cy)	410	cy		$44.47			$0	$18,233	$0	$0	$18,233
Lateral Drainage Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Lateral Drainage Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Lateral Drainage Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Purchase Gravel Filter Layer (400 cy)	400	cy		$45.67			$0	$18,268	$0	$0	$18,268
Gravel Filter Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Gravel Filter Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Gravel Filter Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Purchase Sand Layer (305 cy)	305	cy		$41.42			$0	$12,633	$0	$0	$12,633
Sand Filter Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Sand Filter Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Sand Filter Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Geotextile (Non-woven)	1,830	sy		$1.10		$0.06	$0	$2,013	$0	$110	$2,123
Compacted Silt Loam, from Pit 30 excavate/load (800 cy)	1.0	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Compacted Silt Loam Hauling, 5 Trucks, 1 Days/Ea	5.0	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Compacted Silt Loam Layer, Front End Loader	1.0	day			$296.00	$630.27	$0	$0	$296	$630	$926
Compacted Silt Loam Layer, Bulldozer	1.0	day			$296.00	$656.42	$0	$0	$296	$656	$952
Compacted Silt Loam Layer, Vibratory Roller	1.0	day			$296.00	$353.98	$0	$0	$296	$354	$650
Silt Loam, from Pit 30 excavate/load (837 cy)	1.0	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Purchase Pea Gravel Layer	93	cy		$55.67			$0	$5,177	$0	$0	$5,177

Table D-75. (Alternative 4), 216-B-58 Trench Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Silt Loam Hauling, 5 Trucks, 1 Day/Each	5.0	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Silt Loam/Pea Gravel Layer, Front End Loader (930 cy)	1.0	day			$296.00	$630.27	$0	$0	$296	$630	$926
Silt Loam/Pea Gravel Layer, Bulldozer (930 cy)	1.0	day			$296.00	$656.42	$0	$0	$296	$656	$952
Silt Loam/Pea Gravel Layer, Vibratory Roller	1.0	day			$296.00	$353.98	$0	$0	$296	$354	$650
Purchase Riprap	525	cy		$45.42			$0	$23,846	$0	$0	$23,846
Riprap, Front End Loader	1.5	day			$296.00	$630.27	$0	$0	$444	$945	$1,389
Riprap, Hydraulic Excavator	1.5	day			$296.00	$559.90	$0	$0	$444	$840	$1,284
Install Cap Monitoirng System	1	ea		$5,000.00			$0	$5,000	$0	$0	$5,000
Water Truck	15	day			$296.00	$80.00	$0	$0	$4,440	$1,200	$5,640
REVEGETATION											
Fine Grade & Seed Topsoil	1,783	sy		$0.26	$1.19	$0.18	$0	$464	$2,122	$321	$2,906
MISCELLANEOUS											
Support Personnel	38	day			$1,896.00		$0	$0	$72,048	$0	$72,048
Labor (4 laborers @ $37/hour)	38	day			$1,184.00		$0	$0	$44,992	$0	$44,992
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$70,285	$115,330	$182,738	$60,259	$428,612
Direct Markup on Labor @	25%						$0	$0	$45,684	$0	$45,684
Direct Markup on Materials @	10%						$0	$11,533	$0	$0	$11,533
Direct Markup on Subcontracts @	10%						$7,028	$0	$0	$0	$7,028
Construction Contractor G&A @	26.5%						$18,626	$30,563	$48,425	$15,969	$113,582
Construction Contractor Subtotal							$95,939	$157,426	$276,847	$76,228	$606,440
Fluor Hanford G&A on Construction Contractor Cost @	15%						$14,391	$23,614	$41,527	$11,434	$90,966
Construction Contractor Total Cost							$110,330	$181,040	$318,375	$87,662	$697,406
Fluor Hanford Total Cost (From Above)							$9,000	$0	$86,498	$5,175	$100,673

Table D-75. (Alternative 4), 216-B-58 Trench Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Project Subtotal							$119,330	$181,040	$404,873	$92,837	$798,080
Contingency on Field Costs @	20%										$159,616
TOTAL COST											**$957,696**

Table D-76. (Alternative 4), 216-B-58 Trench Representative Site, Periodic Cost 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$1,792		Cost is based on 16 hrs. for every 50,000 sf (area = 28,739 ft^2) @ $112/hr
Radiation Survey of Surface Soil	$6,000		Cost is based on $1,000 for every 5,000 square feet (area = 28,739 ft^2)
Cover Maintenance	$12,514		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.
TOTALS	**$20,306**	**$20,000**	

Table D-77. (Alternative 4), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$957,696		$957,696	1.0000	$957,696
1		$20,306	$20,306	0.9690	$19,676
2		$20,306	$20,306	0.9389	$19,065
3		$20,306	$20,306	0.9098	$18,474
4		$20,306	$20,306	0.8816	$17,901
5		$40,306	$40,306	0.8543	$34,433
6		$20,306	$20,306	0.8278	$16,809
7		$20,306	$20,306	0.8021	$16,287
8		$20,306	$20,306	0.7773	$15,783
9		$20,306	$20,306	0.7532	$15,294
10		$40,306	$40,306	0.7298	$29,415
11		$20,306	$20,306	0.7072	$14,360
12		$20,306	$20,306	0.6852	$13,913
13		$20,306	$20,306	0.6640	$13,483
14		$20,306	$20,306	0.6434	$13,065
15		$40,306	$40,306	0.6235	$25,130
16		$20,306	$20,306	0.6041	$12,267
17		$20,306	$20,306	0.5854	$11,887
18		$20,306	$20,306	0.5672	$11,517
19		$20,306	$20,306	0.5496	$11,160
20		$40,306	$40,306	0.5326	$21,467
21		$20,306	$20,306	0.5161	$10,480
22		$20,306	$20,306	0.5001	$10,155
23		$20,306	$20,306	0.4846	$9,840
24		$20,306	$20,306	0.4696	$9,535
25		$40,306	$40,306	0.4550	$18,339
26		$20,306	$20,306	0.4409	$8,953
27		$20,306	$20,306	0.4272	$8,675
28		$20,306	$20,306	0.4140	$8,406
29		$20,306	$20,306	0.4011	$8,145
30		$40,306	$40,306	0.3887	$15,667
31		$20,306	$20,306	0.3766	$7,647
32		$20,306	$20,306	0.3650	$7,412
33		$20,306	$20,306	0.3536	$7,180
34		$20,306	$20,306	0.3427	$6,959
35		$40,306	$40,306	0.3321	$13,385
36		$20,306	$20,306	0.3218	$6,534
37		$20,306	$20,306	0.3118	$6,331
38		$20,306	$20,306	0.3021	$6,134
39		$20,306	$20,306	0.2927	$5,943
40		$40,306	$40,306	0.2837	$11,435
41		$20,306	$20,306	0.2749	$5,582

Table D-77. (Alternative 4), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate=3.2%	Present Worth
42		$20,306	$20,306	0.2664	$5,409
43		$20,306	$20,306	0.2581	$5,241
44		$20,306	$20,306	0.2501	$5,078
45		$40,306	$40,306	0.2423	$9,766
46		$20,306	$20,306	0.2348	$4,768
47		$20,306	$20,306	0.2275	$4,620
48		$20,306	$20,306	0.2205	$4,477
49		$20,306	$20,306	0.2136	$4,337
50		$40,306	$40,306	0.2070	$8,343
51		$20,306	$20,306	0.2006	$4,073
52		$20,306	$20,306	0.1944	$3,947
53		$20,306	$20,306	0.1884	$3,826
54		$20,306	$20,306	0.1825	$3,706
55		$40,306	$40,306	0.1769	$7,130
56		$20,306	$20,306	0.1714	$3,480
57		$20,306	$20,306	0.1661	$3,373
58		$20,306	$20,306	0.1609	$3,267
59		$20,306	$20,306	0.1559	$3,166
60		$40,306	$40,306	0.1511	$6,090
61		$20,306	$20,306	0.1464	$2,973
62		$20,306	$20,306	0.1419	$2,881
63		$20,306	$20,306	0.1375	$2,792
64		$20,306	$20,306	0.1332	$2,705
65		$40,306	$40,306	0.1291	$5,203
66		$20,306	$20,306	0.1251	$2,540
67		$20,306	$20,306	0.1212	$2,461
68		$20,306	$20,306	0.1174	$2,384
69		$20,306	$20,306	0.1138	$2,311
70		$40,306	$40,306	0.1103	$4,446
71		$20,306	$20,306	0.1068	$2,169
72		$20,306	$20,306	0.1035	$2,102
73		$20,306	$20,306	0.1003	$2,037
74		$20,306	$20,306	0.0972	$1,974
75		$40,306	$40,306	0.0942	$3,797
76		$20,306	$20,306	0.0913	$1,854
77		$20,306	$20,306	0.0884	$1,795
78		$20,306	$20,306	0.0857	$1,740
79		$20,306	$20,306	0.0830	$1,685
80		$40,306	$40,306	0.0805	$3,245
81		$20,306	$20,306	0.0780	$1,584
82		$20,306	$20,306	0.0756	$1,535
83		$20,306	$20,306	0.0732	$1,486
84		$20,306	$20,306	0.0709	$1,440

Table D-77. (Alternative 4), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
85		$40,306	$40,306	0.0687	$2,769
86		$20,306	$20,306	0.0666	$1,352
87		$20,306	$20,306	0.0645	$1,310
88		$20,306	$20,306	0.0625	$1,269
89		$20,306	$20,306	0.0606	$1,231
90		$40,306	$40,306	0.0587	$2,366
91		$20,306	$20,306	0.0569	$1,155
92		$20,306	$20,306	0.0551	$1,119
93		$20,306	$20,306	0.0534	$1,084
94		$20,306	$20,306	0.0518	$1,052
95		$40,306	$40,306	0.0502	$2,023
96		$20,306	$20,306	0.0486	$987
97		$20,306	$20,306	0.0471	$956
98		$20,306	$20,306	0.0456	$926
99		$20,306	$20,306	0.0442	$898
100		$40,306	$40,306	0.0429	$1,729
101		$20,306	$20,306	0.0415	$843
102		$20,306	$20,306	0.0402	$816
103		$20,306	$20,306	0.0390	$792
104		$20,306	$20,306	0.0378	$768
105		$40,306	$40,306	0.0366	$1,475
106		$20,306	$20,306	0.0355	$721
107		$20,306	$20,306	0.0344	$699
108		$20,306	$20,306	0.0333	$676
109		$20,306	$20,306	0.0323	$656
110		$40,306	$40,306	0.0313	$1,262
111		$20,306	$20,306	0.0303	$615
112		$20,306	$20,306	0.0294	$597
113		$20,306	$20,306	0.0285	$579
114		$20,306	$20,306	0.0276	$560
115		$40,306	$40,306	0.0267	$1,076
116		$20,306	$20,306	0.0259	$526
117		$20,306	$20,306	0.0251	$510
118		$20,306	$20,306	0.0243	$493
119		$20,306	$20,306	0.0236	$479
120		$40,306	$40,306	0.0228	$919
121		$20,306	$20,306	0.0221	$449
122		$20,306	$20,306	0.0214	$435
123		$20,306	$20,306	0.0208	$422
124		$20,306	$20,306	0.0201	$408
125		$40,306	$40,306	0.0195	$786
126		$20,306	$20,306	0.0189	$384
127		$20,306	$20,306	0.0183	$372

Table D-77. (Alternative 4), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 Pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate of 2.5%	Present Worth
128		$20,306	$20,306	0.0177	$359
129		$20,306	$20,306	0.0172	$349
130		$40,306	$40,306	0.0167	$673
131		$20,306	$20,306	0.0161	$327
132		$20,306	$20,306	0.0156	$317
133		$20,306	$20,306	0.0152	$309
134		$20,306	$20,306	0.0147	$298
135		$40,306	$40,306	0.0142	$572
136		$20,306	$20,306	0.0138	$280
137		$20,306	$20,306	0.0134	$272
138		$20,306	$20,306	0.0129	$262
139		$20,306	$20,306	0.0125	$254
140		$40,306	$40,306	0.0122	$492
141		$20,306	$20,306	0.0118	$240
142		$20,306	$20,306	0.0114	$231
143		$20,306	$20,306	0.0111	$225
144		$20,306	$20,306	0.0107	$217
145		$40,306	$40,306	0.0104	$419
146		$20,306	$20,306	0.0101	$205
147		$20,306	$20,306	0.0098	$199
148		$20,306	$20,306	0.0094	$191
149		$20,306	$20,306	0.0092	$187
150		$40,306	$40,306	0.0089	$359
				TOTAL PRESENT WORTH	$1,702,834

Table D-78. (Alternative 4), 216-B-58 Trench Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Cover Maintenance (Purchase, Deliver, and Place Topsoil) Annual Cost											
Purchase Pea Gravel (includes purchase and delivery)	21	cy		$55.67			$0	$1,169	$0	$0	$1,169
Silt Loam, from Pit 30 excavate/load (192 cy)	1	day			$296.00	$559.90	$0	$0	$296	$560	$856
Silt Loam Hauling, 2 Trucks, 1 Day/Each (192cy)	2	day			$296.00	$398.55	$0	$0	$592	$797	$1,389
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	213	cy		$14.00	$10.00	$5.68	$0	$2,982	$2,130	$1,210	$6,322
Fine Grading and seeding, incl. lime, fert, and seed	320	sy		$0.26	$1.19	$0.18	$0	$83	$381	$58	$522
Oversight (1 day x 8 hr/day)	8	hrs			$56.00		$0	$0	$448	$0	$448
					Total Cost		$0	$4,234	$4,247	$4,032	$12,514
Decontamination Pad Construction											
Decon Pad - Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Decon Pads -Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
Decon Pads - 3" SCH 80 PVC Pipe	5	lf		$1.63		$0.00	$0	$8	$0	$0	$8
Decon Pads - Sump Pump (2 for 1.4 months)	2.8	mo				$375.00	$0	$0	$0	$1,050	$1,050
Decon Pads - Sump Construction (1)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
					Total Cost		$0	$837	$0	$1,361	$2,197

Note:

1. The decontamination pad cost for Alternative 4 is less expensive than the decontamination pad for Alternative 3 because the Alternative 4 decontamination pad usage is expected to be only 1 day, where for Alternative 3 decontamination pad is expected to be

2. Costs of labor to construct and operate the decontamination pad presented on Table D-75.

Alternative 5, Partial Removal and Capping, costs are presented for the representative waste sites in Table D-79 through D-102

Table D-79. (Alternative 5), 216-T-26 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	49	days			$1,720.00		$0	$0	$84,280	$0	$84,280
RCT Decontamination Crew (4 RCTs)	10	days			$1,792.00		$0	$0	$17,920	$0	$17,920
RCT on Excavator (1)	17.5	days			$448.00		$0	$0	$7,840	$0	$7,840
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845 lcy Contaminated Soil, or 6 Min)	1	ea	$5,000.00				$5,000	$0	$0	$0	$5,000
QC Samples (5% of Total Samples or 1 minimum)	1	ea	$5,000.00				$5,000	$0	$0	$0	$5,000
Air Sampling and Crew (Sampler and RCT)	19	days	$1,000.00		$896.00	$500.00	$19,000	$0	$17,024	$9,500	$45,524
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	17.5	days			$672.00		$0	$0	$11,760	$0	$11,760
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	400	ea	$1,100.00				$440,000	$0	$0	$0	$440,000
Fluor Hanford Field Cost							$475,600	$0	$138,824	$9,500	$623,924
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$20,824	$0	$20,824
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$1,425	$1,425
Fluor Hanford Total Cost							**$475,600**	**$0**	**$159,648**	**$10,925**	**$646,173**
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	2.3	mo				$350.00	$0	$0	$0	$805	$805

Table D-79. (Alternative 5), 216-T-26 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Field Office Support	2.3	mo		$139.00			$0	$320	$0	$0	$320
Storage Trailer	2.3	mo				$105.00	$0	$0	$0	$242	$242
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	0.62	ac	$1,748.00				$1,084	$0	$0	$0	$1,084
Site Utilities, Generator and Oiler	2.3	mo			$6,216.00	$1,394.80	$0	$0	$14,297	$3,208	$17,505
Install Temporary Fence (Blaze Orange)	720	lf		$1.63	$1.16		$0	$1,174	$835	$0	$2,009
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (See Table D-34)	1	ea		$6,682.86	$5,920.00	$310.56	$0	$6,683	$5,920	$311	$12,913
DECONTAMINATION											
Decontamination Crew (4 Laborers)	10	day			$1,184.00		$0	$0	$11,840	$0	$11,840
Water for Decon Process (1,000 gal/month)	500	gal		$0.20			$0	$100	$0	$0	$100
EXCAVATION											
Water Truck	17.5	day			$296.00	$80.00	$0	$0	$5,180	$1,400	$6,580
Hydraulic Excavator	17.5	day			$296.00	$559.90	$0	$0	$5,180	$9,798	$14,978
Front End Loader	17.5	day			$296.00	$630.27	$0	$0	$5,180	$11,030	$16,210
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler	1	day			$592.00	$1,851.60	$0	$0	$592	$1,852	$2,444
Water Truck	1	day			$296.00	$80.00	$0	$0	$296	$80	$376
SITE RESTORATION											
Fill soil, Front End Loader (833 cy no compaction)	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Fill soil, Bulldozer (833 cy no compaction)	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Fill soil, Front End Loader (12,100 cy)	8.5	day			$296.00	$630.27	$0	$0	$2,516	$5,357	$7,873
Fill soil, Bulldozer (12,100 cy)	8.5	day			$296.00	$656.42	$0	$0	$2,516	$5,580	$8,096
Fill soil, Vibratory Roller (12,100 cy)	8.5	day			$296.00	$353.98	$0	$0	$2,516	$3,009	$5,525
Fill soil, Excavate and load from Pit 30 (1,803 cy)	1.5	day			$592.00	$1,190.17	$0	$0	$888	$1,785	$2,673
Fill soil, Hauling, 5 Trucks, 1.5 Days/Each	7.5	day			$296.00	$398.55	$0	$0	$2,220	$2,989	$5,209
Fill soil, Front End Loader	1.5	day			$296.00	$630.27	$0	$0	$444	$945	$1,389
Fill soil, Bulldozer	1.5	day			$296.00	$656.42	$0	$0	$444	$985	$1,429

Table D-79. (Alternative 5), 216-T-26 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Fill soil, Vibratory Roller	1.5	day			$296.00	$353.98	$0	$0	$444	$531	$975
Compacted Silt Loam, Pit 30 excavate/load (1,254 cy)	1	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Compacted Silt Loam Hauling, 5 Trucks, 1 Days/Ea	5	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Compacted Silt Loam Layer, Front End Loader	1	day			$296.00	$630.27	$0	$0	$296	$630	$926
Compacted Silt Loam Layer, Bulldozer	1	day			$296.00	$656.42	$0	$0	$296	$656	$952
Compacted Silt Loam Layer, Vibratory Roller	1	day			$296.00	$353.98	$0	$0	$296	$354	$650
Silt Loam, from Pit 30 excavate/load (1,209 cy)	1	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Purchase Pea Gravel Layer	134	cy		$55.67			$0	$7,460	$0	$0	$7,460
Silt Loam Hauling, 5 Trucks, 1 Day/Each	5	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Silt Loam/Pea Gravel Layer, Front End Loader (898 cy)	1	day			$296.00	$630.27	$0	$0	$296	$630	$926
Silt Loam/Pea Gravel Layer, Bulldozer (898 cy)	1	day			$296.00	$656.42	$0	$0	$296	$656	$952
Silt Loam/Pea Gravel Layer, Vibratory Roller	1	day			$296.00	$353.98	$0	$0	$296	$354	$650
Revegetation (fine Grade & Seed Topsoil)	2,500	sy		$0.26	$1.19	$0.18	$0	$650	$2,975	$450	$4,075
Water Truck	15.5	day			$296.00	$80.00	$0	$0	$4,588	$1,240	$5,828
MISCELLANEOUS											
Support Personnel	49	day			$1,896.00		$0	$0	$92,904	$0	$92,904
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$1,084	$44,986	$192,998	$74,019	$313,087
Direct Markup on Labor @	25%						$0	$0	$48,250	$0	$48,250
Direct Markup on Materials @	10%						$0	$4,499	$0	$0	$4,499
Direct Markup on Subcontracts @	10%						$108	$0	$0	$0	$108
Construction Contractor G&A @	26.5%						$287	$11,921	$51,144	$19,615	$82,968
Construction Contractor Subtotal							$1,479	$61,406	$292,392	$93,634	$448,912
Fluor Hanford G&A on Construction Contractor Cost @	15%						$222	$9,211	$43,859	$14,045	$67,337
Construction Contractor Total Cost							$1,701	$70,617	$336,251	$107,680	$516,248
Fluor Hanford Total Cost (From Above)							$475,600	$0	$159,648	$10,925	$646,173

Table D-79. (Alternative 5), 216-T-26 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Project Subtotal							$477,301	$70,617	$495,898	$118,605	$1,162,421
Contingency on Field Costs @	20%										$232,484
TOTAL COST											$1,394,905

Table D-80. (Alternative 5), 216-T-26 Crib Representative Site, Periodic Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$1,792		Cost is based on 16 hrs for every 50,000 sf (area = 22,500 sf) @ $112/hr
Radiation Survey of Surface Soil	$5,000		Cost is based on $1,000 for every 5,000 square feet (area = 22,500 sf)
Cover Maintenance	$11,259		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.

TOTALS	**$18,051**	**$20,000**

Table D-81. (Alternative 5), 216-T-26 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$1,394,905		$1,394,905	1.0000	$1,394,905
1		$18,051	$18,051	0.9690	$17,492
2		$18,051	$18,051	0.9389	$16,949
3		$18,051	$18,051	0.9098	$16,423
4		$18,051	$18,051	0.8816	$15,914
5		$38,051	$38,051	0.8543	$32,507
6		$18,051	$18,051	0.8278	$14,943
7		$18,051	$18,051	0.8021	$14,479
8		$18,051	$18,051	0.7773	$14,031
9		$18,051	$18,051	0.7532	$13,596
10		$38,051	$38,051	0.7298	$27,770
11		$18,051	$18,051	0.7072	$12,766
12		$18,051	$18,051	0.6852	$12,369
13		$18,051	$18,051	0.6640	$11,986
14		$18,051	$18,051	0.6434	$11,614
15		$38,051	$38,051	0.6235	$23,725
16		$18,051	$18,051	0.6041	$10,905
17		$18,051	$18,051	0.5854	$10,567
18		$18,051	$18,051	0.5672	$10,239
19		$18,051	$18,051	0.5496	$9,921
20		$38,051	$38,051	0.5326	$20,266
21		$18,051	$18,051	0.5161	$9,316
22		$18,051	$18,051	0.5001	$9,028
23		$18,051	$18,051	0.4846	$8,748
24		$18,051	$18,051	0.4696	$8,477
25		$38,051	$38,051	0.4550	$17,313
26		$18,051	$18,051	0.4409	$7,959
27		$18,051	$18,051	0.4272	$7,712
28		$18,051	$18,051	0.4140	$7,473
29		$18,051	$18,051	0.4011	$7,240
30		$38,051	$38,051	0.3887	$14,791
31		$18,051	$18,051	0.3766	$6,798
32		$18,051	$18,051	0.3650	$6,589
33		$18,051	$18,051	0.3536	$6,383
34		$18,051	$18,051	0.3427	$6,186
35		$38,051	$38,051	0.3321	$12,637
36		$18,051	$18,051	0.3218	$5,809
37		$18,051	$18,051	0.3118	$5,628
38		$18,051	$18,051	0.3021	$5,453
39		$18,051	$18,051	0.2927	$5,284

Table D-81. (Alternative 5), 216-T-26 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
40		$38,051	$38,051	0.2837	$10,795
41		$18,051	$18,051	0.2749	$4,962
42		$18,051	$18,051	0.2664	$4,809
43		$18,051	$18,051	0.2581	$4,659
44		$18,051	$18,051	0.2501	$4,515
45		$38,051	$38,051	0.2423	$9,220
46		$18,051	$18,051	0.2348	$4,238
47		$18,051	$18,051	0.2275	$4,107
48		$18,051	$18,051	0.2205	$3,980
49		$18,051	$18,051	0.2136	$3,856
50		$38,051	$38,051	0.2070	$7,877
51		$18,051	$18,051	0.2006	$3,621
52		$18,051	$18,051	0.1944	$3,509
53		$18,051	$18,051	0.1884	$3,401
54		$18,051	$18,051	0.1825	$3,294
55		$38,051	$38,051	0.1769	$6,731
56		$18,051	$18,051	0.1714	$3,094
57		$18,051	$18,051	0.1661	$2,998
58		$18,051	$18,051	0.1609	$2,904
59		$18,051	$18,051	0.1559	$2,814
60		$38,051	$38,051	0.1511	$5,750
61		$18,051	$18,051	0.1464	$2,643
62		$18,051	$18,051	0.1419	$2,562
63		$18,051	$18,051	0.1375	$2,482
64		$18,051	$18,051	0.1332	$2,404
65		$38,051	$38,051	0.1291	$4,912
66		$18,051	$18,051	0.1251	$2,258
67		$18,051	$18,051	0.1212	$2,188
68		$18,051	$18,051	0.1174	$2,119
69		$18,051	$18,051	0.1138	$2,054
70		$38,051	$38,051	0.1103	$4,197
71		$18,051	$18,051	0.1068	$1,928
72		$18,051	$18,051	0.1035	$1,868
73		$18,051	$18,051	0.1003	$1,811
74		$18,051	$18,051	0.0972	$1,755
75		$38,051	$38,051	0.0942	$3,584
76		$18,051	$18,051	0.0913	$1,648
77		$18,051	$18,051	0.0884	$1,596
78		$18,051	$18,051	0.0857	$1,547
79		$18,051	$18,051	0.0830	$1,498
80		$38,051	$38,051	0.0805	$3,063
81		$18,051	$18,051	0.0780	$1,408

Table D-81. (Alternative 5), 216-T-26 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
82		$18,051	$18,051	0.0756	$1,365
83		$18,051	$18,051	0.0732	$1,321
84		$18,051	$18,051	0.0709	$1,280
85		$38,051	$38,051	0.0687	$2,614
86		$18,051	$18,051	0.0666	$1,202
87		$18,051	$18,051	0.0645	$1,164
88		$18,051	$18,051	0.0625	$1,128
89		$18,051	$18,051	0.0606	$1,094
90		$38,051	$38,051	0.0587	$2,234
91		$18,051	$18,051	0.0569	$1,027
92		$18,051	$18,051	0.0551	$995
93		$18,051	$18,051	0.0534	$964
94		$18,051	$18,051	0.0518	$935
95		$38,051	$38,051	0.0502	$1,910
96		$18,051	$18,051	0.0486	$877
97		$18,051	$18,051	0.0471	$850
98		$18,051	$18,051	0.0456	$823
99		$18,051	$18,051	0.0442	$798
100		$38,051	$38,051	0.0429	$1,632
101		$18,051	$18,051	0.0415	$749
102		$18,051	$18,051	0.0402	$726
103		$18,051	$18,051	0.0390	$704
104		$18,051	$18,051	0.0378	$682
105		$38,051	$38,051	0.0366	$1,393
106		$18,051	$18,051	0.0355	$641
107		$18,051	$18,051	0.0344	$621
108		$18,051	$18,051	0.0333	$601
109		$18,051	$18,051	0.0323	$583
110		$38,051	$38,051	0.0313	$1,191
111		$18,051	$18,051	0.0303	$547
112		$18,051	$18,051	0.0294	$531
113		$18,051	$18,051	0.0285	$514
114		$18,051	$18,051	0.0276	$498
115		$38,051	$38,051	0.0267	$1,016
116		$18,051	$18,051	0.0259	$468
117		$18,051	$18,051	0.0251	$453
118		$18,051	$18,051	0.0243	$439
119		$18,051	$18,051	0.0236	$426
120		$38,051	$38,051	0.0228	$868
121		$18,051	$18,051	0.0221	$399
122		$18,051	$18,051	0.0214	$386
123		$18,051	$18,051	0.0208	$375

Table D-81. (Alternative 5), 216-T-26 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
124		$18,051	$18,051	0.0201	$363
125		$38,051	$38,051	0.0195	$742
126		$18,051	$18,051	0.0189	$341
127		$18,051	$18,051	0.0183	$330
128		$18,051	$18,051	0.0177	$320
129		$18,051	$18,051	0.0172	$310
130		$38,051	$38,051	0.0167	$635
131		$18,051	$18,051	0.0161	$291
132		$18,051	$18,051	0.0156	$282
133		$18,051	$18,051	0.0152	$274
134		$18,051	$18,051	0.0147	$265
135		$38,051	$38,051	0.0142	$540
136		$18,051	$18,051	0.0138	$249
137		$18,051	$18,051	0.0134	$242
138		$18,051	$18,051	0.0129	$233
139		$18,051	$18,051	0.0125	$226
140		$38,051	$38,051	0.0122	$464
141		$18,051	$18,051	0.0118	$213
142		$18,051	$18,051	0.0114	$206
143		$18,051	$18,051	0.0111	$200
144		$18,051	$18,051	0.0107	$193
145		$38,051	$38,051	0.0104	$396
146		$18,051	$18,051	0.0101	$182
147		$18,051	$18,051	0.0098	$177
148		$18,051	$18,051	0.0094	$170
149		$18,051	$18,051	0.0092	$166
150		$38,051	$38,051	0.0089	$339
				TOTAL PRESENT WORTH	**$2,070,229**

Table D-82. (Alternative 5), 216-T-26 Crib Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Purchase, Deliver, and Place Topsoil											
Purchase Pea Gravel (includes purchase and delivery)	17	cy		$55.67			$0	$946	$0	$0	$946
Silt Loam, from Pit 30 excavate/load (150 cy)	1	day			$296.00	$559.90	$0	$0	$296	$560	$856
Silt Loam Hauling, 2 Trucks, 1 Days/Each	2	day			$296.00	$398.55	$0	$0	$592	$797	$1,389
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	167	cy		$14.00	$10.00	$5.68	$0	$2,338	$1,670	$949	$4,957
Fine Grading and seeding, incl. lime, fert, and seed	250	sy		$0.26	$1.19	$0.18	$0	$65	$298	$45	$408
Oversight (2.5 days x 8 hrs/day)	16	hrs			$56.00		$0	$0	$896	$0	$896
					Total Cost		$0	$3,349	$4,152	$3,759	$11,259
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
					Total Cost		$0	$6,683	$5,920	$311	$12,913

Table D-83. (Alternative 5), 216-B-46 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	400	days			$1,720.00		$0	$0	$688,000	$0	$688,000
RCT Decontamination Crew (4 RCTs)	217	days			$1,792.00		$0	$0	$388,864	$0	$388,864
RCT on Excavator (1)	297	days			$448.00		$0	$0	$133,056	$0	$133,056
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845 Icy Contaminated Soil, or 6 Min)	22	ea	$5,000.00				$110,000	$0	$0	$0	$110,000
QC Samples (5% of Total Samples or 1 minimum)	2	ea	$5,000.00				$10,000	$0	$0	$0	$10,000
Air Sampling and Crew (Sampler and RCT)	333	days	$1,000.00		$896.00	$500.00	$333,000	$0	$298,368	$166,500	$797,868
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	297	days			$672.00		$0	$0	$199,584	$0	$199,584
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	8,648	ea	$1,100.00				$9,512,800	$0	$0	$0	$9,512,800
Fluor Hanford Field Cost							$9,972,400	$0	$1,707,872	$166,500	$11,846,772
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$256,181	$0	$256,181
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$24,975	$24,975
Fluor Hanford Total Cost							**$9,972,400**	**$0**	**$1,964,053**	**$191,475**	**$12,127,928**
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	19	mo				$350.00	$0	$0	$0	$6,650	$6,650
Field Office Support	19	mo		$139.00			$0	$2,641	$0	$0	$2,641
Storage Trailer	19	mo				$105.00	$0	$0	$0	$1,995	$1,995

Table D-83. (Alternative 5), 216-B-46 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	2.89	ac	$1,748.00				$5,052	$0	$0	$0	$5,052
Site Utilities, Generator and Oiler	19	mo			$6,216.00	$1,394.80	$0	$0	$118,104	$26,501	$144,605
Install Temporary Fence (Blaze Orange)	1,579	lf		$1.63	$1.16		$0	$2,574	$1,832	$0	$4,405
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (See Table D-34)	1	ea		$6,682.86	$5,920.00	$310.56	$0	$6,683	$5,920	$311	$12,913
DECONTAMINATION											
Decontamination Crew (4 Laborers)	217	day			$1,184.00		$0	$0	$256,928	$0	$256,928
Water for Decon Process (1,000 gal/month)	10,350	gal		$0.20			$0	$2,070	$0	$0	$2,070
EXCAVATION											
Water Truck	297	day			$296.00	$80.00	$0	$0	$87,912	$23,760	$111,672
Hydraulic Excavator	297	day			$296.00	$559.90	$0	$0	$87,912	$166,292	$254,204
Front End Loader	297	day			$296.00	$630.27	$0	$0	$87,912	$187,189	$275,101
Pit 30 Blend soil (Excavate/load 18,260 cy)	15	day			$592.00	$1,190.17	$0	$0	$8,880	$17,853	$26,733
Fill soil, Hauling, 5 Trucks, 15 Days/Each	75	day			$296.00	$398.55	$0	$0	$22,200	$29,891	$52,091
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler	16	day			$592.00	$1,851.60	$0	$0	$9,472	$29,626	$39,098
Water Truck	16	day			$296.00	$80.00	$0	$0	$4,736	$1,280	$6,016
SITE RESTORATION											
Fill soil, Excavate and load from Pit 30 (25,638 cy)	20	day			$592.00	$1,190.17	$0	$0	$11,840	$23,803	$35,643
Fill soil, Hauling, 5 Trucks, 20 Days/Each	100	day			$296.00	$398.55	$0	$0	$29,600	$39,855	$69,455
Fill soil, Front End Loader (no compaction)	20	day			$296.00	$630.27	$0	$0	$5,920	$12,605	$18,525
Fill soil, Bulldozer (no compaction)	20	day			$296.00	$656.42	$0	$0	$5,920	$13,128	$19,048
Fill soil, Excavate and load from Pit 30 (38,681 cy)	30	day			$592.00	$1,190.17	$0	$0	$17,760	$35,705	$53,465
Fill soil, Hauling, 5 Trucks, 30 Days/Each	150	day			$296.00	$398.55	$0	$0	$44,400	$59,783	$104,183
Fill soil, Front End Loader	30	day			$296.00	$630.27	$0	$0	$8,880	$18,908	$27,788
Fill soil, Bulldozer	30	day			$296.00	$656.42	$0	$0	$8,880	$19,693	$28,573
Fill soil, Vibratory Roller	30	day			$296.00	$353.98	$0	$0	$8,880	$10,619	$19,499
Compacted Silt Loam, from Pit 30 excavate/load (6,173 cy)	5	day			$592.00	$1,190.17	$0	$0	$2,960	$5,951	$8,911

Table D-83. (Alternative 5), 216-B-46 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Compacted Silt Loam Hauling, 5 Trucks, 5 Days/Ea	25	day			$296.00	$398.55	$0	$0	$7,400	$9,964	$17,364
Compacted Silt Loam Layer, Front End Loader	5	day			$296.00	$630.27	$0	$0	$1,480	$3,151	$4,631
Compacted Silt Loam Layer, Bulldozer	5	day			$296.00	$656.42	$0	$0	$1,480	$3,282	$4,762
Compacted Silt Loam Layer, Vibratory Roller	5	day			$296.00	$353.98	$0	$0	$1,480	$1,770	$3,250
Silt Loam, from Pit 30 excavate/load (5,736 cy)	5	day			$592.00	$1,190.17	$0	$0	$2,960	$5,951	$8,911
Purchase Pea Gravel Layer	637	cy		$55.67			$0	$35,462	$0	$0	$35,462
Silt Loam Hauling, 5 Trucks, 5 Day/Each	25	day			$296.00	$398.55	$0	$0	$7,400	$9,964	$17,364
Silt Loam/Pea Gravel Layer, Front End Loader (400 cy)	5	day			$296.00	$630.27	$0	$0	$1,480	$3,151	$4,631
Silt Loam/Pea Gravel Layer, Bulldozer (400 cy)	5	day			$296.00	$656.42	$0	$0	$1,480	$3,282	$4,762
Silt Loam/Pea Gravel Layer, Vibratory Roller	5	day			$296.00	$353.98	$0	$0	$1,480	$1,770	$3,250
Revegetation (fine Grade & Seed Topsoil)	11,653	sy		$0.26	$1.19	$0.18	$0	$3,030	$13,867	$2,098	$18,994
Water Truck	72	day			$296.00	$80.00	$0	$0	$21,312	$5,760	$27,072
MISCELLANEOUS											
Support Personnel	400	day			$1,896.00		$0	$0	$758,400	$0	$758,400
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000

Construction Contractor Field Cost		$5,052	$81,059	$1,682,074	$793,674	$2,561,859
Direct Markup on Labor @	25%	$0	$0	$420,518	$0	$420,518
Direct Markup on Materials @	10%	$0	$8,106	$0	$0	$8,106
Direct Markup on Subcontracts @	10%	$505	$0	$0	$0	$505
Construction Contractor G&A @	26.5%	$1,339	$21,481	$445,750	$210,324	$678,893
Construction Contractor Subtotal		$6,896	$110,646	$2,548,342	$1,003,998	$3,669,881
Fluor Hanford G&A on Construction Contractor Cost @	15%	$1,034	$16,597	$382,251	$150,600	$550,482
Construction Contractor Total Cost		$7,930	$127,243	$2,930,593	$1,154,597	$4,220,363
Fluor Hanford Total Cost (From Above)		$9,972,400	$0	$1,964,053	$191,475	$12,127,928

Table D-83. (Alternative 5), 216-B-46 Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Project Subtotal							$9,980,330	$127,243	$4,894,646	$1,346,072	$16,348,291
Contingency on Field Costs @ 20%											$3,269,658
TOTAL COST											$19,617,949

Table D-84. (Alternative 5), 216-B-46 Crib Representative Site, Periodic Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$5,376		Cost is based on 16 hrs for every 50,000 sf (area = 104,877 sf) @ $112/hr
Radiation Survey of Surface Soil	$21,000		Cost is based on $1,000 for every 5,000 square feet (area = 104,877 sf)
Cover Maintenance	$40,086		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.

TOTALS	**$66,462**	**$20,000**

Table D-85. (Alternative 5), 216-B-46 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$19,617,949		$19,617,949	1.0000	$19,617,949
1		$66,462	$66,462	0.9690	$64,401
2		$66,462	$66,462	0.9389	$62,401
3		$66,462	$66,462	0.9098	$60,467
4		$66,462	$66,462	0.8816	$58,593
5		$86,462	$86,462	0.8543	$73,864
6		$66,462	$66,462	0.8278	$55,017
7		$66,462	$66,462	0.8021	$53,309
8		$66,462	$66,462	0.7773	$51,661
9		$66,462	$66,462	0.7532	$50,059
10		$86,462	$86,462	0.7298	$63,100
11		$66,462	$66,462	0.7072	$47,002
12		$66,462	$66,462	0.6852	$45,539
13		$66,462	$66,462	0.6640	$44,131
14		$66,462	$66,462	0.6434	$42,761
15		$86,462	$86,462	0.6235	$53,909
16		$66,462	$66,462	0.6041	$40,149
17		$66,462	$66,462	0.5854	$38,907
18		$66,462	$66,462	0.5672	$37,697
19		$66,462	$66,462	0.5496	$36,527
20		$86,462	$86,462	0.5326	$46,049
21		$66,462	$66,462	0.5161	$34,301
22		$66,462	$66,462	0.5001	$33,237
23		$66,462	$66,462	0.4846	$32,207
24		$66,462	$66,462	0.4696	$31,210
25		$86,462	$86,462	0.4550	$39,340
26		$66,462	$66,462	0.4409	$29,303
27		$66,462	$66,462	0.4272	$28,392
28		$66,462	$66,462	0.4140	$27,515
29		$66,462	$66,462	0.4011	$26,658
30		$86,462	$86,462	0.3887	$33,608
31		$66,462	$66,462	0.3766	$25,029
32		$66,462	$66,462	0.3650	$24,258
33		$66,462	$66,462	0.3536	$23,501
34		$66,462	$66,462	0.3427	$22,776
35		$86,462	$86,462	0.3321	$28,714
36		$66,462	$66,462	0.3218	$21,387
37		$66,462	$66,462	0.3118	$20,723
38		$66,462	$66,462	0.3021	$20,078

Table D-85. (Alternative 5), 216-B-46 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
39		$66,462	$66,462	0.2927	$19,453
40		$86,462	$86,462	0.2837	$24,529
41		$66,462	$66,462	0.2749	$18,270
42		$66,462	$66,462	0.2664	$17,705
43		$66,462	$66,462	0.2581	$17,154
44		$66,462	$66,462	0.2501	$16,622
45		$86,462	$86,462	0.2423	$20,950
46		$66,462	$66,462	0.2348	$15,605
47		$66,462	$66,462	0.2275	$15,120
48		$66,462	$66,462	0.2205	$14,655
49		$66,462	$66,462	0.2136	$14,196
50		$86,462	$86,462	0.2070	$17,898
51		$66,462	$66,462	0.2006	$13,332
52		$66,462	$66,462	0.1944	$12,920
53		$66,462	$66,462	0.1884	$12,521
54		$66,462	$66,462	0.1825	$12,129
55		$86,462	$86,462	0.1769	$15,295
56		$66,462	$66,462	0.1714	$11,392
57		$66,462	$66,462	0.1661	$11,039
58		$66,462	$66,462	0.1609	$10,694
59		$66,462	$66,462	0.1559	$10,361
60		$86,462	$86,462	0.1511	$13,064
61		$66,462	$66,462	0.1464	$9,730
62		$66,462	$66,462	0.1419	$9,431
63		$66,462	$66,462	0.1375	$9,138
64		$66,462	$66,462	0.1332	$8,853
65		$86,462	$86,462	0.1291	$11,162
66		$66,462	$66,462	0.1251	$8,314
67		$66,462	$66,462	0.1212	$8,055
68		$66,462	$66,462	0.1174	$7,803
69		$66,462	$66,462	0.1138	$7,563
70		$86,462	$86,462	0.1103	$9,537
71		$66,462	$66,462	0.1068	$7,098
72		$66,462	$66,462	0.1035	$6,879
73		$66,462	$66,462	0.1003	$6,666
74		$66,462	$66,462	0.0972	$6,460
75		$86,462	$86,462	0.0942	$8,145
76		$66,462	$66,462	0.0913	$6,068
77		$66,462	$66,462	0.0884	$5,875
78		$66,462	$66,462	0.0857	$5,696
79		$66,462	$66,462	0.0830	$5,516

Table D-85. (Alternative 5), 216-B-46 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
80		$86,462	$86,462	0.0805	$6,960
81		$66,462	$66,462	0.0780	$5,184
82		$66,462	$66,462	0.0756	$5,024
83		$66,462	$66,462	0.0732	$4,865
84		$66,462	$66,462	0.0709	$4,712
85		$86,462	$86,462	0.0687	$5,940
86		$66,462	$66,462	0.0666	$4,426
87		$66,462	$66,462	0.0645	$4,287
88		$66,462	$66,462	0.0625	$4,154
89		$66,462	$66,462	0.0606	$4,028
90		$86,462	$86,462	0.0587	$5,075
91		$66,462	$66,462	0.0569	$3,782
92		$66,462	$66,462	0.0551	$3,662
93		$66,462	$66,462	0.0534	$3,549
94		$66,462	$66,462	0.0518	$3,443
95		$86,462	$86,462	0.0502	$4,340
96		$66,462	$66,462	0.0486	$3,230
97		$66,462	$66,462	0.0471	$3,130
98		$66,462	$66,462	0.0456	$3,031
99		$66,462	$66,462	0.0442	$2,938
100		$86,462	$86,462	0.0429	$3,709
101		$66,462	$66,462	0.0415	$2,758
102		$66,462	$66,462	0.0402	$2,672
103		$66,462	$66,462	0.0390	$2,592
104		$66,462	$66,462	0.0378	$2,512
105		$86,462	$86,462	0.0366	$3,164
106		$66,462	$66,462	0.0355	$2,359
107		$66,462	$66,462	0.0344	$2,286
108		$66,462	$66,462	0.0333	$2,213
109		$66,462	$66,462	0.0323	$2,147
110		$86,462	$86,462	0.0313	$2,706
111		$66,462	$66,462	0.0303	$2,014
112		$66,462	$66,462	0.0294	$1,954
113		$66,462	$66,462	0.0285	$1,894
114		$66,462	$66,462	0.0276	$1,834
115		$86,462	$86,462	0.0267	$2,309
116		$66,462	$66,462	0.0259	$1,721
117		$66,462	$66,462	0.0251	$1,668
118		$66,462	$66,462	0.0243	$1,615
119		$66,462	$66,462	0.0236	$1,568
120		$86,462	$86,462	0.0228	$1,971

Table D-85. (Alternative 5), 216-B-46 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
121		$66,462	$66,462	0.0221	$1,469
122		$66,462	$66,462	0.0214	$1,422
123		$66,462	$66,462	0.0208	$1,382
124		$66,462	$66,462	0.0201	$1,336
125		$86,462	$86,462	0.0195	$1,686
126		$66,462	$66,462	0.0189	$1,256
127		$66,462	$66,462	0.0183	$1,216
128		$66,462	$66,462	0.0177	$1,176
129		$66,462	$66,462	0.0172	$1,143
130		$86,462	$86,462	0.0167	$1,444
131		$66,462	$66,462	0.0161	$1,070
132		$66,462	$66,462	0.0156	$1,037
133		$66,462	$66,462	0.0152	$1,010
134		$66,462	$66,462	0.0147	$977
135		$86,462	$86,462	0.0142	$1,228
136		$66,462	$66,462	0.0138	$917
137		$66,462	$66,462	0.0134	$891
138		$66,462	$66,462	0.0129	$857
139		$66,462	$66,462	0.0125	$831
140		$86,462	$86,462	0.0122	$1,055
141		$66,462	$66,462	0.0118	$784
142		$66,462	$66,462	0.0114	$758
143		$66,462	$66,462	0.0111	$738
144		$66,462	$66,462	0.0107	$711
145		$86,462	$86,462	0.0104	$899
146		$66,462	$66,462	0.0101	$671
147		$66,462	$66,462	0.0098	$651
148		$66,462	$66,462	0.0094	$625
149		$66,462	$66,462	0.0092	$611
150		$86,462	$86,462	0.0089	$770
				TOTAL PRESENT WORTH	$21,792,675

Table D-86. (Alternative 5), 216-B-46 Crib Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State,

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Purchase, Deliver, and Place Topsoil											
Purchase Pea Gravel (includes purchase and delivery)	78	cy		$55.67			$0	$4,342	$0	$0	$4,342
Silt Loam, from Pit 30 excavate/load (699 cy)	3	day			$296.00	$559.90	$0	$0	$888	$1,680	$2,568
Silt Loam Hauling, 2 Trucks, 3 Days/Each	6	day			$296.00	$398.55	$0	$0	$1,776	$2,391	$4,167
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	777	cy		$14.00	$10.00	$5.68	$0	$10,878	$7,770	$4,413	$23,061
Fine Grading and seeding, incl. lime, fert, and seed	1,165	sy		$0.26	$1.19	$0.18	$0	$303	$1,386	$210	$1,899
Oversight (5 days x 8 hrs/day)	40	hrs			$56.00		$0	$0	$2,240	$0	$2,240
					Total Cost		$0	$15,523	$14,460	$10,102	$40,086
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
					Total Cost		$0	$6,683	$5,920	$311	$12,913

Table D-87. (Alternative 5), 216-B-7A&B Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Title	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RTC)	44	days			$1,720.00		$0	$0	$75,680	$0	$75,680
RCT on Excavator (2 for 22 days)	44	days			$1,792.00		$0	$0	$78,848	$0	$78,848
RCT Decontamination Crew (4 RCT)	17	days			$1,792.00		$0	$0	$30,464	$0	$30,464
Additional RCT During Excavation (4 RCT)	22	days			$1,792.00		$0	$0	$39,424	$0	$39,424
RCT Supervisor	22	days			$580.88		$0	$0	$12,779	$0	$12,779
Radiological Engineer	22	days			$502.24		$0	$0	$11,049	$0	$11,049
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845 lcy Contaminated Soil, or 6 Min)	1	ea	$5,000.00				$5,000	$0	$0	$0	$5,000
QC Samples (5% of Total Samples or 1 minimum)	1	ea	$5,000.00				$5,000	$0	$0	$0	$5,000
Air Sampling and Crew (Sampler and RCT)	24	days	$1,000.00		$896.00	$500.00	$24,000	$0	$21,504	$12,000	$57,504
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	22	days			$672.00		$0	$0	$14,784	$0	$14,784
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	256	ea	$1,100.00				$281,600	$0	$0	$0	$281,600
Fluor Hanford Field Cost							$322,200	$0	$284,533	$12,000	$618,733
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$42,680	$0	$42,680
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$1,800	$1,800
Fluor Hanford Total Cost							$322,200	$0	$327,213	$13,800	$663,213

Table D-87. (Alternative 5), 216-B-7A&B Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	2.1	mo				$350.00	$0	$0	$0	$735	$735
Field Office Support	2.1	mo		$139.00			$0	$292	$0	$0	$292
Storage Trailer	2.1	mo				$105.00	$0	$0	$0	$221	$221
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	0.36	ac	$1,748.00				$629	$0	$0	$0	$15,983
Site Utilities, Generator and Oiler	2.1	mo			$6,216.00	$1,394.80	$0	$0	$13,054	$2,929	$12,983
Install Temporary Fence (Blaze Orange)	552	lf		$1.63	$1.16		$0	$900	$640	$0	$1,540
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (See Table D-34)	1	ea		$6,682.86	$5,920.00	$310.56	$0	$6,683	$5,920	$311	$12,913
DECONTAMINATION											
Decontamination Crew (4 Laborers)	17	day			$1,184.00		$0	$0	$20,128	$0	$20,128
Water for Decon Process (1,000 gal/month)	810	gal		$0.20			$0	$162	$0	$0	$162
EXCAVATION											
Water Truck	22	day			$296.00	$80.00	$0	$0	$6,512	$1,760	$8,272
Hydraulic Excavator (2 excavators)	22	day			$592.00	$1,119.81	$0	$0	$13,024	$24,636	$37,660
Front End Loader	22	day			$296.00	$630.27	$0	$0	$6,512	$13,866	$20,378
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler	1	day			$592.00	$1,851.60	$0	$0	$592	$1,852	$2,444
Water Truck	1	day			$296.00	$80.00	$0	$0	$296	$80	$376
SITE RESTORATION											
Fill soil, Front End Loader (760 cy no compaction)	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Fill soil, Bulldozer (760 cy no compaction)	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Fill soil, Front End Loader (1,510 cy)	1	day			$296.00	$630.27	$0	$0	$296	$630	$926
Fill soil, Bulldozer (1,150 cy)	1	day			$296.00	$656.42	$0	$0	$296	$656	$952
Fill soil, Vibratory Roller (3,618 cy)	1	day			$296.00	$353.98	$0	$0	$296	$354	$650
Fill soil, Excavate and load from Pit 30 (1,353 cy)	1	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782

Table D-87. (Alternative 5), 216-B-7A&B Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Fill soil, Hauling, 5 Trucks, 1 Day/Each	5	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Fill soil, Front End Loader	1	day			$296.00	$630.27	$0	$0	$296	$630	$926
Fill soil, Bulldozer	1	day			$296.00	$656.42	$0	$0	$296	$656	$952
Fill soil, Vibratory Roller	1	day			$296.00	$353.98	$0	$0	$296	$354	$650
Compacted Silt Loam, from Pit 30 excavate/load (696 cy)	0.5	day			$592.00	$1,190.17	$0	$0	$296	$595	$891
Compacted Silt Loam Hauling, 5 Trucks, 0.5 Days/Ea	2.5	day			$296.00	$398.55	$0	$0	$740	$996	$1,736
Compacted Silt Loam Layer, Front End Loader	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Compacted Silt Loam Layer, Bulldozer	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Compacted Silt Loam Layer, Vibratory Roller	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Silt Loam, from Pit 30 excavate/load (687 cy)	0.5	day			$592.00	$1,190.17	$0	$0	$296	$595	$891
Purchase Pea Gravel Layer	76	cy		$55.67			$0	$4,231	$0	$0	$4,231
Silt Loam Hauling, 5 Trucks, 0.5 Day/Each	2.5	day			$296.00	$398.55	$0	$0	$740	$996	$1,736
Silt Loam/Pea Gravel Layer, Front End Loader (764 cy)	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Silt Loam/Pea Gravel Layer, Bulldozer (764400 cy)	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Revegetation (fine Grade & Seed Topsoil)	1,437	sy		$0.26	$1.19	$0.18	$0	$374	$1,710	$259	$2,342
Water Truck	5.5	day			$296.00	$80.00	$0	$0	$1,628	$440	$2,068
MISCELLANEOUS											
Support Personnel	44	day			$1,896.00		$0	$0	$83,424	$0	$83,424
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000

Construction Contractor Field Cost		$629	$41,241	$185,403	$70,974	$298,248
Direct Markup on Labor @	25%	$0	$0	$46,351	$0	$46,351
Direct Markup on Materials @	10%	$0	$4,124	$0	$0	$4,124
Direct Markup on Subcontracts @	10%	$63	$0	$0	$0	$63
Construction Contractor G&A @	26.5%	$167	$10,929	$49,132	$18,808	$79,036
Construction Contractor Subtotal		$859	$56,294	$280,885	$89,782	$427,821
Fluor Hanford G&A on Construction Contractor Cost @	15%	$129	$8,444	$42,133	$13,467	$64,173

Table D-87. (Alternative 5), 216-B-7A&B Crib Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Construction Contractor Total Cost							$988	$64,738	$323,018	$103,250	$491,994
Fluor Hanford Total Cost (From Above)							$322,200	$0	$327,213	$13,800	$663,213
Project Subtotal							$323,188	$64,738	$650,231	$117,050	$1,155,207
Contingency on Field Costs @	20%										$231,041
TOTAL COST											$1,386,248

Table D-88. (Alternative 5), 216-B-7A&B Crib Representative Site, Periodic Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$1,792		Cost is based on 16 hrs for every 50,000 sf (area = 12,936 sf) @ $112/hr
Radiation Survey of Surface Soil	$3,000		Cost is based on $1,000 for every 5,000 square feet (area = 12,936 sf)
Cover Maintenance	$8,588		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.

TOTALS	**$13,380**	**$20,000**

Table D-89 (Alternative 5), 216-B-7A&B Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$1,386,248		$1,386,248	1.0000	$1,386,248
1		$13,380	$13,380	0.9690	$12,965
2		$13,380	$13,380	0.9389	$12,563
3		$13,380	$13,380	0.9098	$12,173
4		$13,380	$13,380	0.8816	$11,796
5		$33,380	$33,380	0.8543	$28,517
6		$13,380	$13,380	0.8278	$11,076
7		$13,380	$13,380	0.8021	$10,732
8		$13,380	$13,380	0.7773	$10,400
9		$13,380	$13,380	0.7532	$10,078
10		$33,380	$33,380	0.7298	$24,361
11		$13,380	$13,380	0.7072	$9,462
12		$13,380	$13,380	0.6852	$9,168
13		$13,380	$13,380	0.6640	$8,884
14		$13,380	$13,380	0.6434	$8,609
15		$33,380	$33,380	0.6235	$20,812
16		$13,380	$13,380	0.6041	$8,083
17		$13,380	$13,380	0.5854	$7,833
18		$13,380	$13,380	0.5672	$7,589
19		$13,380	$13,380	0.5496	$7,354
20		$33,380	$33,380	0.5326	$17,778
21		$13,380	$13,380	0.5161	$6,905
22		$13,380	$13,380	0.5001	$6,691
23		$13,380	$13,380	0.4846	$6,484
24		$13,380	$13,380	0.4696	$6,283
25		$33,380	$33,380	0.4550	$15,188
26		$13,380	$13,380	0.4409	$5,899
27		$13,380	$13,380	0.4272	$5,716
28		$13,380	$13,380	0.4140	$5,539
29		$13,380	$13,380	0.4011	$5,367
30		$33,380	$33,380	0.3887	$12,975
31		$13,380	$13,380	0.3766	$5,039
32		$13,380	$13,380	0.3650	$4,884
33		$13,380	$13,380	0.3536	$4,731
34		$13,380	$13,380	0.3427	$4,585
35		$33,380	$33,380	0.3321	$11,086
36		$13,380	$13,380	0.3218	$4,306
37		$13,380	$13,380	0.3118	$4,172
38		$13,380	$13,380	0.3021	$4,042

Table D-89 (Alternative 5), 216-B-7A&B Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
39		$13,380	$13,380	0.2927	$3,916
40		$33,380	$33,380	0.2837	$9,470
41		$13,380	$13,380	0.2749	$3,678
42		$13,380	$13,380	0.2664	$3,564
43		$13,380	$13,380	0.2581	$3,453
44		$13,380	$13,380	0.2501	$3,346
45		$33,380	$33,380	0.2423	$8,088
46		$13,380	$13,380	0.2348	$3,142
47		$13,380	$13,380	0.2275	$3,044
48		$13,380	$13,380	0.2205	$2,950
49		$13,380	$13,380	0.2136	$2,858
50		$33,380	$33,380	0.2070	$6,910
51		$13,380	$13,380	0.2006	$2,684
52		$13,380	$13,380	0.1944	$2,601
53		$13,380	$13,380	0.1884	$2,521
54		$13,380	$13,380	0.1825	$2,442
55		$33,380	$33,380	0.1769	$5,905
56		$13,380	$13,380	0.1714	$2,293
57		$13,380	$13,380	0.1661	$2,222
58		$13,380	$13,380	0.1609	$2,153
59		$13,380	$13,380	0.1559	$2,086
60		$33,380	$33,380	0.1511	$5,044
61		$13,380	$13,380	0.1464	$1,959
62		$13,380	$13,380	0.1419	$1,899
63		$13,380	$13,380	0.1375	$1,840
64		$13,380	$13,380	0.1332	$1,782
65		$33,380	$33,380	0.1291	$4,309
66		$13,380	$13,380	0.1251	$1,674
67		$13,380	$13,380	0.1212	$1,622
68		$13,380	$13,380	0.1174	$1,571
69		$13,380	$13,380	0.1138	$1,523
70		$33,380	$33,380	0.1103	$3,682
71		$13,380	$13,380	0.1068	$1,429
72		$13,380	$13,380	0.1035	$1,385
73		$13,380	$13,380	0.1003	$1,342
74		$13,380	$13,380	0.0972	$1,301
75		$33,380	$33,380	0.0942	$3,144
76		$13,380	$13,380	0.0913	$1,222
77		$13,380	$13,380	0.0884	$1,183
78		$13,380	$13,380	0.0857	$1,147
79		$13,380	$13,380	0.0830	$1,111

Table D-89 (Alternative 5), 216-B-7A&B Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
80		$33,380	$33,380	0.0805	$2,687
81		$13,380	$13,380	0.0780	$1,044
82		$13,380	$13,380	0.0756	$1,012
83		$13,380	$13,380	0.0732	$979
84		$13,380	$13,380	0.0709	$949
85		$33,380	$33,380	0.0687	$2,293
86		$13,380	$13,380	0.0666	$891
87		$13,380	$13,380	0.0645	$863
88		$13,380	$13,380	0.0625	$836
89		$13,380	$13,380	0.0606	$811
90		$33,380	$33,380	0.0587	$1,959
91		$13,380	$13,380	0.0569	$761
92		$13,380	$13,380	0.0551	$737
93		$13,380	$13,380	0.0534	$714
94		$13,380	$13,380	0.0518	$693
95		$33,380	$33,380	0.0502	$1,676
96		$13,380	$13,380	0.0486	$650
97		$13,380	$13,380	0.0471	$630
98		$13,380	$13,380	0.0456	$610
99		$13,380	$13,380	0.0442	$591
100		$33,380	$33,380	0.0429	$1,432
101		$13,380	$13,380	0.0415	$555
102		$13,380	$13,380	0.0402	$538
103		$13,380	$13,380	0.0390	$522
104		$13,380	$13,380	0.0378	$506
105		$33,380	$33,380	0.0366	$1,222
106		$13,380	$13,380	0.0355	$475
107		$13,380	$13,380	0.0344	$460
108		$13,380	$13,380	0.0333	$446
109		$13,380	$13,380	0.0323	$432
110		$33,380	$33,380	0.0313	$1,045
111		$13,380	$13,380	0.0303	$405
112		$13,380	$13,380	0.0294	$393
113		$13,380	$13,380	0.0285	$381
114		$13,380	$13,380	0.0276	$369
115		$33,380	$33,380	0.0267	$891
116		$13,380	$13,380	0.0259	$347
117		$13,380	$13,380	0.0251	$336
118		$13,380	$13,380	0.0243	$325
119		$13,380	$13,380	0.0236	$316
120		$33,380	$33,380	0.0228	$761

Table D-89 (Alternative 5), 216-B-7A&B Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
121		$13,380	$13,380	0.0221	$296
122		$13,380	$13,380	0.0214	$286
123		$13,380	$13,380	0.0208	$278
124		$13,380	$13,380	0.0201	$269
125		$33,380	$33,380	0.0195	$651
126		$13,380	$13,380	0.0189	$253
127		$13,380	$13,380	0.0183	$245
128		$13,380	$13,380	0.0177	$237
129		$13,380	$13,380	0.0172	$230
130		$33,380	$33,380	0.0167	$557
131		$13,380	$13,380	0.0161	$215
132		$13,380	$13,380	0.0156	$209
133		$13,380	$13,380	0.0152	$203
134		$13,380	$13,380	0.0147	$197
135		$33,380	$33,380	0.0142	$474
136		$13,380	$13,380	0.0138	$185
137		$13,380	$13,380	0.0134	$179
138		$13,380	$13,380	0.0129	$173
139		$13,380	$13,380	0.0125	$167
140		$33,380	$33,380	0.0122	$407
141		$13,380	$13,380	0.0118	$158
142		$13,380	$13,380	0.0114	$153
143		$13,380	$13,380	0.0111	$149
144		$13,380	$13,380	0.0107	$143
145		$33,380	$33,380	0.0104	$347
146		$13,380	$13,380	0.0101	$135
147		$13,380	$13,380	0.0098	$131
148		$13,380	$13,380	0.0094	$126
149		$13,380	$13,380	0.0092	$123
150		$33,380	$33,380	0.0089	$297
				TOTAL PRESENT WORTH	$1,916,886

Table D-90. (Alternative 5), 216-B-7A&B Crib Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Purchase, Deliver, and Place Topsoil											
Purchase Pea Gravel (includes purchase and delivery)	10	cy		$55.67			$0	$557	$0	$0	$557
Silt Loam, from Pit 30 excavate/load (86 cy)	1	day			$296.00	$559.90	$0	$0	$296	$560	$856
Silt Loam Hauling, 2 Trucks, 1 Days/Each	2	day			$296.00	$398.55	$0	$0	$592	$797	$1,389
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	96	cy		$14.00	$10.00	$5.68	$0	$1,344	$960	$545	$2,849
Fine Grading and seeding, incl. lime, fert, and seed	143	sy		$0.26	$1.19	$0.18	$0	$37	$170	$26	$233
Oversight (2 days x 8 hrs/day)	16	hrs			$56.00		$0	$0	$896	$0	$896
					Total Cost		$0	$1,938	$3,314	$3,336	$8,588
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
					Total Cost		$0	$6,683	$5,920	$311	$12,913

Table D-91. (Alternative 5), 216-B-38 Crib Representative Site, Capital Costs200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	1,197	days			$1,720.00		$0	$0	$2,058,840	$0	$2,058,840
RCT Decontamination Crew (4 RCTs)	842	days			$1,792.00		$0	$0	$1,508,864	$0	$1,508,864
RCT on Excavator (1)	972	days			$448.00		$0	$0	$435,456	$0	$435,456
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845cy Contaminated Soil, or 6 Min)	84	ea	$5,000.00				$420,000	$0	$0	$0	$420,000
QC Samples (5% of Total Samples or 1 minimum)	5	ea	$5,000.00				$25,000	$0	$0	$0	$25,000
Air Sampling and Crew (Sampler and RCT)	1,063	days	$1,000.00		$896.00	$500.00	$1,063,000	$0	$952,448	$531,500	$2,546,948
Soil Sampling Crew (Sampler 50% and RCT)	972	days			$672.00		$0	$0	$653,184	$0	$653,184
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	33,505	ea	$1,100.00				$36,855,500	$0	$0	$0	$36,855,500
Fluor Hanford Field Cost							$38,370,100	$0	$5,608,792	$531,500	$44,510,392
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$841,319	$0	$841,319
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$79,725	$79,725
Fluor Hanford Total Cost							**$38,370,100**	**$0**	**$6,450,111**	**$611,225**	**$45,431,436**
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	57	mo				$350.00	$0	$0	$0	$19,950	$19,950
Field Office Support	57	mo		$139.00			$0	$7,923	$0	$0	$7,923

Table D-91. (Alternative 5), 216-B-38 Crib Representative Site, Capital Costs200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Storage Trailer	57	mo				$105.00	$0	$0	$0	$5,985	$5,985
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	6.47	ac	$1,748.00				$11,310	$0	$0	$0	$11,310
Site Utilities, Generator and Oiler	57	mo			$6,216.00	$1,394.80	$0	$0	$354,312	$79,504	$433,816
Install Temporary Fence (Blaze Orange)	2,388	lf		$1.63	$1.16		$0	$3,892	$2,770	$0	$6,663
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (See Table D-34)	1	ea		$6,682.86	$5,920.00	$310.56	$0	$6,683	$5,920	$311	$12,913
DECONTAMINATION											
Decontamination Crew (4 Laborers)	842	day			$1,184.00		$0	$0	$996,928	$0	$996,928
Water for Decon Process (1,000 gal/month)	40,100	gal		$0.20			$0	$8,020	$0	$0	$8,020
EXCAVATION											
Water Truck	972	day			$296.00	$80.00	$0	$0	$287,712	$77,760	$365,472
Hydraulic Excavator	972	day			$296.00	$559.90	$0	$0	$287,712	$544,227	$831,939
Front End Loader	972	day			$296.00	$630.27	$0	$0	$287,712	$612,619	$900,331
Pit 30 Blend soil (Excavate/load 183,047 cy)	143	day			$592.00	$1,190.17	$0	$0	$84,656	$170,195	$254,851
Fill soil, Hauling, 5 Trucks, 143 Days/Each	715	day			$296.00	$398.55	$0	$0	$211,640	$284,965	$496,605
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler	39	day			$592.00	$1,851.60	$0	$0	$23,088	$72,212	$95,300
Water Truck	39	day			$296.00	$80.00	$0	$0	$11,544	$3,120	$14,664
SITE RESTORATION											
Fill soil, Excavate and load from Pit 30 (66,287 cy)	52	day			$592.00	$1,190.17	$0	$0	$30,784	$61,889	$92,673
Fill soil, Hauling, 5 Trucks, 52 Days/Each	260	day			$296.00	$398.55	$0	$0	$76,960	$103,624	$180,584
Fill soil, Front End Loader (no compaction)	52	day			$296.00	$630.27	$0	$0	$15,392	$32,774	$48,166
Fill soil, Bulldozer (no compaction)	52	day			$296.00	$656.42	$0	$0	$15,392	$34,134	$49,526
Fill soil, Excavate and load from Pit 30 (90,838 cy)	71	day			$592.00	$1,190.17	$0	$0	$42,032	$84,502	$126,534
Fill soil, Hauling, 5 Trucks, 71 Days/Each	355	day			$296.00	$398.55	$0	$0	$105,080	$141,486	$246,566
Fill soil, Front End Loader	71	day			$296.00	$630.27	$0	$0	$21,016	$44,749	$65,765
Fill soil, Bulldozer	71	day			$296.00	$656.42	$0	$0	$21,016	$46,606	$67,622
Fill soil, Vibratory Roller	71	day			$296.00	$353.98	$0	$0	$21,016	$25,133	$46,149

Table D-91. (Alternative 5), 216-B-38 Crib Representative Site, Capital Costs200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Comp. Silt Loam, Pit 30 excavate/load (14,040 cy)	11	day			$592.00	$1,190.17	$0	$0	$6,512	$13,092	$19,604
Compacted Silt Loam Hauling, 5 Trucks, 11 Days/Ea	55	day			$296.00	$398.55	$0	$0	$16,280	$21,920	$38,200
Compacted Silt Loam Layer, Front End Loader	11	day			$296.00	$630.27	$0	$0	$3,256	$6,933	$10,189
Compacted Silt Loam Layer, Bulldozer	11	day			$296.00	$656.42	$0	$0	$3,256	$7,221	$10,477
Compacted Silt Loam Layer, Vibratory Roller	11	day			$296.00	$353.98	$0	$0	$3,256	$3,894	$7,150
Silt Loam, Pit 30 excavate/load (12,910 cy)	11	day			$592.00	$1,190.17	$0	$0	$6,512	$13,092	$19,604
Purchase Pea Gravel Layer	1,434	cy		$55.67			$0	$79,831	$0	$0	$79,831
Silt Loam Hauling, 5 Trucks, 11 Day/Each	55	day			$296.00	$398.55	$0	$0	$16,280	$21,920	$38,200
Silt Loam/Pea Gravel, Loader (14,344 cy)	11	day			$296.00	$630.27	$0	$0	$3,256	$6,933	$10,189
Silt Loam/Pea Gravel Layer, Bulldozer (400 cy)	11	day			$296.00	$656.42	$0	$0	$3,256	$7,221	$10,477
Silt Loam/Pea Gravel Layer, Vibratory Roller	11	day			$296.00	$353.98	$0	$0	$3,256	$3,894	$7,150
Revegetation (fine Grade & Seed Topsoil)	26,094	sy		$0.26	$1.19	$0.18	$0	$6,784	$31,052	$4,697	$42,533
Water Truck	171	day			$296.00	$80.00	$0	$0	$50,616	$13,680	$64,296
MISCELLANEOUS											
Support Personnel	1,197	day			$1,896.00		$0	$0	$2,269,512	$0	$2,269,512
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$11,310	$141,734	$5,343,989	$2,582,372	$8,079,404
Direct Markup on Labor @	25%						$0	$0	$1,335,997	$0	$1,335,997
Direct Markup on Materials @	10%						$0	$14,173	$0	$0	$14,173
Direct Markup on Subcontracts @	10%						$1,131	$0	$0	$0	$1,131
Construction Contractor G&A @	26.5%						$2,997	$37,559	$1,416,157	$684,329	$2,141,042
Construction Contractor Subtotal							$15,438	$193,466	$8,096,143	$3,266,701	$11,571,748
Fluor Hanford G&A on Const. Contractor Cost @	15%						$2,316	$29,020	$1,214,421	$490,005	$1,735,762
Construction Contractor Total Cost							$17,753	$222,486	$9,310,565	$3,756,706	$13,307,510
Fluor Hanford Total Cost (From Above)							$38,370,100	$0	$6,450,111	$611,225	$45,431,436

Table D-91. (Alternative 5), 216-B-38 Crib Representative Site, Capital Costs200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Project Subtotal							$38,387,853	$222,486	$15,760,676	$4,367,931	$58,738,946
Contingency on Field Costs @	20%										$11,747,789
TOTAL COST											**$70,486,735**

Table D-92. (Alternative 5), 216-B-38 Crib Representative Site, Periodic Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$8,960		Cost is based on 16 hrs for every 50,000 sf (area = 234,850 sf) @ $112/hr
Radiation Survey of Surface Soil	$47,000		Cost is based on $1,000 for every 5,000 square feet (area = 234,850)
Cover Maintenance	$87,586		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.

TOTALS	**$143,546**	**$20,000**

Table D-93. (Alternative 5), 216-B-38 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$70,486,735		$70,486,735	1.0000	$70,486,735
1		$143,546	$143,546	0.9690	$139,096
2		$143,546	$143,546	0.9389	$134,775
3		$143,546	$143,546	0.9098	$130,598
4		$143,546	$143,546	0.8816	$126,550
5		$163,546	$163,546	0.8543	$139,717
6		$143,546	$143,546	0.8278	$118,827
7		$143,546	$143,546	0.8021	$115,138
8		$143,546	$143,546	0.7773	$111,578
9		$143,546	$143,546	0.7532	$108,118
10		$163,546	$163,546	0.7298	$119,356
11		$143,546	$143,546	0.7072	$101,515
12		$143,546	$143,546	0.6852	$98,357
13		$143,546	$143,546	0.6640	$95,314
14		$143,546	$143,546	0.6434	$92,357
15		$163,546	$163,546	0.6235	$101,971
16		$143,546	$143,546	0.6041	$86,716
17		$143,546	$143,546	0.5854	$84,032
18		$143,546	$143,546	0.5672	$81,419
19		$143,546	$143,546	0.5496	$78,893
20		$163,546	$163,546	0.5326	$87,104
21		$143,546	$143,546	0.5161	$74,084
22		$143,546	$143,546	0.5001	$71,787
23		$143,546	$143,546	0.4846	$69,562
24		$143,546	$143,546	0.4696	$67,409
25		$163,546	$163,546	0.4550	$74,413
26		$143,546	$143,546	0.4409	$63,289
27		$143,546	$143,546	0.4272	$61,323
28		$143,546	$143,546	0.4140	$59,428
29		$143,546	$143,546	0.4011	$57,576
30		$163,546	$163,546	0.3887	$63,570
31		$143,546	$143,546	0.3766	$54,059
32		$143,546	$143,546	0.3650	$52,394
33		$143,546	$143,546	0.3536	$50,758
34		$143,546	$143,546	0.3427	$49,193
35		$163,546	$163,546	0.3321	$54,313
36		$143,546	$143,546	0.3218	$46,193
37		$143,546	$143,546	0.3118	$44,757
38		$143,546	$143,546	0.3021	$43,365
39		$143,546	$143,546	0.2927	$42,016
40		$163,546	$163,546	0.2837	$46,398

Table D-93. (Alternative 5), 216-B-38 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
41		$143,546	$143,546	0.2749	$39,461
42		$143,546	$143,546	0.2664	$38,241
43		$143,546	$143,546	0.2581	$37,049
44		$143,546	$143,546	0.2501	$35,901
45		$163,546	$163,546	0.2423	$39,627
46		$143,546	$143,546	0.2348	$33,704
47		$143,546	$143,546	0.2275	$32,657
48		$143,546	$143,546	0.2205	$31,652
49		$143,546	$143,546	0.2136	$30,661
50		$163,546	$163,546	0.2070	$33,854
51		$143,546	$143,546	0.2006	$28,795
52		$143,546	$143,546	0.1944	$27,905
53		$143,546	$143,546	0.1884	$27,044
54		$143,546	$143,546	0.1825	$26,197
55		$163,546	$163,546	0.1769	$28,931
56		$143,546	$143,546	0.1714	$24,604
57		$143,546	$143,546	0.1661	$23,843
58		$143,546	$143,546	0.1609	$23,096
59		$143,546	$143,546	0.1559	$22,379
60		$163,546	$163,546	0.1511	$24,712
61		$143,546	$143,546	0.1464	$21,015
62		$143,546	$143,546	0.1419	$20,369
63		$143,546	$143,546	0.1375	$19,738
64		$143,546	$143,546	0.1332	$19,120
65		$163,546	$163,546	0.1291	$21,114
66		$143,546	$143,546	0.1251	$17,958
67		$143,546	$143,546	0.1212	$17,398
68		$143,546	$143,546	0.1174	$16,852
69		$143,546	$143,546	0.1138	$16,335
70		$163,546	$163,546	0.1103	$18,039
71		$143,546	$143,546	0.1068	$15,331
72		$143,546	$143,546	0.1035	$14,857
73		$143,546	$143,546	0.1003	$14,398
74		$143,546	$143,546	0.0972	$13,953
75		$163,546	$163,546	0.0942	$15,406
76		$143,546	$143,546	0.0913	$13,106
77		$143,546	$143,546	0.0884	$12,689
78		$143,546	$143,546	0.0857	$12,302
79		$143,546	$143,546	0.0830	$11,914
80		$163,546	$163,546	0.0805	$13,165
81		$143,546	$143,546	0.0780	$11,197
82		$143,546	$143,546	0.0756	$10,852
83		$143,546	$143,546	0.0732	$10,508

Table D-93. (Alternative 5), 216-B-38 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
84		$143,546	$143,546	0.0709	$10,177
85		$163,546	$163,546	0.0687	$11,236
86		$143,546	$143,546	0.0666	$9,560
87		$143,546	$143,546	0.0645	$9,259
88		$143,546	$143,546	0.0625	$8,972
89		$143,546	$143,546	0.0606	$8,699
90		$163,546	$163,546	0.0587	$9,600
91		$143,546	$143,546	0.0569	$8,168
92		$143,546	$143,546	0.0551	$7,909
93		$143,546	$143,546	0.0534	$7,665
94		$143,546	$143,546	0.0518	$7,436
95		$163,546	$163,546	0.0502	$8,210
96		$143,546	$143,546	0.0486	$6,976
97		$143,546	$143,546	0.0471	$6,761
98		$143,546	$143,546	0.0456	$6,546
99		$143,546	$143,546	0.0442	$6,345
100		$163,546	$163,546	0.0429	$7,016
101		$143,546	$143,546	0.0415	$5,957
102		$143,546	$143,546	0.0402	$5,771
103		$143,546	$143,546	0.0390	$5,598
104		$143,546	$143,546	0.0378	$5,426
105		$163,546	$163,546	0.0366	$5,986
106		$143,546	$143,546	0.0355	$5,096
107		$143,546	$143,546	0.0344	$4,938
108		$143,546	$143,546	0.0333	$4,780
109		$143,546	$143,546	0.0323	$4,637
110		$163,546	$163,546	0.0313	$5,119
111		$143,546	$143,546	0.0303	$4,349
112		$143,546	$143,546	0.0294	$4,220
113		$143,546	$143,546	0.0285	$4,091
114		$143,546	$143,546	0.0276	$3,962
115		$163,546	$163,546	0.0267	$4,367
116		$143,546	$143,546	0.0259	$3,718
117		$143,546	$143,546	0.0251	$3,603
118		$143,546	$143,546	0.0243	$3,488
119		$143,546	$143,546	0.0236	$3,388
120		$163,546	$163,546	0.0228	$3,729
121		$143,546	$143,546	0.0221	$3,172
122		$143,546	$143,546	0.0214	$3,072
123		$143,546	$143,546	0.0208	$2,986
124		$143,546	$143,546	0.0201	$2,885
125		$163,546	$163,546	0.0195	$3,189
126		$143,546	$143,546	0.0189	$2,713

Table D-93. (Alternative 5), 216-B-38 Crib Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
127		$143,546	$143,546	0.0183	$2,627
128		$143,546	$143,546	0.0177	$2,541
129		$143,546	$143,546	0.0172	$2,469
130		$163,546	$163,546	0.0167	$2,731
131		$143,546	$143,546	0.0161	$2,311
132		$143,546	$143,546	0.0156	$2,239
133		$143,546	$143,546	0.0152	$2,182
134		$143,546	$143,546	0.0147	$2,110
135		$163,546	$163,546	0.0142	$2,322
136		$143,546	$143,546	0.0138	$1,981
137		$143,546	$143,546	0.0134	$1,924
138		$143,546	$143,546	0.0129	$1,852
139		$143,546	$143,546	0.0125	$1,794
140		$163,546	$163,546	0.0122	$1,995
141		$143,546	$143,546	0.0118	$1,694
142		$143,546	$143,546	0.0114	$1,636
143		$143,546	$143,546	0.0111	$1,593
144		$143,546	$143,546	0.0107	$1,536
145		$163,546	$163,546	0.0104	$1,701
146		$143,546	$143,546	0.0101	$1,450
147		$143,546	$143,546	0.0098	$1,407
148		$143,546	$143,546	0.0094	$1,349
149		$143,546	$143,546	0.0092	$1,321
150		$163,546	$163,546	0.0089	$1,456
				TOTAL PRESENT WORTH	**$75,048,974**

Table D-94. (Alternative 5), 216-B-38 Crib Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Purchase, Deliver, and Place Topsoil											
Purchase Pea Gravel (includes purchase and delivery)	174	cy		$55.67			$0	$9,687	$0	$0	$9,687
Silt Loam, from Pit 30 excavate/load (1,566 cy)	7.0	day			$296.00	$559.90	$0	$0	$2,072	$3,919	$5,991
Silt Loam Hauling, 2 Trucks, 7 Days/Each	14	day			$296.00	$398.55	$0	$0	$4,144	$5,580	$9,724
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	1,740	cy		$14.00	$10.00	$5.68	$0	$24,360	$17,400	$9,883	$51,643
Fine Grading and seeding, incl. lime, fert, and seed	2,609	sy		$0.26	$1.19	$0.18	$0	$678	$3,105	$470	$4,253
Oversight (10 days x 8 hrs/day)	80	hrs			$56.00		$0	$0	$4,480	$0	$4,480
					Total Cost		$0	$34,725	$31,601	$21,260	$87,586
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
					Total Cost		$0	$6,683	$5,920	$311	$12,913

Table D-95. (Alternative 5), 216-B-57 Crib Representative Site, Capital Costs 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	142	days			$1,720.00		$0	$0	$244,240	$0	$244,240
RCT Decontamination Crew (4 RCTs)	43	days			$1,792.00		$0	$0	$77,056	$0	$77,056
RCT on Excavator (1)	86	days			$448.00		$0	$0	$38,528	$0	$38,528
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845 lcy Contaminated Soil, or 6 Min)	5	ea	$5,000.00				$25,000	$0	$0	$0	$25,000
QC Samples (5% of Total Samples or 1 minimum)	1	ea	$5,000.00				$5,000	$0	$0	$0	$5,000
Air Sampling and Crew (Sampler and RCT)	90	days	$1,000.00		$896.00	$500.00	$90,000	$0	$80,640	$45,000	$215,640
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	86	days			$672.00		$0	$0	$57,792	$0	$57,792
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	1,697	ea	$1,100.00				$1,866,700	$0	$0	$0	$1,866,700
Fluor Hanford Field Cost							$1,993,300	$0	$498,256	$45,000	$2,536,556
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$74,738	$0	$74,738
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$6,750	$6,750
Fluor Hanford Total Cost							**$1,993,300**	**$0**	**$572,994**	**$51,750**	**$2,618,044**
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	6.8	mo				$350.00	$0	$0	$0	$2,380	$2,380
Field Office Support	6.8	mo		$139.00			$0	$945	$0	$0	$945
Storage Trailer	6.8	mo				$105.00	$0	$0	$0	$714	$714
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876

Table D-95. (Alternative 5), 216-B-57 Crib Representative Site, Capital Costs 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	1.38	ac	$1,748.00				$2,412	$0	$0	$0	$2,412
Site Utilities, Generator and Oiler	6.8	mo			$6,216.00	$1,394.80	$0	$0	$42,269	$9,485	$51,753
Install Temporary Fence (Blaze Orange)	1,162	lf		$1.63	$1.16		$0	$1,894	$1,348	$0	$3,242
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (See Table D-34)	1	ea		$6,682.86	$5,920.00	$310.56	$0	$6,683	$5,920	$311	$12,913
DECONTAMINATION											
Decontamination Crew (4 Laborers)	43	day			$1,184.00		$0	$0	$50,912	$0	$50,912
Water for Decon Process (1,000 gal/month)	2,050	gal		$0.20			$0	$410	$0	$0	$410
EXCAVATION											
Water Truck	86	day			$296.00	$80.00	$0	$0	$25,456	$6,880	$32,336
Hydraulic Excavator	86	day			$296.00	$559.90	$0	$0	$25,456	$48,152	$73,608
Front End Loader	86	day			$296.00	$630.27	$0	$0	$25,456	$54,203	$79,659
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler	2	day			$592.00	$1,851.60	$0	$0	$1,184	$3,703	$4,887
Water Truck	2	day			$296.00	$80.00	$0	$0	$592	$160	$752
SITE RESTORATION											
Fill soil, Front End Loader (2,393 cy no compaction)	2	day			$296.00	$630.27	$0	$0	$592	$1,261	$1,853
Fill soil, Bulldozer (2,393 cy no compaction)	2	day			$296.00	$656.42	$0	$0	$592	$1,313	$1,905
Fill soil, Front End Loader (22,869 cy)	16	day			$296.00	$630.27	$0	$0	$4,736	$10,084	$14,820
Fill soil, Bulldozer (22,869 cy)	16	day			$296.00	$656.42	$0	$0	$4,736	$10,503	$15,239
Fill soil, Vibratory Roller (22,869 cy)	16	day			$296.00	$353.98	$0	$0	$4,736	$5,664	$10,400
Fill soil, Excavate and load from Pit 30 (12,799 cy)	10	day			$592.00	$1,190.17	$0	$0	$5,920	$11,902	$17,822
Fill soil, Hauling, 5 Trucks, 10 Days/Each	50	day			$296.00	$398.55	$0	$0	$14,800	$19,928	$34,728
Fill soil, Front End Loader	10	day			$296.00	$630.27	$0	$0	$2,960	$6,303	$9,263
Fill soil, Bulldozer	10	day			$296.00	$656.42	$0	$0	$2,960	$6,564	$9,524
Fill soil, Vibratory Roller	10	day			$296.00	$353.98	$0	$0	$2,960	$3,540	$6,500
Compacted Silt Loam, Pit 30 excavate/load (2,861 cy)	2.5	day			$592.00	$1,190.17	$0	$0	$1,480	$2,975	$4,455
Compacted Silt Loam Hauling, 5 Trucks, 2.5 Days/Ea	12.5	day			$296.00	$398.55	$0	$0	$3,700	$4,982	$8,682
Compacted Silt Loam Layer, Front End Loader	2.5	day			$296.00	$630.27	$0	$0	$740	$1,576	$2,316

Table D-95. (Alternative 5), 216-B-57 Crib Representative Site, Capital Costs 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Compacted Silt Loam Layer, Bulldozer	2.5	day			$296.00	$656.42	$0	$0	$740	$1,641	$2,381
Compacted Silt Loam Layer, Vibratory Roller	2.5	day			$296.00	$353.98	$0	$0	$740	$885	$1,625
Silt Loam, from Pit 30 excavate/load (2,707 cy)	2.5	day			$592.00	$1,190.17	$0	$0	$1,480	$2,975	$4,455
Purchase Pea Gravel Layer	301	cy		$55.67			$0	$16,757	$0	$0	$16,757
Silt Loam Hauling, 5 Trucks, 2.5 Day/Each	12.5	day			$296.00	$398.55	$0	$0	$3,700	$4,982	$8,682
Silt Loam/Pea Gravel Layer, Front End Loader (400 cy)	2.5	day			$296.00	$630.27	$0	$0	$740	$1,576	$2,316
Silt Loam/Pea Gravel Layer, Bulldozer (400 cy)	2.5	day			$296.00	$656.42	$0	$0	$740	$1,641	$2,381
Silt Loam/Pea Gravel Layer, Vibratory Roller	2.5	day			$296.00	$353.98	$0	$0	$740	$885	$1,625
Revegetation (fine Grade & Seed Topsoil)	5,546	sy		$0.26	$1.19	$0.18	$0	$1,442	$6,600	$998	$9,040
Water Truck	39	day			$296.00	$80.00	$0	$0	$11,544	$3,120	$14,664
MISCELLANEOUS											
Support Personnel	142	day			$1,896.00		$0	$0	$269,232	$0	$269,232
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$2,412	$56,731	$550,767	$243,416	$853,327
Direct Markup on Labor @	25%						$0	$0	$137,692	$0	$137,692
Direct Markup on Materials @	10%						$0	$5,673	$0	$0	$5,673
Direct Markup on Subcontracts @	10%						$241	$0	$0	$0	$241
Construction Contractor G&A @	26.5%						$639	$15,034	$145,953	$64,505	$226,132
Construction Contractor Subtotal							$3,293	$77,437	$834,413	$307,922	$1,223,065
Fluor Hanford G&A on Construction Contractor Cost @	15%						$494	$11,616	$125,162	$46,188	$183,460
Construction Contractor Total Cost							$3,787	$89,053	$959,575	$354,110	$1,406,524
Fluor Hanford Total Cost (From Above)							$1,993,300	$0	$572,994	$51,750	$2,618,044

Table D-95. (Alternative 5), 216-B-57 Crib Representative Site, Capital Costs 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Project Subtotal							$1,997,087	$89,053	$1,532,569	$405,860	$4,024,569
Contingency on Field Costs @	20%										$804,914
TOTAL COST											**$4,829,482**

Table D-96. (Alternative 5), 216-B-57 Crib Representative Site, Periodic Costs 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$1,792		Cost is based on 16 hrs for every 50,000 sf (area = 49,915 sf) @ $112/hr
Radiation Survey of Surface Soil	$10,000		Cost is based on $1,000 for every 5,000 square feet (area = 49,915 sf)
Cover Maintenance	$21,588		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.

TOTALS	**$33,380**	**$20,000**

Table D-97. (Alternative 5), 216-B-57 Crib Representative Site, Present Worth Analysis 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$4,829,482		$4,829,482	1.0000	$4,829,482
1		$33,380	$33,380	0.9690	$32,345
2		$33,380	$33,380	0.9389	$31,341
3		$33,380	$33,380	0.9098	$30,369
4		$33,380	$33,380	0.8816	$29,428
5		$53,380	$53,380	0.8543	$45,603
6		$33,380	$33,380	0.8278	$27,632
7		$33,380	$33,380	0.8021	$26,774
8		$33,380	$33,380	0.7773	$25,946
9		$33,380	$33,380	0.7532	$25,142
10		$53,380	$53,380	0.7298	$38,957
11		$33,380	$33,380	0.7072	$23,606
12		$33,380	$33,380	0.6852	$22,872
13		$33,380	$33,380	0.6640	$22,164
14		$33,380	$33,380	0.6434	$21,477
15		$53,380	$53,380	0.6235	$33,282
16		$33,380	$33,380	0.6041	$20,165
17		$33,380	$33,380	0.5854	$19,541
18		$33,380	$33,380	0.5672	$18,933
19		$33,380	$33,380	0.5496	$18,346
20		$53,380	$53,380	0.5326	$28,430
21		$33,380	$33,380	0.5161	$17,227
22		$33,380	$33,380	0.5001	$16,693
23		$33,380	$33,380	0.4846	$16,176
24		$33,380	$33,380	0.4696	$15,675
25		$53,380	$53,380	0.4550	$24,288
26		$33,380	$33,380	0.4409	$14,717
27		$33,380	$33,380	0.4272	$14,260
28		$33,380	$33,380	0.4140	$13,819
29		$33,380	$33,380	0.4011	$13,389
30		$53,380	$53,380	0.3887	$20,749
31		$33,380	$33,380	0.3766	$12,571
32		$33,380	$33,380	0.3650	$12,184
33		$33,380	$33,380	0.3536	$11,803
34		$33,380	$33,380	0.3427	$11,439
35		$53,380	$53,380	0.3321	$17,728
36		$33,380	$33,380	0.3218	$10,742
37		$33,380	$33,380	0.3118	$10,408
38		$33,380	$33,380	0.3021	$10,084
39		$33,380	$33,380	0.2927	$9,770

Table D-97. (Alternative 5), 216-B-57 Crib Representative Site, Present Worth Analysis 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
40		$53,380	$53,380	0.2837	$15,144
41		$33,380	$33,380	0.2749	$9,176
42		$33,380	$33,380	0.2664	$8,892
43		$33,380	$33,380	0.2581	$8,615
44		$33,380	$33,380	0.2501	$8,348
45		$53,380	$53,380	0.2423	$12,934
46		$33,380	$33,380	0.2348	$7,838
47		$33,380	$33,380	0.2275	$7,594
48		$33,380	$33,380	0.2205	$7,360
49		$33,380	$33,380	0.2136	$7,130
50		$53,380	$53,380	0.2070	$11,050
51		$33,380	$33,380	0.2006	$6,696
52		$33,380	$33,380	0.1944	$6,489
53		$33,380	$33,380	0.1884	$6,289
54		$33,380	$33,380	0.1825	$6,092
55		$53,380	$53,380	0.1769	$9,443
56		$33,380	$33,380	0.1714	$5,721
57		$33,380	$33,380	0.1661	$5,544
58		$33,380	$33,380	0.1609	$5,371
59		$33,380	$33,380	0.1559	$5,204
60		$53,380	$53,380	0.1511	$8,066
61		$33,380	$33,380	0.1464	$4,887
62		$33,380	$33,380	0.1419	$4,737
63		$33,380	$33,380	0.1375	$4,590
64		$33,380	$33,380	0.1332	$4,446
65		$53,380	$53,380	0.1291	$6,891
66		$33,380	$33,380	0.1251	$4,176
67		$33,380	$33,380	0.1212	$4,046
68		$33,380	$33,380	0.1174	$3,919
69		$33,380	$33,380	0.1138	$3,799
70		$53,380	$53,380	0.1103	$5,888
71		$33,380	$33,380	0.1068	$3,565
72		$33,380	$33,380	0.1035	$3,455
73		$33,380	$33,380	0.1003	$3,348
74		$33,380	$33,380	0.0972	$3,245
75		$53,380	$53,380	0.0942	$5,028
76		$33,380	$33,380	0.0913	$3,048
77		$33,380	$33,380	0.0884	$2,951
78		$33,380	$33,380	0.0857	$2,861
79		$33,380	$33,380	0.0830	$2,771
80		$53,380	$53,380	0.0805	$4,297
81		$33,380	$33,380	0.0780	$2,604

Table D-97. (Alternative 5), 216-B-57 Crib Representative Site, Present Worth Analysis 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
82		$33,380	$33,380	0.0756	$2,524
83		$33,380	$33,380	0.0732	$2,443
84		$33,380	$33,380	0.0709	$2,367
85		$53,380	$53,380	0.0687	$3,667
86		$33,380	$33,380	0.0666	$2,223
87		$33,380	$33,380	0.0645	$2,153
88		$33,380	$33,380	0.0625	$2,086
89		$33,380	$33,380	0.0606	$2,023
90		$53,380	$53,380	0.0587	$3,133
91		$33,380	$33,380	0.0569	$1,899
92		$33,380	$33,380	0.0551	$1,839
93		$33,380	$33,380	0.0534	$1,782
94		$33,380	$33,380	0.0518	$1,729
95		$53,380	$53,380	0.0502	$2,680
96		$33,380	$33,380	0.0486	$1,622
97		$33,380	$33,380	0.0471	$1,572
98		$33,380	$33,380	0.0456	$1,522
99		$33,380	$33,380	0.0442	$1,475
100		$53,380	$53,380	0.0429	$2,290
101		$33,380	$33,380	0.0415	$1,385
102		$33,380	$33,380	0.0402	$1,342
103		$33,380	$33,380	0.0390	$1,302
104		$33,380	$33,380	0.0378	$1,262
105		$53,380	$53,380	0.0366	$1,954
106		$33,380	$33,380	0.0355	$1,185
107		$33,380	$33,380	0.0344	$1,148
108		$33,380	$33,380	0.0333	$1,112
109		$33,380	$33,380	0.0323	$1,078
110		$53,380	$53,380	0.0313	$1,671
111		$33,380	$33,380	0.0303	$1,011
112		$33,380	$33,380	0.0294	$981
113		$33,380	$33,380	0.0285	$951
114		$33,380	$33,380	0.0276	$921
115		$53,380	$53,380	0.0267	$1,425
116		$33,380	$33,380	0.0259	$865
117		$33,380	$33,380	0.0251	$838
118		$33,380	$33,380	0.0243	$811
119		$33,380	$33,380	0.0236	$788
120		$53,380	$53,380	0.0228	$1,217
121		$33,380	$33,380	0.0221	$738
122		$33,380	$33,380	0.0214	$714
123		$33,380	$33,380	0.0208	$694

Table D-97. (Alternative 5), 216-B-57 Crib Representative Site, Present Worth Analysis 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
124		$33,380	$33,380	0.0201	$671
125		$53,380	$53,380	0.0195	$1,041
126		$33,380	$33,380	0.0189	$631
127		$33,380	$33,380	0.0183	$611
128		$33,380	$33,380	0.0177	$591
129		$33,380	$33,380	0.0172	$574
130		$53,380	$53,380	0.0167	$891
131		$33,380	$33,380	0.0161	$537
132		$33,380	$33,380	0.0156	$521
133		$33,380	$33,380	0.0152	$507
134		$33,380	$33,380	0.0147	$491
135		$53,380	$53,380	0.0142	$758
136		$33,380	$33,380	0.0138	$461
137		$33,380	$33,380	0.0134	$447
138		$33,380	$33,380	0.0129	$431
139		$33,380	$33,380	0.0125	$417
140		$53,380	$53,380	0.0122	$651
141		$33,380	$33,380	0.0118	$394
142		$33,380	$33,380	0.0114	$381
143		$33,380	$33,380	0.0111	$371
144		$33,380	$33,380	0.0107	$357
145		$53,380	$53,380	0.0104	$555
146		$33,380	$33,380	0.0101	$337
147		$33,380	$33,380	0.0098	$327
148		$33,380	$33,380	0.0094	$314
149		$33,380	$33,380	0.0092	$307
150		$53,380	$53,380	0.0089	$475
				TOTAL PRESENT WORTH	**$5,979,578**

Table D-98. (Alternative 5), 216-B-57 Crib Representative Site, Calculation Sheet 200-PW-5 Fission Product Rich Process, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Purchase, Deliver, and Place Topsoil											
Purchase Pea Gravel (includes purchase and delivery)	37	cy		$55.67			$0	$2,060	$0	$0	$2,060
Silt Loam, from Pit 30 excavate/load (333 cy)	2	day			$296.00	$559.90	$0	$0	$592	$1,120	$1,712
Silt Loam Hauling, 2 Trucks, 2 Days/Each	4	day			$296.00	$398.55	$0	$0	$1,184	$1,594	$2,778
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	370	cy		$14.00	$10.00	$5.68	$0	$5,180	$3,700	$2,102	$10,982
Fine Grading and seeding, incl. lime, fert, and seed	555	sy		$0.26	$1.19	$0.18	$0	$144	$660	$100	$905
Oversight (3 days x 8 hrs/day)	24	hrs			$56.00		$0	$0	$1,344	$0	$1,344
					Total Cost		$0	$7,384	$7,880	$6,324	$21,588
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
					Total Cost		$0	$6,683	$5,920	$311	$12,913

Table D-99. (Alternative 5), 216-B-58 Trench Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
FLUOR HANFORD COST											
OVERSIGHT											
Construction Oversight (Includes 1 RCT)	36	days			$1,720.00		$0	$0	$61,920	$0	$61,920
RCT Decontamination Crew (4 RCTs)	12	days			$1,792.00		$0	$0	$21,504	$0	$21,504
RCT on Excavator (1)	12	days			$448.00		$0	$0	$5,376	$0	$5,376
SAMPLING CREWS AND SAMPLING											
Overburden Samples (6 Per Site)	6	ea	$1,100.00				$6,600	$0	$0	$0	$6,600
LLW Samples (1 per 845 lcy Contaminated Soil, or 6 Min)	1	ea	$5,000.00				$5,000	$0	$0	$0	$5,000
QC Samples (5% of Total Samples or 1 minimum)	1	ea	$5,000.00				$5,000	$0	$0	$0	$5,000
Air Sampling and Crew (Sampler and RCT)	16	days	$1,000.00		$896.00	$500.00	$16,000	$0	$14,336	$8,000	$38,336
Soil/Sediment Sampling Crew (Sampler 50% and RCT)	12	days			$672.00		$0	$0	$8,064	$0	$8,064
TRANSPORTATION AND DISPOSAL											
Transportation and Disposal of Rolloff Boxes to ERDF	275	ea	$1,100.00				$302,500	$0	$0	$0	$302,500
Fluor Hanford Field Cost							$335,100	$0	$111,200	$8,000	$454,300
Fluor Hanford G & A on Labor Cost @	15%						$0	$0	$16,680	$0	$16,680
Fluor Hanford G & A on Material Cost @	15%						$0	$0	$0	$0	$0
Fluor Hanford G & A on Equipment Cost @	15%						$0	$0	$0	$1,200	$1,200
Fluor Hanford Total Cost							**$335,100**	**$0**	**$127,880**	**$9,200**	**$472,180**
CONSTRUCTION CONTRACTOR COST											
MOBILIZATION/DEMOBILIZATION AND FIELD SUPPORT											
Office Trailer	1.7	mo				$350.00	$0	$0	$0	$595	$595
Field Office Support	1.7	mo		$139.00			$0	$236	$0	$0	$236
Storage Trailer	1.7	mo				$105.00	$0	$0	$0	$179	$179
Equipment Mobilization/Demobilization	13	ea			$100.00	$352.00	$0	$0	$1,300	$4,576	$5,876

Table D-99. (Alternative 5), 216-B-58 Trench Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Personnel Mobilization/Demobilization	15	ea			$592.00		$0	$0	$8,880	$0	$8,880
Construction Survey	0.42	ac	$1,748.00				$734	$0	$0	$0	$734
Site Utilities, Generator and Oiler	1.7	mo			$6,216.00	$1,394.80	$0	$0	$10,567	$2,371	$12,938
Install Temporary Fence (Blaze Orange)	750	lf		$1.63	$1.16		$0	$1,223	$870	$0	$2,093
Haul Road - Gravel, 6" thick	4,400	sy		$6.50	$0.33	$0.53	$0	$28,600	$1,452	$2,332	$32,384
Construct Decontamination Pad (See Table D-34)	1	ea		$6,682.86	$5,920.00	$310.56	$0	$6,683	$5,920	$311	$12,913
DECONTAMINATION											
Decontamination Crew (4 Laborers)	12	day			$1,184.00		$0	$0	$14,208	$0	$14,208
Water for Decon Process (1,000 gal/month)	600	gal		$0.20			$0	$120	$0	$0	$120
EXCAVATION											
Water Truck	12	day			$296.00	$80.00	$0	$0	$3,552	$960	$4,512
Hydraulic Excavator	12	day			$296.00	$559.90	$0	$0	$3,552	$6,719	$10,271
Front End Loader	12	day			$296.00	$630.27	$0	$0	$3,552	$7,563	$11,115
DYNAMIC COMPACTION											
Mobilization/Demobilization of Crane	1	ea			$5,375.00	$5,225.00	$0	$0	$5,375	$5,225	$10,600
Crane, Compaction with Oiler	2	day			$592.00	$1,851.60	$0	$0	$1,184	$3,703	$4,887
Water Truck	2	day			$296.00	$80.00	$0	$0	$592	$160	$752
SITE RESTORATION											
Fill soil, Front End Loader (2,074 cy no compaction)	1.5	day			$296.00	$630.27	$0	$0	$444	$945	$1,389
Fill soil, Bulldozer (2,074 cy no compaction)	1.5	day			$296.00	$656.42	$0	$0	$444	$985	$1,429
Fill soil, Front End Loader (267 cy)	0.5	day			$296.00	$630.27	$0	$0	$148	$315	$463
Fill soil, Bulldozer (267 cy)	0.5	day			$296.00	$656.42	$0	$0	$148	$328	$476
Fill soil, Vibratory Roller (267 cy)	0.5	day			$296.00	$353.98	$0	$0	$148	$177	$325
Fill soil, Excavate and load from Pit 30 (1,406 cy)	1	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Fill soil, Hauling, 5 Trucks, 1 Days/Each	5	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Fill soil, Front End Loader	1	day			$296.00	$630.27	$0	$0	$296	$630	$926
Fill soil, Bulldozer	1	day			$296.00	$656.42	$0	$0	$296	$656	$952
Fill soil, Vibratory Roller	1	day			$296.00	$353.98	$0	$0	$296	$354	$650
Compacted Silt Loam, Pit 30 excavate/load (805 cy)	1	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Compacted Silt Loam Hauling, 5 Trucks, 1 Days/Ea	5	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Compacted Silt Loam Layer, Front End Loader	1	day			$296.00	$630.27	$0	$0	$296	$630	$926

Table D-99. (Alternative 5), 216-B-58 Trench Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Compacted Silt Loam Layer, Bulldozer	1	day			$296.00	$656.42	$0	$0	$296	$656	$952
Compacted Silt Loam Layer, Vibratory Roller	1	day			$296.00	$353.98	$0	$0	$296	$354	$650
Silt Loam, from Pit 30 excavate/load (808 cy)	1	day			$592.00	$1,190.17	$0	$0	$592	$1,190	$1,782
Purchase Pea Gravel Layer	90	cy		$55.67			$0	$5,010	$0	$0	$5,010
Silt Loam Hauling, 5 Trucks, 1 Day/Each	5	day			$296.00	$398.55	$0	$0	$1,480	$1,993	$3,473
Silt Loam/Pea Gravel Layer, Front End Loader (898 cy)	1	day			$296.00	$630.27	$0	$0	$296	$630	$926
Silt Loam/Pea Gravel Layer, Bulldozer (898 cy)	1	day			$296.00	$656.42	$0	$0	$296	$656	$952
Silt Loam/Pea Gravel Layer, Vibratory Roller	1	day			$296.00	$353.98	$0	$0	$296	$354	$650
Revegetation (fine Grade & Seed Topsoil)	1,701	sy		$0.26	$1.19	$0.18	$0	$442	$2,024	$306	$2,773
Water Truck	7	day			$296.00	$80.00	$0	$0	$2,072	$560	$2,632
MISCELLANEOUS											
Support Personnel	36	day			$1,896.00		$0	$0	$68,256	$0	$68,256
Post Construction Documents	160	hr			$50.00		$0	$0	$8,000	$0	$8,000
Construction Contractor Field Cost							$734	$42,314	$151,568	$52,781	$247,398
Direct Markup on Labor @	25%						$0	$0	$37,892	$0	$37,892
Direct Markup on Materials @	10%						$0	$4,231	$0	$0	$4,231
Direct Markup on Subcontracts @	10%						$73	$0	$0	$0	$73
Construction Contractor G&A @	26.5%						$195	$11,213	$40,166	$13,987	$65,560
Construction Contractor Subtotal							$1,002	$57,759	$229,626	$66,768	$355,155
Fluor Hanford G&A on Construction Contractor Cost @	15%						$150	$8,664	$34,444	$10,015	$53,273
Construction Contractor Total Cost							$1,152	$66,423	$264,070	$76,783	$408,428
Fluor Hanford Total Cost (From Above)							$335,100	$0	$127,880	$9,200	$472,180

Table D-99. (Alternative 5), 216-B-58 Trench Representative Site, Capital Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Project Subtotal							$336,252	$66,423	$391,950	$85,983	$880,608
Contingency on Field Costs @	20%										$176,122
TOTAL COST											**$1,056,730**

Table D-100. (Alternative 5), 216-B-58 Trench Representative Site, Periodic Costs 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Item Cost		Notes
	Annually	per 5 Years	
Site Inspection	$1,792		Cost is based on 16 hrs for every 50,000 sf (area = 15,311 sf) @ $112/hr
Radiation Survey of Surface Soil	$3,000		Cost is based on $1,000 for every 5,000 square feet (area = 15,311 sf)
Cover Maintenance	$9,222		Cost includes the purchase of soil to repair ruts and holes over 10% of the site area. Refer to the calculation sheet.
Site Reviews		$20,000	Prepare Site Condition Report every 5 years.

TOTALS	**$14,014**	**$20,000**

Table D-101. (Alternative 5), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
0	$1,056,730		$1,056,730	1.0000	$1,056,730
1		$14,014	$14,014	0.9690	$13,580
2		$14,014	$14,014	0.9389	$13,158
3		$14,014	$14,014	0.9098	$12,750
4		$14,014	$14,014	0.8816	$12,355
5		$34,014	$34,014	0.8543	$29,058
6		$14,014	$14,014	0.8278	$11,601
7		$14,014	$14,014	0.8021	$11,241
8		$14,014	$14,014	0.7773	$10,893
9		$14,014	$14,014	0.7532	$10,555
10		$34,014	$34,014	0.7298	$24,823
11		$14,014	$14,014	0.7072	$9,911
12		$14,014	$14,014	0.6852	$9,602
13		$14,014	$14,014	0.6640	$9,305
14		$14,014	$14,014	0.6434	$9,017
15		$34,014	$34,014	0.6235	$21,208
16		$14,014	$14,014	0.6041	$8,466
17		$14,014	$14,014	0.5854	$8,204
18		$14,014	$14,014	0.5672	$7,949
19		$14,014	$14,014	0.5496	$7,702
20		$34,014	$34,014	0.5326	$18,116
21		$14,014	$14,014	0.5161	$7,233
22		$14,014	$14,014	0.5001	$7,008
23		$14,014	$14,014	0.4846	$6,791
24		$14,014	$14,014	0.4696	$6,581
25		$34,014	$34,014	0.4550	$15,476
26		$14,014	$14,014	0.4409	$6,179
27		$14,014	$14,014	0.4272	$5,987
28		$14,014	$14,014	0.4140	$5,802
29		$14,014	$14,014	0.4011	$5,621
30		$34,014	$34,014	0.3887	$13,221
31		$14,014	$14,014	0.3766	$5,278
32		$14,014	$14,014	0.3650	$5,115
33		$14,014	$14,014	0.3536	$4,955
34		$14,014	$14,014	0.3427	$4,803
35		$34,014	$34,014	0.3321	$11,296
36		$14,014	$14,014	0.3218	$4,510
37		$14,014	$14,014	0.3118	$4,370
38		$14,014	$14,014	0.3021	$4,234
39		$14,014	$14,014	0.2927	$4,102
40		$34,014	$34,014	0.2837	$9,650

Table D-101. (Alternative 5), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
41		$14,014	$14,014	0.2749	$3,852
42		$14,014	$14,014	0.2664	$3,733
43		$14,014	$14,014	0.2581	$3,617
44		$14,014	$14,014	0.2501	$3,505
45		$34,014	$34,014	0.2423	$8,242
46		$14,014	$14,014	0.2348	$3,290
47		$14,014	$14,014	0.2275	$3,188
48		$14,014	$14,014	0.2205	$3,090
49		$14,014	$14,014	0.2136	$2,993
50		$34,014	$34,014	0.2070	$7,041
51		$14,014	$14,014	0.2006	$2,811
52		$14,014	$14,014	0.1944	$2,724
53		$14,014	$14,014	0.1884	$2,640
54		$14,014	$14,014	0.1825	$2,558
55		$34,014	$34,014	0.1769	$6,017
56		$14,014	$14,014	0.1714	$2,402
57		$14,014	$14,014	0.1661	$2,328
58		$14,014	$14,014	0.1609	$2,255
59		$14,014	$14,014	0.1559	$2,185
60		$34,014	$34,014	0.1511	$5,140
61		$14,014	$14,014	0.1464	$2,052
62		$14,014	$14,014	0.1419	$1,989
63		$14,014	$14,014	0.1375	$1,927
64		$14,014	$14,014	0.1332	$1,867
65		$34,014	$34,014	0.1291	$4,391
66		$14,014	$14,014	0.1251	$1,753
67		$14,014	$14,014	0.1212	$1,698
68		$14,014	$14,014	0.1174	$1,645
69		$14,014	$14,014	0.1138	$1,595
70		$34,014	$34,014	0.1103	$3,752
71		$14,014	$14,014	0.1068	$1,497
72		$14,014	$14,014	0.1035	$1,450
73		$14,014	$14,014	0.1003	$1,406
74		$14,014	$14,014	0.0972	$1,362
75		$34,014	$34,014	0.0942	$3,204
76		$14,014	$14,014	0.0913	$1,279
77		$14,014	$14,014	0.0884	$1,239
78		$14,014	$14,014	0.0857	$1,201
79		$14,014	$14,014	0.0830	$1,163
80		$34,014	$34,014	0.0805	$2,738
81		$14,014	$14,014	0.0780	$1,093
82		$14,014	$14,014	0.0756	$1,059

Table D-101. (Alternative 5), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
83		$14,014	$14,014	0.0732	$1,026
84		$14,014	$14,014	0.0709	$994
85		$34,014	$34,014	0.0687	$2,337
86		$14,014	$14,014	0.0666	$933
87		$14,014	$14,014	0.0645	$904
88		$14,014	$14,014	0.0625	$876
89		$14,014	$14,014	0.0606	$849
90		$34,014	$34,014	0.0587	$1,997
91		$14,014	$14,014	0.0569	$797
92		$14,014	$14,014	0.0551	$772
93		$14,014	$14,014	0.0534	$748
94		$14,014	$14,014	0.0518	$726
95		$34,014	$34,014	0.0502	$1,708
96		$14,014	$14,014	0.0486	$681
97		$14,014	$14,014	0.0471	$660
98		$14,014	$14,014	0.0456	$639
99		$14,014	$14,014	0.0442	$619
100		$34,014	$34,014	0.0429	$1,459
101		$14,014	$14,014	0.0415	$582
102		$14,014	$14,014	0.0402	$563
103		$14,014	$14,014	0.0390	$547
104		$14,014	$14,014	0.0378	$530
105		$34,014	$34,014	0.0366	$1,245
106		$14,014	$14,014	0.0355	$497
107		$14,014	$14,014	0.0344	$482
108		$14,014	$14,014	0.0333	$467
109		$14,014	$14,014	0.0323	$453
110		$34,014	$34,014	0.0313	$1,065
111		$14,014	$14,014	0.0303	$425
112		$14,014	$14,014	0.0294	$412
113		$14,014	$14,014	0.0285	$399
114		$14,014	$14,014	0.0276	$387
115		$34,014	$34,014	0.0267	$908
116		$14,014	$14,014	0.0259	$363
117		$14,014	$14,014	0.0251	$352
118		$14,014	$14,014	0.0243	$341
119		$14,014	$14,014	0.0236	$331
120		$34,014	$34,014	0.0228	$776
121		$14,014	$14,014	0.0221	$310
122		$14,014	$14,014	0.0214	$300
123		$14,014	$14,014	0.0208	$291
124		$14,014	$14,014	0.0201	$282

Table D-101. (Alternative 5), 216-B-58 Trench Representative Site, Present Worth Analysis 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State, (4 pages).

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate at 3.2%	Present Worth
125		$34,014	$34,014	0.0195	$663
126		$14,014	$14,014	0.0189	$265
127		$14,014	$14,014	0.0183	$256
128		$14,014	$14,014	0.0177	$248
129		$14,014	$14,014	0.0172	$241
130		$34,014	$34,014	0.0167	$568
131		$14,014	$14,014	0.0161	$226
132		$14,014	$14,014	0.0156	$219
133		$14,014	$14,014	0.0152	$213
134		$14,014	$14,014	0.0147	$206
135		$34,014	$34,014	0.0142	$483
136		$14,014	$14,014	0.0138	$193
137		$14,014	$14,014	0.0134	$188
138		$14,014	$14,014	0.0129	$181
139		$14,014	$14,014	0.0125	$175
140		$34,014	$34,014	0.0122	$415
141		$14,014	$14,014	0.0118	$165
142		$14,014	$14,014	0.0114	$160
143		$14,014	$14,014	0.0111	$156
144		$14,014	$14,014	0.0107	$150
145		$34,014	$34,014	0.0104	$354
146		$14,014	$14,014	0.0101	$142
147		$14,014	$14,014	0.0098	$137
148		$14,014	$14,014	0.0094	$132
149		$14,014	$14,014	0.0092	$129
150		$34,014	$34,014	0.0089	$303
				TOTAL PRESENT WORTH	**$1,607,002**

Table D-102. (Alternative 5), 216-B-58 Trench Representative Site, Calculation Sheet 200-TW-1 Scavenged Tank Waste Group, Hanford Site, Washington State.

Item	Quantity	Unit	Unit Cost				Extended Cost				Subtotal
			Subcontract	Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
Purchase, Deliver, and Place Topsoil											
Purchase Pea Gravel (includes purchase and delivery)	11	cy		$55.67			$0	$612	$0	$0	$612
Silt Loam, from Pit 30 excavate/load (103 cy)	1	day			$296.00	$559.90	$0	$0	$296	$560	$856
Silt Loam Hauling, 2 Trucks, 1 Days/Each	2	day			$296.00	$398.55	$0	$0	$592	$797	$1,389
Equipment Mob/Demob	4	ea			$100.00	$352.00	$0	$0	$400	$1,408	$1,808
Place, grade, and compact backfill	114	cy		$14.00	$10.00	$5.68	$0	$1,596	$1,140	$648	$3,384
Fine Grading and seeding, incl. lime, fert, and seed	170	sy		$0.26	$1.19	$0.18	$0	$44	$202	$31	$277
Oversight (2.5 days x 8 hrs/day)	16	hrs			$56.00		$0	$0	$896	$0	$896
					Total Cost		$0	$2,253	$3,526	$3,443	$9,222
Decontamination Pad Construction											
Timber Grates	0.402	mbf		$577.00			$0	$232	$0	$0	$232
Install 60 mil LLDPE	1,188	sf		$0.44		$0.26	$0	$523	$0	$309	$832
3" SCH 80 PVC Pipe	5	lf		$1.63			$0	$8	$0	$0	$8
Sump Pump	1	ea		$2,005.00			$0	$2,005	$0	$0	$2,005
Sump Pump Hoses (50 lf)	1	ea		$493.00			$0	$493	$0	$0	$493
Sump Construction (2)	1	ls		$74.04		$1.68	$0	$74	$0	$2	$76
Temporary Storage Tank (1,000 gal)	2	ea		$1,674.00			$0	$3,348	$0	$0	$3,348
4 Laborers, 5 days to Build/Remove	5	day			$1,184.00		$0	$0	$5,920	$0	$5,920
					Total Cost		$0	$6,683	$5,920	$311	$12,913

Table D-103. Alternatives 2, 3, and 4 Representative and Analogous Site Information, Hanford Site, Richland Washington, (4 Pages).

Waste Site	Site Dimensions (ft)			Overburden Depth (ft)[2]	Side Slope Horiz Comp	Excavation Dimensions (ft)			Contaminated Volume (yd^3)[3]	Excavated Volume (yd^3)[4]	Overburden Soil Volume (yd^3)[5]	Area Ratio to Representative Site[6]	Volume Ratio to Representative Site[7]
	Length	Width	Thickness[1]			Length	Width	Depth					
216-T-26	30	30	34	18	1.5	186	186	52	1,133	26,370	25,236		
216-T-18	30	30	34	18	1.5	186	186	52	1,133	26,370	25,236	1.000	1.000
ABAR2E13 216-B-46 216-B-43 216-B-44 216-B-45 216-B-47 216-B-48 216-B-49 216-B-50	312	196	31	18	1.5	459	343	49	70,212	191,590	121,378		
ABAR2E06 216-B-14 216-B-15 216-B-16 216-B-17 216-B-18 216-B-19	390	230	58	3	1.5	573	413	61	191,265	355,491	164,226	1.467	2.290
200-E-114	15,134	4	10	13	1.5	15206	76	24	23,135	438,723	415,588	0.990	1.310
200-E-14	27	12.75	42	9	1.5	183	169	52	536	22,170	21,634	0.006	0.062
UPR-200-E-9	8.12	8.12	10	13	1.5	78	78	23	24	1,926	1,902	0.001	0.005
ABAR2E05 216-B-20 216-B-21 216-B-22	570	200	44	5	1.5	720	350	50	186,984	330,551	143,567	1.864	2.194
ABAR2E04 216-B-23 216-B-24 216-B-25 216-B-26 216-B-27 216-B-28 216-B-52	670	540	44	21	1.5	865	735	65	593,429	1,185,393	591,965	5.916	7.320

Table D-103. Alternatives 2, 3, and 4 Representative and Analogous Site Information, Hanford Site, Richland Washington, (4 Pages).

Waste Site	Site Dimensions (ft)			Overburden Depth (ft)[2]	Side Slope Horiz Comp	Excavation Dimensions (ft)			Contaminated Volume (yd^3)[3]	Excavated Volume (yd^3)[4]	Overburden Soil Volume (yd^3)[5]	Area Ratio to Representative Site[6]	Volume Ratio to Representative Site[7]
	Length	Width	Thickness[1]			Length	Width	Depth					
ABAR2E01 216-B-29 216-B-30 216-B-31 216-B-32 216-B-33 216-B-34	666.7	533	35	3	1.5	781	648	38	466,549	603,233	136,684	5.814	4.897
216-B-42	250	10	35	3	1.5	364	124	38	3,280	27,331	24,051	0.041	0.095
216-B-51	5	5	62	3	1.5	200	200	65	57	32,921	32,864	0.0004	0.086
216-BY-201	41.33	6.33	40	13	1.5	204	169	54	390	25,161	24,770	0.004	0.068
216-B-5													
NONE													
216-B-7A&B	48	14	23	15	1.5	162	128	38	572	11,794	11,222		
216-B-8[8]	12	12	42.5	22.5	1.5	207	207	65	227	36,494	36,267	0.048	0.429
	860	4	32	15	1.5	1001	145	47	4,029	99,182	95,152	1.147	1.605
216-B-9	194	64	40	16	1.5	362	232	56	18,509	88,972	70,463	4.139	3.355
241-B-361		20	19	6									
200-E-45[8]	8	8	42.5	2	1.5	143	143	45	101	12,032	11,931	0.021	0.145
UPR-200-E-7	5.48	5.48	30	0	1.5	96	96	30	33	3,619	3,586	0.010	0.044
216-T-3													
216-T-5	50	10	69	1	1.5	260	220	70	1,278	54,486	53,208	0.167	0.761
216-T-6 Sump	14	14	23	16	1.5	131	131	39	167	9,240	9,073	0.292	0.538
216-T-7 Crib (200-W-52) and Tile Field	310	84	40	19	1.5	490	264	60	38,819	158,103	119,284	8.680	6.724
216-T-32	14	14	20	15	1.5	122	122	36	146	7,461	7,315	0.292	0.444
241-T-361		20	19	6									

Table D-103. Alternatives 2, 3, and 4 Representative and Analogous Site Information, Hanford Site, Richland Washington, (4 Pages).

Waste Site	Site Dimensions (ft)			Overburden Depth (ft)[2]	Side Slope Horiz Comp	Excavation Dimensions (ft)			Contaminated Volume (yd^3)[3]	Excavated Volume (yd^3)[4]	Overburden Soil Volume (yd^3)[5]	Area Ratio to Representative Site[6]	Volume Ratio to Representative Site[7]
	Length	Width	Thickness[1]			Length	Width	Depth					
ABAR2E16 216-B-38 216-B-35 216-B-36 216-B-37 216-B-39 216-B-40 216-B-41	535	310	25	15	1.5	655	430	40	153,565	327,718	174,153		
ABAR2W02 216-T-14 216-T-15 216-T-16 216-T-17	260	260	25	15	1.5	380	380	40	62,593	153,481	90,889	0.408	0.438
ABAR2W05 216-T-21 216-T-22 216-T-23 216-T-24 216-T-25	330	305	25	15	1.5	450	425	40	93,194	212,663	119,468	0.607	0.628
216-B-57	200	15	35	15	1.5	350	165	50	3,889	45,625	41,736		
216-B-11A	8	8	70	25	1.5	293	293	95	166	103,511	103,345	0.021	1.156
216-B-11B	8	8	70	25	1.5	293	293	95	166	103,511	103,345	0.021	1.156
216-B-62	500	10	42	15	1.5	671	181	57	7,778	106,325	98,547	1.667	2.165
216-C-6	20	10	6	10	1.5	68	58	16	44	994	950	0.067	0.017
216-S-9[9]	300	30	57	15	1.5	516	246	72	18,900	150,876	131,976	3.000	4.083
216-S-21	16	16	23	23	1.5	157	157	47	217	15,909	15,692	0.085	0.202
216-B-58	200	10	15	10	1.5	275	85	25	1,111	9,942	8,831		
216-B-53A	100	10	23	2	1.5	175	85	25	852	6,090	5,238	1.488	1.002
216-B-53B	140	10	23	2	1.5	215	85	25	1,193	7,634	6,441	0.700	0.921
216-B-54	200	8	23	2	1.5	275	83	25	1,363	9,404	8,041	0.800	1.086

NOTES:

1 Thickness of contamination provided for representative sites. The thickness of contamination for analogous sites is a ratio of the old representative site thickness provided in waste site dimensions.xls and the new representative site thickness.

Table D-103. Alternatives 2, 3, and 4 Representative and Analogous Site Information, Hanford Site, Richland Washington, (4 Pages).

Waste Site	Site Dimensions (ft)			Overburden Depth (ft)[2]	Side Slope Horiz Comp	Excavation Dimensions (ft)			Contaminated Volume (yd^3)[3]	Excavated Volume (yd^3)[4]	Overburden Soil Volume (yd^3)[5]	Area Ratio to Representative Site[6]	Volume Ratio to Representative Site[7]
	Length	Width	Thickness[1]			Length	Width	Depth					

2 Overburden depth provided for representative sites. The overburden depth for analogous sites is a ratio of the old representative site overburden depth provided in waste site dimensions.xls and the new representative site overburden depth.

3 Contaminated Volume = (Site Dimensions) Length x Width x Thickness. Equals the volume of common fill required for backfill.

4 Excavated Volume = (Excavation Dimensions) Depth/3 [Area(top) + Area (base) + SQRT{Area(top) x Area(base)}] where Area(top) = (Site Dimensions) Length x Width and Area(base) = (Excavation Dimensions) Length x Width.

5 Overburden Soil Volume = Excavated Volume - Contaminated Volume

6 Area Ratio to Representative Site = Ratio between the analogous (Site Dimensions) Length x Width by representative (Site Dimensions) Length x Width.

7 Volume Ratio to Representative Site = Average of ratios between analogous Contaminated Volume by representative Contaminated Volume and analogous Excavated Volume by representative Contaminated Volume.

8 Thickness of contamination and overburden depth provided in waste site dimensions.xls. No ratio calculated.

9 Includes UPR-200-W-108 and UPR-200-W-109.

Shaded cells indicate representative sites.

Table D-104. Alternative 5 Representative and Analogous Site Information, Hanford Site, Richland Washington, (4 Pages).

Waste Site	Site Dimensions (ft)			Overburden Depth (ft)[2]	Side Slope Horiz Comp	Excavation Dimensions (ft)			Contaminated Volume (yd^3)[3]	Excavated Volume (yd^3)[4]	Overburden Soil Volume (yd^3)[5]	Area Ratio to Representative Site[6]	Volume Ratio to Representative Site[7]	Average Ratio
	Length	Width	Thickness[1]			Length	Width	Depth						
216-T-26	30	30	22	18	1.5	150	150	40	733	17,333	16,600			
216-T-18	30	30	22	18	1.5	150	150	40	733	17,333	16,600	1.000	1.000	1.000
ABAR2E13 216-B-46 216-B-43 216-B-44 216-B-45 216-B-47 216-B-48 216-B-49	312	196	7	18	1.5	387	271	25	15,854	76,865	61,011			
ABAR2E06 216-B-14 216-B-15 216-B-16 216-B-17 216-B-18 216-B-19	390	230	13	3	1.5	438	278	16	43,189	62,656	19,467	2.995	1.770	1.619
200-E-114	15,134	4	2	13	1.5	15182	52	16	5,224	251,852	246,628	--	--	--
200-E-14	27	12.75	10	9	1.5	84	70	19	121	2,190	2,069	0.011	0.032	0.022
UPR-200-E-9	8.12	8.12	10	13	1.5	78	78	23	24	2,619	2,595	0.002	0.031	0.017
ABAR2E05 216-B-20 216-B-21 216-B-22	570	200	10	5	1.5	618	248	16	42,222	79,189	36,967	3.806	1.847	1.856
ABAR2E04 216-B-23 216-B-24 216-B-25 216-B-26 216-B-27 216-B-28 216-B-52	670	540	10	21	1.5	763	633	31	134,000	484,966	350,966	12.079	7.381	6.649

Table D-104. Alternative 5 Representative and Analogous Site Information, Hanford Site, Richland Washington, (4 Pages).

Waste Site	Site Dimensions (ft)			Overburden Depth (ft)[2]	Side Slope Horiz Comp	Excavation Dimensions (ft)			Contaminated Volume (yd^3)[3]	Excavated Volume (yd^3)[4]	Overburden Soil Volume (yd^3)[5]	Area Ratio to Representative Site[6]	Volume Ratio to Representative Site[7]	Average Ratio
	Length	Width	Thickness[1]			Length	Width	Depth						
ABAR2E01 216-B-29 216-B-30 216-B-31 216-B-32 216-B-33 216-B-34	666.67	533	8	3	1.5	700	567	11	105,350	153,278	47,928	11.871	4.320	5.067
216-B-42	250	10	8	3	1.5	283	43	11	741	2,988	2,247	0.041	0.043	0.042
216-B-51	5	5	14	3	1.5	56	56	17	13	995	982	0.001	0.007	0.004
216-BY-201	41.33	6.33	9	13	1.5	108	73	22	88	3,319	3,230	0.009	0.043	0.026
216-B-5														
NONE														
216-B-7A&B	48	14	13	15	1.5	132	98	28	324	7,056	6,732			
216-B-8[8]	12	12	42.5	22.5	1.5	207	207	65	227	51,751	51,524	0.048	0.617	0.333
	860	4	18	15	1.5	959	103	33	2,277	62,466	60,189	1.147	1.045	1.096
216-B-9	194	64	23	16	1.5	311	181	39	10,462	49,622	39,160	4.139	2.128	3.134
241-B-361		20	19	6										
200-E-45[8]	8	8	42.5	2	1.5	143	143	45	101	17,094	16,993	0.021	0.208	0.115
UPR-200-E-7	5.48	5.48	30	0	1.5	96	96	30	33	5,137	5,103	0.010	0.063	0.037
216-T-3														
216-T-5	50	10	39	1	1.5	170	130	40	722	16,741	16,019	0.167	0.297	0.232
216-T-6 Sump	14	14	13	16	1.5	101	101	29	94	5,584	5,489	0.292	0.541	0.417
216-T-7 Crib (200-W-52) and Tile Field	310	84	23	19	1.5	436	210	42	21,941	91,467	69,526	8.680	4.322	6.501
216-T-32	14	14	11	15	1.5	95	95	27	83	4,611	4,528	0.292	0.454	0.373
241-T-361		20	19	6										
ABAR2E16 216-B-38 216-B-35 216-B-36 216-B-37 216-B-39 216-B-40 216-B-41	535	310	10	15	1.5	610	385	25	61,426	185,509	124,083			

Table D-104. Alternative 5 Representative and Analogous Site Information, Hanford Site, Richland Washington, (4 Pages).

Waste Site	Site Dimensions (ft)			Overburden Depth (ft)[2]	Side Slope Horiz Comp	Excavation Dimensions (ft)			Contaminated Volume (yd^3)[3]	Excavated Volume (yd^3)[4]	Overburden Soil Volume (yd^3)[5]	Area Ratio to Representative Site[6]	Volume Ratio to Representative Site[7]	Average Ratio
	Length	Width	Thickness[1]			Length	Width	Depth						
ABAR2W02 216-T-14 216-T-15 216-T-16 216-T-17	260	260	10	15	1.5	335	335	25	25,037	83,252	58,215	0.408	0.428	0.418
ABAR2W05 216-T-21 216-T-22 216-T-23 216-T-24 216-T-25	330	305	10	15	1.5	405	380	25	37,278	117,847	80,569	0.607	0.621	0.614
216-B-57	200	15	30	15	1.5	335	150	45	3,333	44,375	41,042			
216-B-11A	8	8	60	25	1.5	263	263	85	142	108,978	108,836	0.021	1.249	0.635
216-B-11B	8	8	60	25	1.5	263	263	85	142	108,978	108,836	0.021	1.249	0.635
216-B-62	500	10	36	15	1.5	653	163	51	6,667	105,248	98,581	1.667	2.186	1.927
216-C-6	20	10	1	10	1.5	53	43	11	7	505	498	0.067	0.007	0.037
216-S-9[9]	300	30	49	15	1.5	492	222	64	16,200	140,117	123,917	3.000	4.009	3.505
216-S-21	16	16	20	23	1.5	145	145	43	186	16,946	16,760	0.085	0.219	0.152
216-B-58	200	10	7	10	1.5	251	61	17	519	5,450	4,931			
216-B-53A	100	10	11	2	1.5	139	49	13	407	1,880	1,473	1.488	0.763	1.126
216-B-53B	140	10	11	2	1.5	179	49	13	570	2,449	1,878	0.700	0.775	0.738
216-B-54	200	8	11	2	1.5	239	47	13	652	3,089	2,438	0.800	0.912	0.856

NOTES:

1 Thickness of contamination provided for representative sites. The thickness of contamination for analogous sites is a ratio of the old representative site thickness provided in waste site dimensions.xls and the new representative site thickness.

2 Overburden depth provided for representative sites. The overburden depth for analogous sites is a ratio of the old representative site overburden depth provided in waste site dimensions.xls and the new representative site overburden depth.

3 Contaminated Volume = (Site Dimensions) Length x Width x Thickness. Equals the volume of common fill required for backfill.

4 Excavated Volume = [Area(top) + Area (base)] / 2 x (Excavation Dimensions) Depth where Area(top) = (Site Dimensions) Length x Width and Area(base) = (Excavation Dimensions) Length x Width.

5 Overburden Soil Volume = Excavated Volume - Contaminated Volume

6 Area Ratio to Representative Site = Ratio between the analogous (Site Dimensions) Length x Width by representative (Site Dimensions) Length x Width.

7 Volume Ratio to Representative Site = Average of ratios between analogous Contaminated Volume by representative Contaminated Volume and analogous Excavated Volume by representative Contaminated Volume.

8 Thickness of contamination and overburden depth provided in waste site dimensions.xls. No ratio calculated.

9 Includes UPR-200-W-108 and UPR-200-W-109.

Shaded cells indicate representative sites.

APPENDIX E

RISK ASSESSMENT FOR INADVERTENT INTRUDER SCENARIO

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CONTENTS

E1.0 INTRODUCTION E-1
E1.1 FUTURE CONSTRUCTION TRENCH WORKER INTRUDER SCENARIO E-2
E1.2 FUTURE WELL-DRILLER INTRUDER SCENARIO E-2
E1.3 FUTURE RURAL RESIDENTIAL INTRUDER SCENARIO E-3

E2.0 CONCEPTUAL SITE MODEL E-3

E3.0 RISK ASSESSMENT METHODOLOGY E-4
E3.1 EVALUATION OF POTENTIAL HUMAN HEALTH RISK E-4
E3.2 RESRAD CALCULATION METHODOLOGY E-4
E3.3 DOSE AND RISK TO RURAL RESIDENTIAL INTRUDER E-5

E4.0 CONCLUSIONS E-7

E5.0 REFERENCES E-8

FIGURES

Figure E-1. Conceptual Site Model for the Rural Residential Intruder Scenario. E-9

Figure E-2. 216-B-46 Crib Dose and Risk versus Depth E-10

Figure E-3. 216-T-26 Crib Dose and Risk versus Depth. E-10

Figure E-4. 216-B-58 Trench Dose and Risk versus Depth. E-11

Figure E-5. 216-B-43 Crib Dose and Risk versus Depth E-11

Figure E-6. 216-B-44 Crib Dose and Risk versus Depth E-12

Figure E-7. 216-B-45 Crib Dose and Risk versus Depth E-12

Figure E-8. 216-B-47 Crib Dose and Risk versus Depth E-13

Figure E-9. 216-B-48 Crib Dose and Risk versus Depth E-13

Figure E-10. 216-B-49 Crib Dose and Risk versus Depth E-14

Figure E-11. 216-B-26 Trench Dose and Risk versus Depth. E-14

Figure E-12. 216-B-7A Crib Dose and Risk versus Depth E-15

Figure E-13. 216-B-38 Trench Dose and Risk versus Depth. E-15

Figure E-14. 216-B-57 Crib Dose and Risk versus Depth....E-16

Figure E-15. 216-B-50 Crib Dose and Risk versus Depth....E-16

Figure E-16. Reduction in Intruder Dose with Excavation Depth....E-17

Figure E-17. Reduction in Intruder Risk with Excavation. Depth....E-18

TABLES

Table E-1. Concentrations at 5-Foot Depth....E-19

Table E-2. Concentrations at 10-Foot Depth....E-19

Table E-3. Concentrations at 15-Foot Depth....E-19

Table E-4. Concentrations at 20-Foot Depth....E-20

Table E-5. Concentrations at 25-Foot Depth....E-20

Table E-6. Concentrations at 30-Foot Depth....E-20

Table E-7. Summary of 150-Year Decay Intruder Scenario Soil Concentrations for RESRAD Input at 35 Feet....E-21

Table E-8. Summary of 150-Year Decay Intruder Scenario Soil Concentrations for RESRAD Input at 40 Feet....E-22

Table E-9. Summary of Well and Garden Dimensions....E-22

Table E-10. Cesium-137 Dose and Risk....E-23

Table E-11. Strontium-90 Dose and Risk....E-24

Table E-12. Plutonium-239/240 Dose and Risk....E-25

TERMS

CLUP-EIS	*Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement*, DOE/EIS-0222-F
COPC	contaminant of potential concern
EPA	U.S. Environmental Protection Agency
EPC	exposure-point concentration
ERDF	Environmental Restoration Disposal Facility
FFS	Focused Feasibility Study
ILAW	immobilized low-activity waste
RESRAD	RESidual RADioactivity (code)

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APPENDIX E

RISK ASSESSMENT FOR INADVERTENT INTRUDER SCENARIO

E1.0 INTRODUCTION

This appendix presents an analysis of three intruder scenarios that are being evaluated for this document, the Feasibility Study for the 200-TW-1 Scavenged Waste Group, the *200-TW-2 Tank Waste Group, and the 200-PW-5 Fission-Product-Rich Waste Group Operable Units*, (FS), DOE/RL-2003-23, and describes how the scenarios will be assessed in the FS. These scenarios are provided based on the framework documented in HAB Advice #132, "Exposure Scenarios Task Force on the 200 Area" (HAB 132) and is provided for informational purposes. Inadvertent intruder scenarios are based on the possibility that an individual unwittingly (through human error or loss of knowledge concerning the location of contaminants) engages in an activity that results in contact with wastes left in place (10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste"). The reasonably anticipated future land use for the 200 Areas is continued industrial activities based, on DOE/EIS-0222-F, *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement*, (CLUP-EIS) and the associated Record of Decision (64 FR 61615, "Record of Decision: Hanford Comprehensive Land-Use Plan Environmental Impact Statement (HCP EIS"). For locations within the industrial area, the U.S. Department of Energy dose limits for the protection of workers and the affected public will be in effect for as long as facility management operations continue. After a period of 50 years, it is assumed that all operations will have ceased, and public entry to the site will be restricted for an additional 100 years by enforcement of institutional controls.

After the cessation of operations, protection of human receptors would be based on U.S. Environmental Protection Agency (EPA) guidance for protection of individuals receiving a reasonable maximum exposure. The goal is to achieve a 10^{-4} to 10^{-6} risk range, using a direct exposure dose of 15 mrem/yr above background as an operational guideline to achieve this goal.

For purposes of evaluating risk, it is presumed that after 150 years an intruder could obtain access to the area. Of the three intruder scenarios proposed for evaluation (see below), the third is considered to be the worst-case scenario, because exposure time would be the greatest. Therefore, the third scenario is the focus of the analysis presented in this appendix and is assumed to bound scenarios 1 and 2.

1. Future Construction Trench Worker Intruder Scenario
2. Future Well Driller Intruder Scenario (drill cuttings)
3. Future Rural Residential Intruder Scenario (drill cuttings).

In addition to the intruder scenarios and the baseline evaluations of industrial and groundwater protection scenarios (Appendix C), a hypothetical Native American scenario also is evaluated in the FS. This hypothetical Native American scenario is intended to recognize the cultural and life-style differences of tribal activities under baseline conditions. This evaluation is presented in Appendix C.

The future rural residential intruder scenario was evaluated for the following representative and analogous waste sites:

- 216-B-46 Crib
- 216-T-26 Crib
- 216-B-58 Trench
- 216-B-43 Crib
- 216-B-44 Crib
- 216-B-45 Crib
- 216-B-47 Crib
- 216-B-48 Crib
- 216-B-49 Crib
- 216-B-26 Trench
- 216-B-7A Crib
- 216-B-38 Trench
- 216-B-57 Crib
- 216-B-50 Crib.

These waste sites will be evaluated for an exposure time starting at 150 years in the future, when it is postulated that the institutional controls fail.

E1.1 FUTURE CONSTRUCTION TRENCH WORKER INTRUDER SCENARIO

Contact with contaminants by inadvertently excavating a utilities trench or other construction activity (including the excavation of a basement or building foundation) through a waste site defines a reasonable maximum exposure event that could result in acute exposure to a future worker.

The worker at the trench construction site is assumed to be exposed 8 hours a day for 5 days. The dose to the worker is the sum of the contributions from inhaling resuspended dust, inadvertently ingesting soil, and direct exposure at the center of a 200 m^2 (2,153 ft^2) slab of contaminated soil for 40 hours. It is anticipated that this scenario is bounded by (1) the future rural residential intruder scenario, caused by the use of excavation equipment, which would reduce direct exposure, and (2) the limited amount of time present at the site during construction of the trench.

E1.2 FUTURE WELL-DRILLER INTRUDER SCENARIO

This exposure scenario estimates risk and dose associated with inadvertently drilling a well at a waste site. The drill cuttings (i.e., uncontaminated and contaminated soil) are assumed to have been spread over the work area near the well. Based on the evaluations for DOE/ORP-2000-24, *Hanford Immobilized Low-Activity Waste Performance Assessment: 2001 Version* (ILAW performance assessment) and BHI-00169, *Environmental Restoration Disposal Facility Performance Assessment* (ERDF performance assessment), the diameter of the well for this evaluation is assumed to be 0.3 m (1 ft). Although consistent with the diameters used in Hanford Site performance assessments, this diameter is larger than the range of well diameters commonly found in local communities (10.2 to 25.4 cm [4 to 10 in.]). Use of this well diameter may overestimate the dose associated with this exposure scenario. The area on which the driller spreads the cuttings is assumed to be 200 m^2 (2,153 ft^2), a size historically used in Hanford Site performance assessments.

In the well driller intruder scenario, the soil mixing depth is assumed to be 15 cm (6 in.), a depth used in other onsite performance assessments. The worker at the well drilling site is assumed to be exposed 8 hours a day for 5 days. The dose to the worker is the sum of the contributions from inhaling resuspended dust, inadvertently ingesting soil, and direct exposure at the center of a 200 m^2 (2,153-ft^2) slab of contaminated soil for 40 hours.

E1.3 FUTURE RURAL RESIDENTIAL INTRUDER SCENARIO

This scenario assumes that a receptor is residing within the area and has planted a garden using the drill cuttings taken from a well drilled through the waste site, as discussed above in the well-driller scenario. The resident receives dose from direct exposure to the radiation field in the garden, inhales resuspended dust, ingests soil at the same rates as the well driller, and consumes garden produce grown in the contaminated soil. Consumption of groundwater is not included in this evaluation, because groundwater in this area currently is under remediation and is not available for use. This scenario is consistent with other inadvertent intruder evaluations conducted within the Central Plateau. The resident is assumed to spread the waste over a garden 200 m^2 (2,153 ft^2) in area and to a depth of 15 cm (6 in.). The garden area was taken from the ILAW performance assessment (DOE/ORP-2000-24), because the size represents an area large enough to supply a significant portion of a person's vegetable and fruit diet, yet small enough to produce a higher (more conservative) estimation of dose.

The resident is assumed to spend 20 percent of the time in the garden, 60 percent of the time indoors exposed to dust from the garden, and 20 percent of the time offsite. The predicted dose depends on the area of the resident's garden and the amount of time the resident spends in the garden. The radionuclide concentration in the soil, and consequently the dose rate, is inversely proportional to the size of the garden, which implies that a smaller garden will produce a larger dose. However, where direct doses dominate, a smaller garden area (i.e., 200 m^2 [2,153 ft^2]) produces only a moderate increase in total dose.

E2.0 CONCEPTUAL SITE MODEL

Initial concentration values used for the rural residential intruder are presented in Tables E-1 through E-8 for the representative and analogous waste sites evaluated. The tables are in 5-ft increments from 5 to 30 ft (or to 40 f where data were available) bgs. The calculations assume that the cuttings are completely composed of the highest contamination concentration for each constituent. The contaminated volume is calculated from the depth of excavation to a depth of 75 ft bgs, with the rest of the cuttings being considered as noncontaminated soil. The upper limit was chosen as the depth of excavation, because the material used to back fill contains no contamination. The lower depth limit for contamination was determined from examining the data from characterization wells in the area, which indicate contamination concentrations have dropped to less than 1 pCi/g. The exposure-point concentration (EPC) for the rural residential intruder are based on dilution of the drill cuttings from being spread over the garden and mixed with soil as described previously.

Figure E-1 represents the conceptual site model for the exposure scenario. The contaminated drill cuttings are brought to the surface and intermixed with garden soils adjacent to the barrier. It is assumed that the entire volume of the drill cuttings is intermixed with soils in a 200 m^2 (2,153 ft^2) by 0.15 m (6 in.) deep layer covering the entire garden.

E3.0 RISK ASSESSMENT METHODOLOGY

E3.1 EVALUATION OF POTENTIAL HUMAN HEALTH RISK

Human health risk resulting from radionuclide contaminants of potential concern (COPC) was evaluated using the RESidual RADioactivity (RESRAD) computer model. The RESRAD code was developed by Argonne National Laboratory (*RESRAD for Windows* [ANL 2002]) to implement U.S. Department of Energy guidelines for allowable residual radioactive material in soil (DOE Order 5400.5, *Radiation Protection of the Public and the Environment*). The code was evaluated by the EPA for use in performing dose assessments to support the EPA guidance limit for radiation dose from contaminated sites to 15 mrem/yr above background (EPA 1997, OSWER No. 9200.4-18, *Establishment of Cleanup Levels for CERCLA with Radioactive Contamination*). The RESRAD determinations include calculating the total excess cancer risk for radionuclides using EPA, 2001, *Health Effects Assessment Summary Tables* database, "Update of Radionuclide Carcinogenicity Slope Factors," "April 16, 2001 Update: Radionuclide Toxicity," available on the Internet at www.epa.gov/radiation/heast).

E3.2 RESRAD CALCULATION METHODOLOGY

RESRAD is a pathway analysis code that calculates radiation doses to a hypothetical individual living on a contaminated site. ANL/EAD-4, *User's Manual for RESRAD Version 6*, provides information on the design and application of the RESRAD code. It describes the basic models and parameters used in the RESRAD code to calculate dose and risk from residual radioactive materials and the procedures for applying these models to calculate operational guidelines for remediation of soil contamination.

Exposure pathways were evaluated by RESRAD using a rural residential intruder scenario, including annual irrigation of 0.76 m (30 in.) per year. The rural residential scenario exposure pathway evaluations include exposure via inhalation, inadvertent soil ingestion, external gamma radiation, and exposure from water-dependent pathways (e.g., ingestion of plants, meat, milk). The selected exposure pathways are consistent with the recommendations provided by ANL/EAD-4, with the exception of the radon gas exposure pathway. Exposure to radon gas is not a pathway in the rural residential scenario because of a lack of enclosed areas that may capture significant amounts of radon. However, the occurrence of radon gas as a daughter product from decay of thorium and uranium isotopes is evaluated by RESRAD.

Although the RESRAD model provides default values, site-specific input parameters normally are used to obtain representative results. The site-specific and default input parameters used in

this evaluation are consistent with those used in preparation of the baseline risk assessment presented in Appendix C of this FS report. Table E-9 summarizes well and garden dimension inputs.

E3.3 DOSE AND RISK TO RURAL RESIDENTIAL INTRUDER

Direct Exposure to Radionuclides

The parameters of the exposure pathways described in Appendix C were used with the RESRAD model to evaluate the dose and risk resulting from activities (i.e., concentrations) of individual radionuclides for the rural residential intruder scenario. The intruder RESRAD calculation was evaluated at time zero which equates with the time of maximum dose and risk to the intruder. This timeframe is consistent with having the radionuclides decay in situ for 150 years (during the time that institutional controls are in place) and then running the intruder scenario exercise.

All of the representative and analogous waste sites present unacceptable incremental cancer risks at the start of the intruder scenario when no removal of waste site contamination is performed. With incremental removal of soil (with depth referenced from the ground surface), all waste sites exhibit differing decreases in risk at various depths (dependent on radionuclide concentration and depth distribution). Excavation depths were limited to 30 f bgs for many sites that possessed borehole data no deeper than approximately 30 ft. When deeper data were available, they were used.

RESRAD intruder results indicated that the predominate isotopes that contribute to the dose and risk values are Cs-137, Pu-239/240, and Sr-90. To determine the effect that each isotope exerts independently, concentrations were entered into RESRAD for only that isotope and with no other isotopes present. Tables E-10, E-11, and E-12 summarize the results for the three isotopes (Cs-137, Sr-90, and Pu-239/240, respectively). Because the dose and risk values are additive, Tables E-10, E-11, and E-12 provide a rough estimate of current permissible concentrations, which allow achievement of the intruder risk scenario.

Following is a summary for each representative and analogous site:

- 216-B-46 Crib

  The largest concentrations of Cs-137 and Sr-90 occur around 20 ft bgs. Excavation will be required to 30 ft bgs to obtain acceptable dose and risk levels. Figure E-2 shows dose and risk vs depth for the crib.

- 216-T-26 Crib

  Analytical data indicate that two predominate Cs-137 concentrations occur at approximately 19 and 35 ft, and a Pu-239/240 concentration peak occurs at 35 ft bgs. The 35-ft bgs peak results a barely unacceptable risk level. Figure E-3 reflects the removal of the 19-ft peak.

- 216-B-58 Trench

  The prominent isotopes are Cs-137 and Pu-239/240, which have major concentration decreases at 20 and 25 ft bgs, respectively. Figure E-4 indicates that excavation to 20 ft bgs will achieve acceptable dose and risk levels.

- 216-B-43 Crib

  Concentration spikes for Cs-137 and Sr-90 occur approximately 20 ft bgs. Figure E-5 indicates that excavation to approximately 25 ft bgs will achieve acceptable risk and dose levels.

- 216-B-44 Crib

  The largest concentrations of Cs-137, Sr-90, and Pu-239/240 start at approximately 22 ft bgs and continue to the bottom of sampling data depth at 31.5 ft bgs. Because no data exist beyond 31.5 ft bgs, Figure E-6 indicates unacceptable dose and risk levels.

- 216-B-45 Crib

  The largest concentrations of Cs-137, Sr-90, and Pu-239/240 occur between approximately 17 and 21 ft bgs. Sufficient quantities of Cs-137 and Sr-90 are present at the end of the sample depth (29.5 ft bgs) to keep both dose and risk at unacceptable levels. Figure E-7 shows dose and risk vs depth for the crib.

- 216-B-47 Crib

  The largest concentrations of Cs-137, Sr-90, and Pu-239/240 begin near approximately 21 ft bgs and continue to the bottom of sampling data depth at 35 ft bgs. Sufficient quantities of Cs-137, Sr-90, and Pu-239/240 are present at the end of the sample depth to keep both dose and risk at unacceptable levels. Figure E-8 indicates large dose and risk reduction at 25 ft bgs, but unacceptable dose and risk levels still exist.

- 216-B-48 Crib

  Risk and dose values are dominated by the Cs-137, Sr-90, and Pu-239/240 isotopes, with results shown in Figure E-9. The bulk of Pu-239/240 is located between 19 and 22 ft bgs, while Cs-137 and Sr-90 concentrations are located between 17 and 30.5 ft bgs. Acceptable dose and risk values are achieved by excavating to 30 ft bgs.

- 216-B-49 Crib

  Risk and dose values fall to acceptable values after excavating to 20 ft bgs, as shown in Figure E-10. Cesium-137 concentrations continue to exist down through the vadose zone, but do not exceed dose and risk criteria.

- 216-B-26 Trench

Dose and risk values fall to acceptable levels after excavating to 20 ft bgs, as shown in Figure E-11. Risk levels are being driven by thorium isotopes. Sampling data for the trench indicate that thorium values exist for the entire depth (295 ft bgs).

- 216-B-7A Crib

  Risk and dose values are dominated by the Cs-137 and Pu-239/240 isotopes, with results shown in Figure E-12. The bulk of Cs-137 and Pu-239/240 is located between 18 and 28 ft. Excavating to 30 ft bgs results in acceptable dose and risk values.

- 216-B-38 Trench

  Cs-137 concentrations peak between 14 and 20 ft, but elevated values are present through 40 ft. However, excavation to 36 ft reduces the dose and risk to acceptable levels. Figure E-13 reflects the removal of the main concentration peak.

- 216-B-57 Crib

  Cs-137 concentrations peak in the range of 30 to 34 feet bgs, as shown in Figure E-14. Excavating to 34 ft reduces the dose and risk to acceptable levels.

- 216-B-50 Crib

  Risk and dose values fall to acceptable values after excavation to 25 ft bgs, as shown in Figure E-15.

Figure E-16 depicts dose vs excavation depth for all of the waste sites considered; Figure E-17 depicts risk vs excavation depth. It can be seen that significant reduction in dose and risk is possible for all waste sites. The amount of reduction in dose and risk values varies greatly between the sites, with 8 of the 14 sites able to attain acceptable values by excavating to 30 f bgs. Another site is close to achieving acceptable risk values with excavation to slightly greater than 30 ft bgs. An additional three sites, for which deeper analyses exist, achieve acceptable dose and risk reduction with excavation to less than 40 ft.

E4.0 CONCLUSIONS

Considerable dose and risk reduction can be achieved by excavation to 25-35 ft. The results show dose and risk below regulatory guidelines (15 mrem/yr above background dose and 10^{-4} to 10^{-6} risk) at the 150-year mark for 8 of the 14 waste sites evaluated, by excavation to 30 ft bgs. Excavation to 35 ft will suffice for another three sites. Lack of deeper sampling data prevented determination of excavation depths that correspond to achieving guideline values for the remaining sites.

E5.0 REFERENCES

10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste," Title 10, *Code of Federal Regulations*, Part 61, as amended.

64 FR 61615, "Record of Decision: Hanford Comprehensive Land-Use Plan Environmental Impact Statement (HCP EIS)," *Federal Register*, Vol. 64, No. 218, pp. 61615-61625, November 12, 1999.

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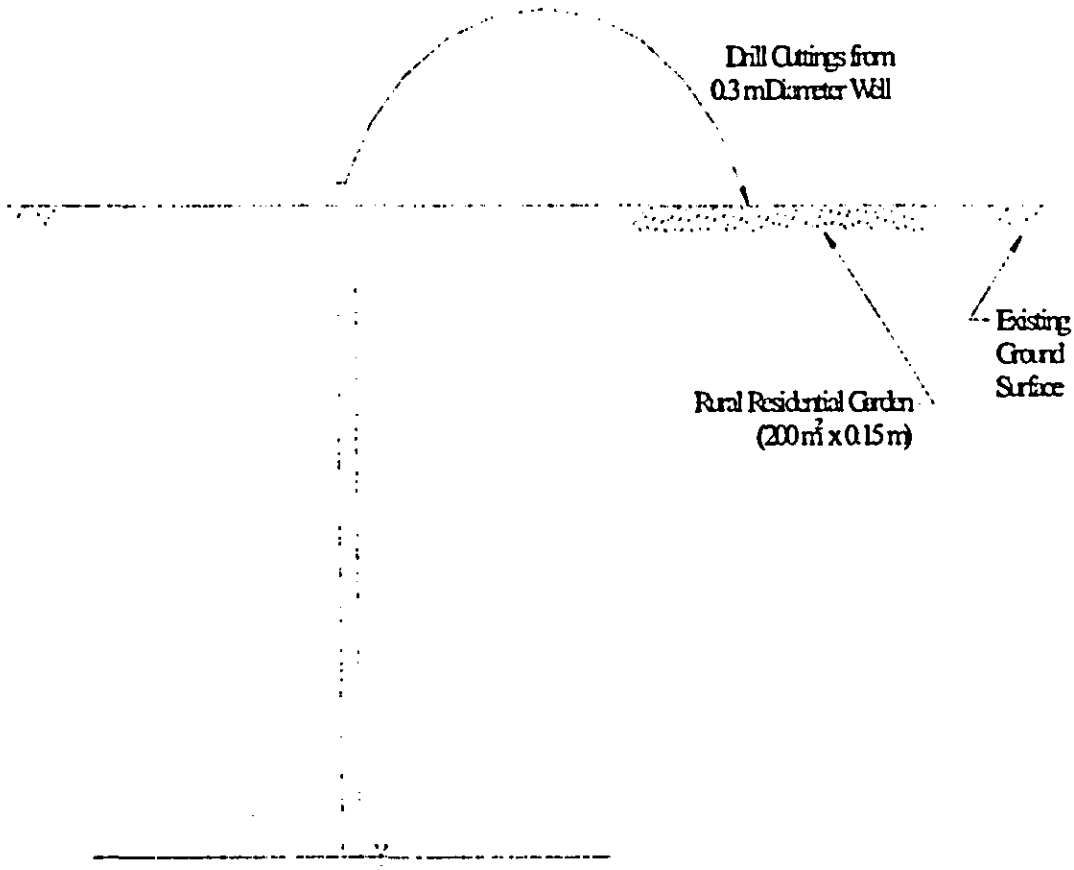
EPA, 1997, OSWER Directive 9200.4-18, *Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination*, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C.

EPA, 2001, *Health Effects Assessment Summary Tables* database, "Update of Radionuclide Carcinogenicity Slope Factors," "April 16, 2001 Update: Radionuclide Toxicity," U.S. Environmental Protection Agency, Washington, D.C., available on the Internet at http://www.epa.gov/radiation/heast/index.html.

HAB 132, 2002, "Exposure Scenarios Task Force on the 200 Area" (letter to K. Klein, H. Boston, J. Iani, and T. Fitzsimmons from T. Martin), Hanford Advisory Board Consensus Advice # 132, Richland, Washington, June 7.

Figure E-1. Conceptual Site Model for the Rural Residential Intruder Scenario.



NOT TO SCALE

Figure E-2. 216-B-46 Crib Dose and Risk versus Depth.

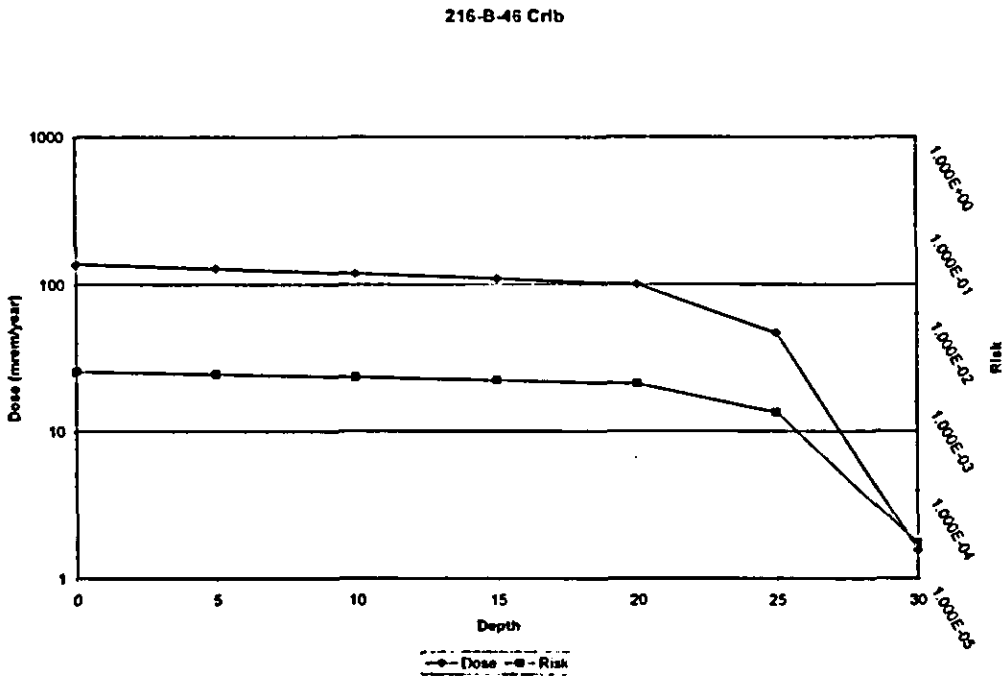


Figure E-3. 216-T-26 Crib Dose and Risk versus Depth.

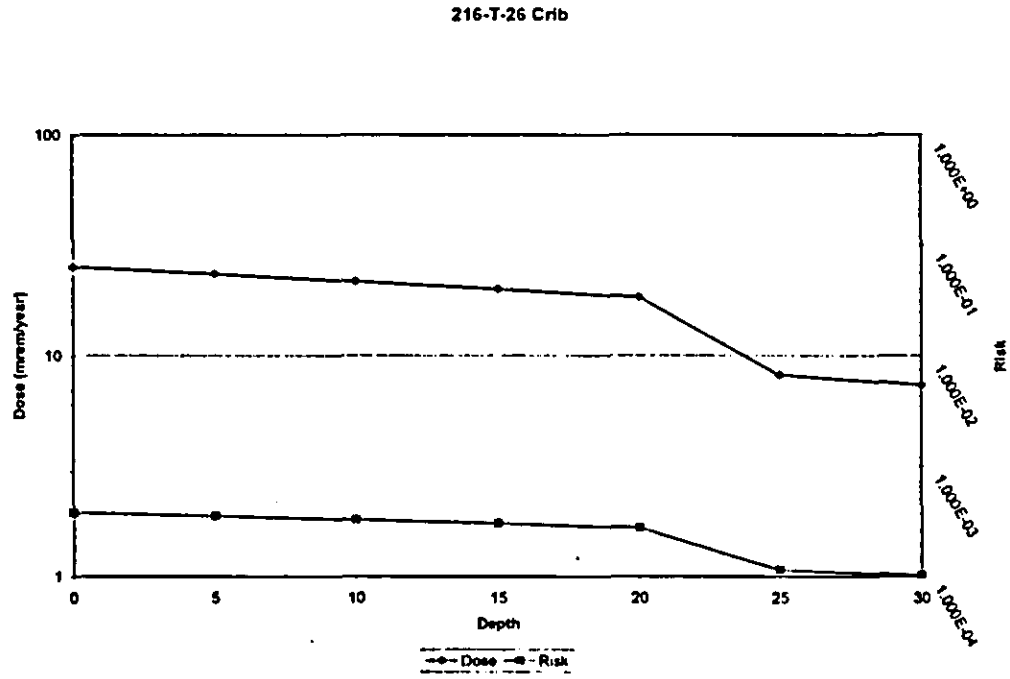


Figure E-4. 216-B-58 Trench Dose and Risk versus Depth.

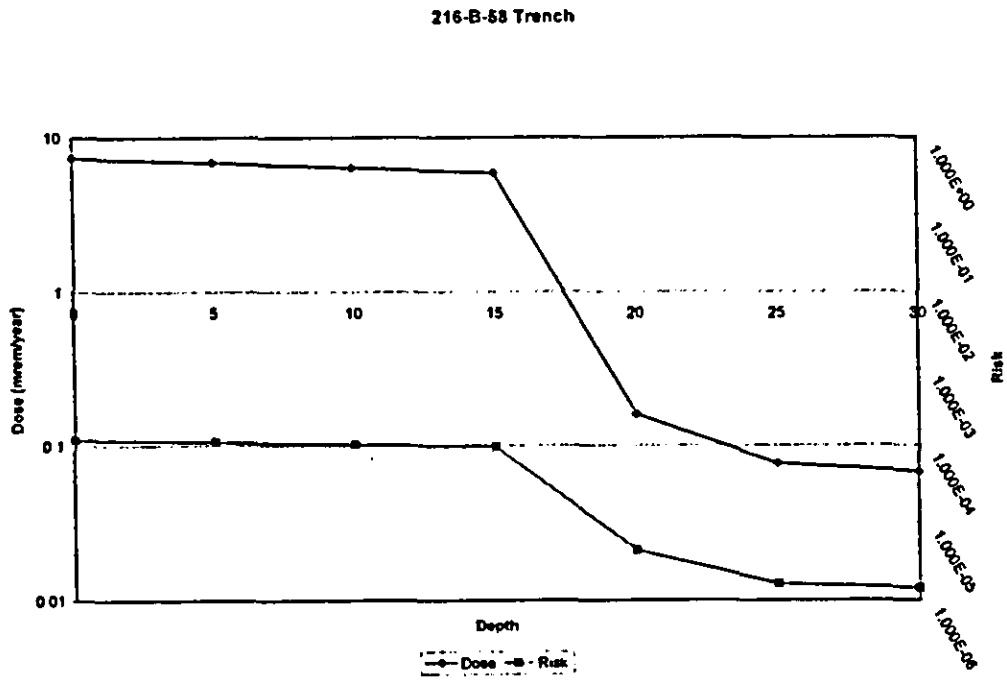


Figure E-5. 216-B-43 Crib Dose and Risk versus Depth.

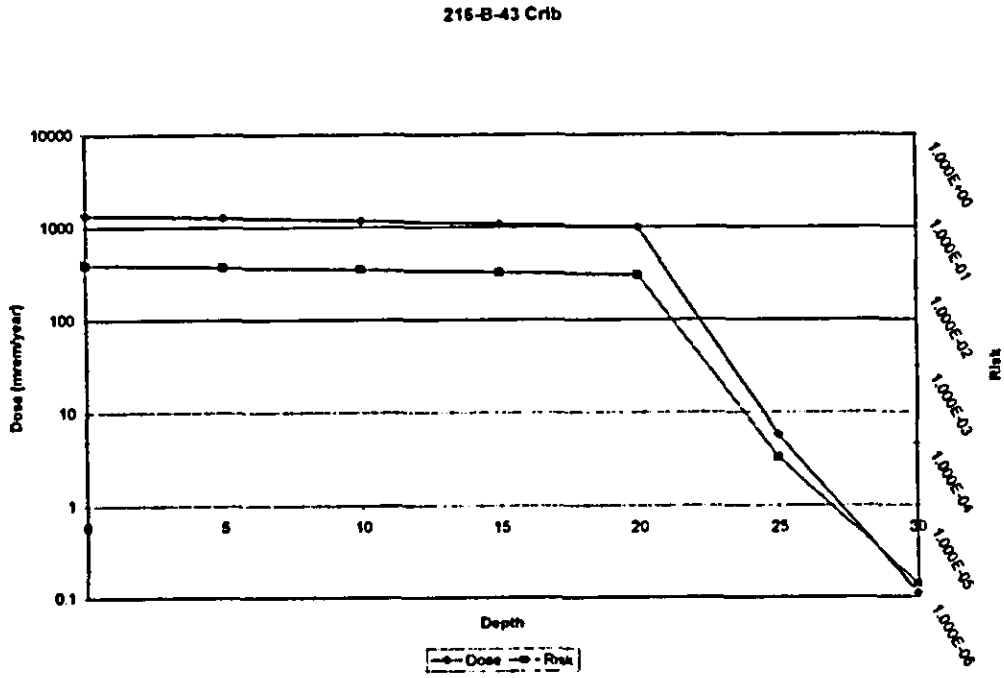


Figure E-6. 216-B-44 Crib Dose and Risk versus Depth.

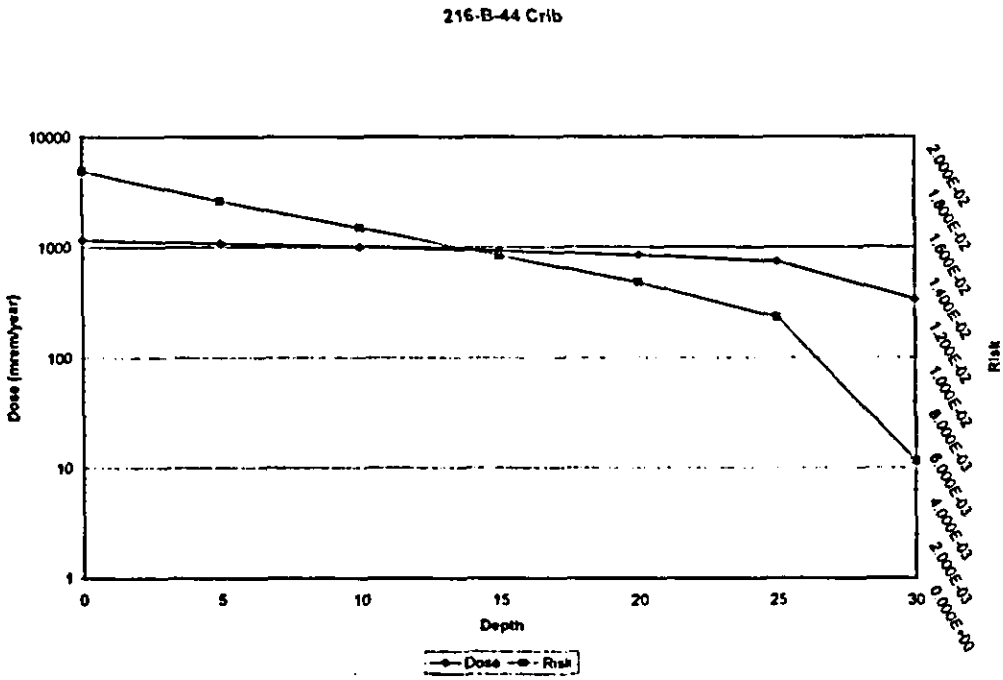


Figure E-7. 216-B-45 Crib Dose and Risk versus Depth.

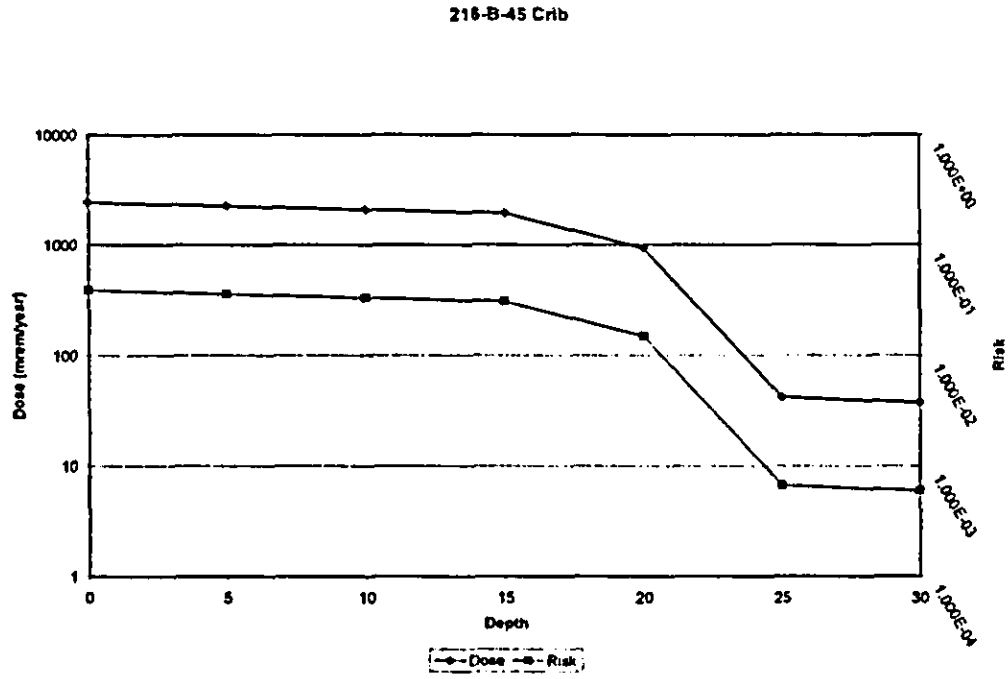


Figure E-8. 216-B-47 Crib Dose and Risk versus Depth.

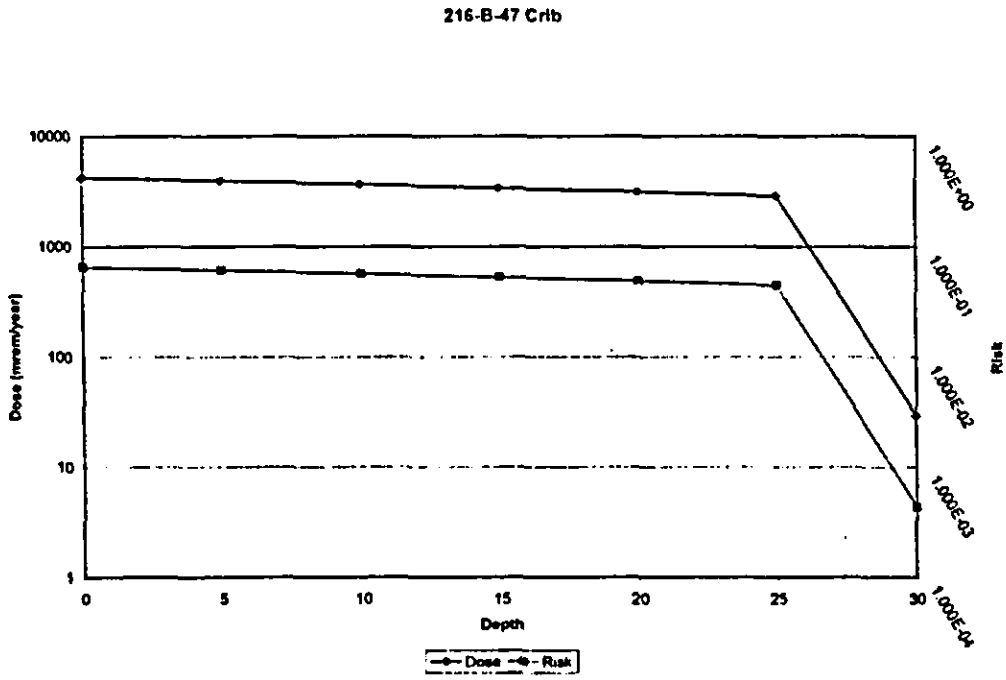


Figure E-9. 216-B-48 Crib Dose and Risk versus Depth.

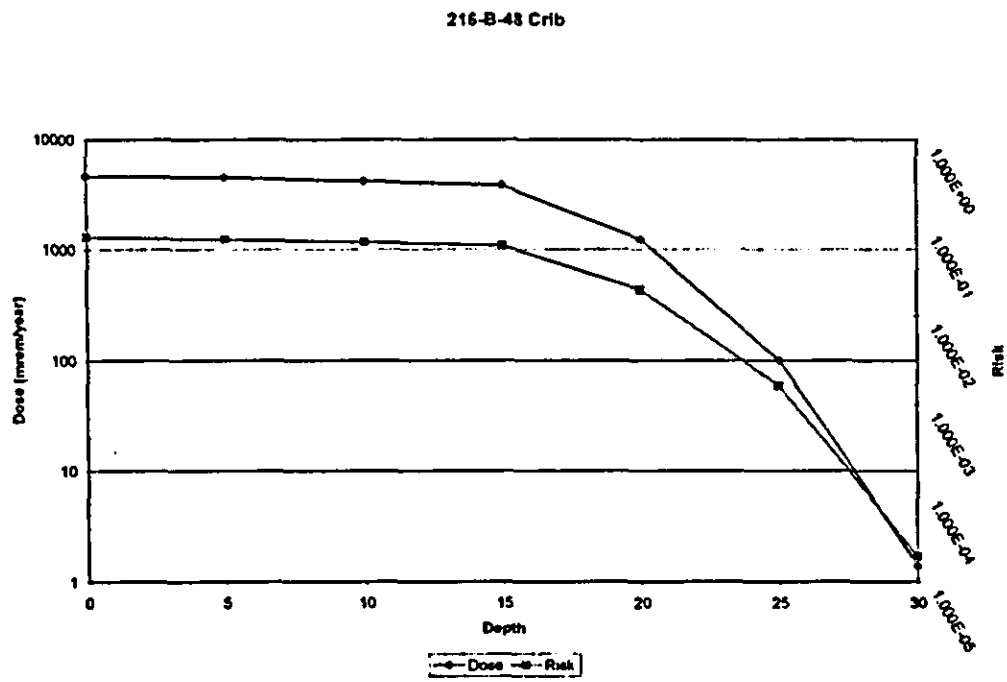


Figure E-10. 216-B-49 Crib Dose and Risk versus Depth.

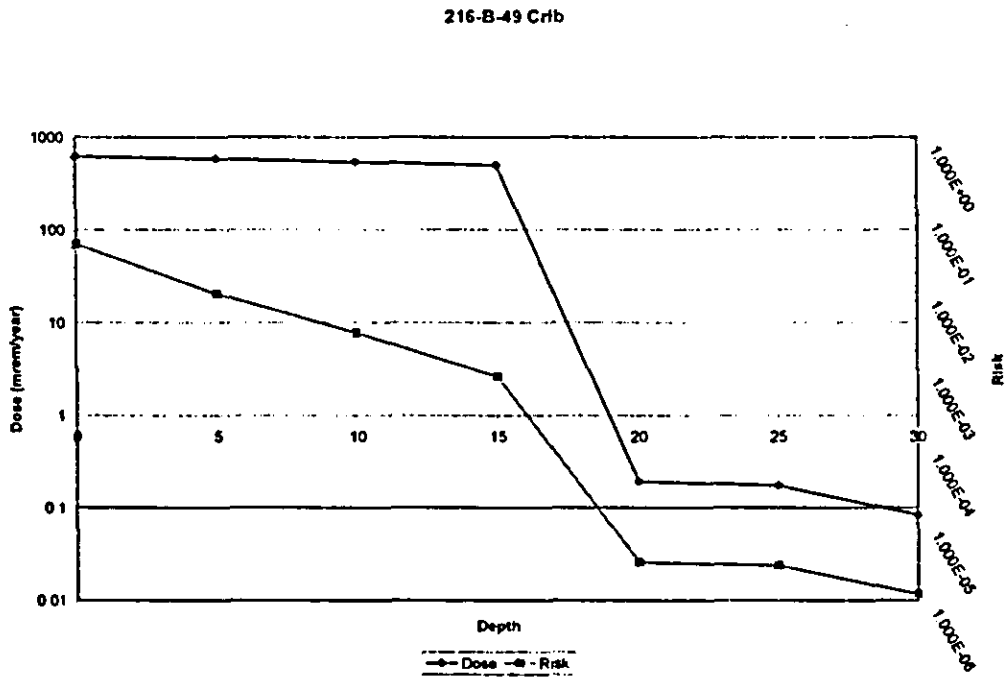


Figure E-11. 216-B-26 Trench Dose and Risk versus Depth.

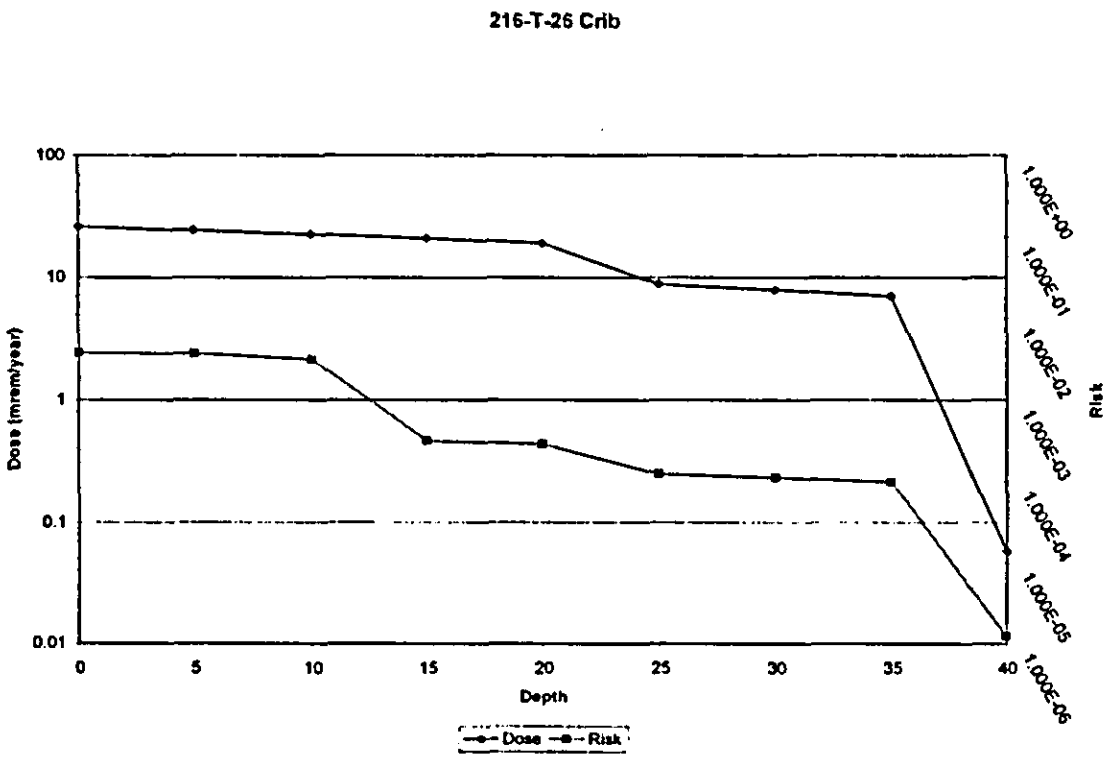


Figure E-12. 216-B-7A Crib Dose and Risk versus Depth.

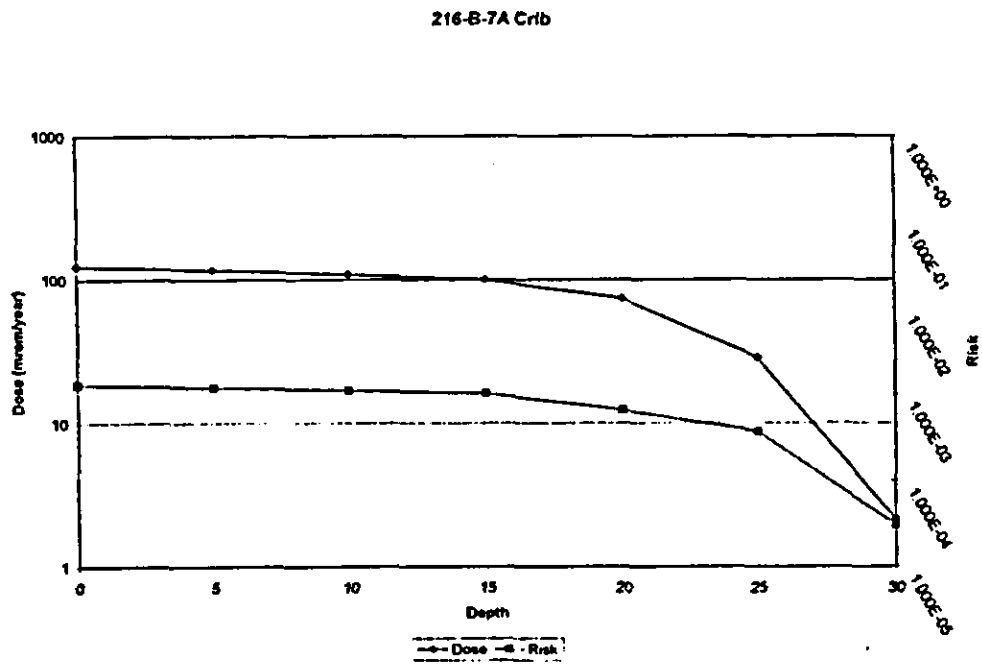


Figure E-13. 216-B-38 Trench Dose and Risk versus Depth.

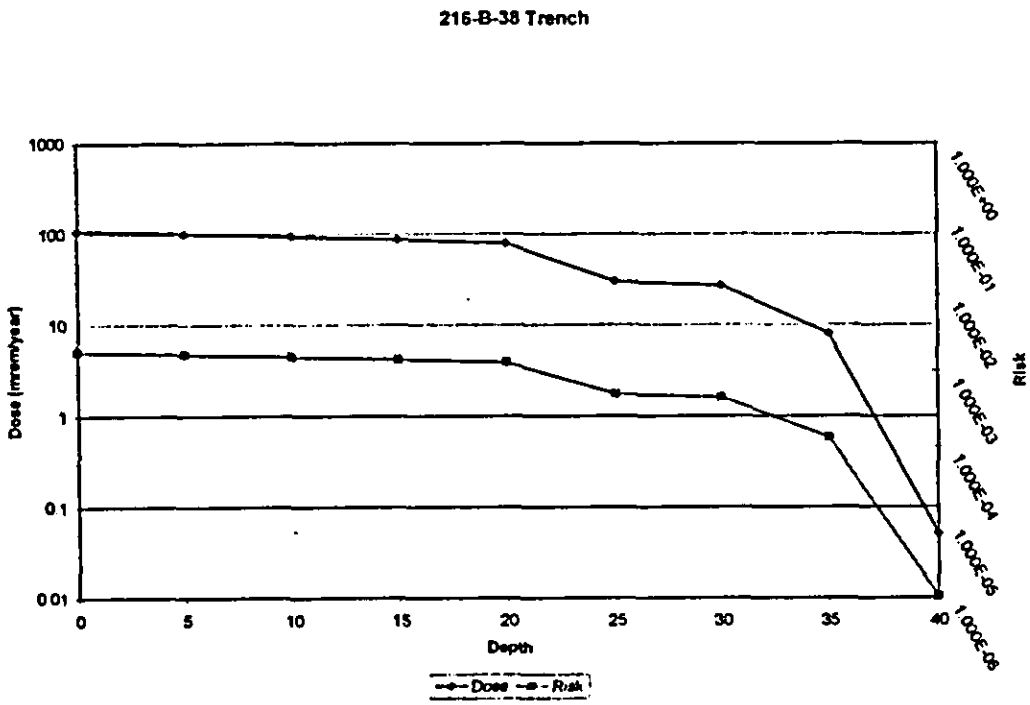


Figure E-14. 216-B-57 Crib Dose and Risk versus Depth.

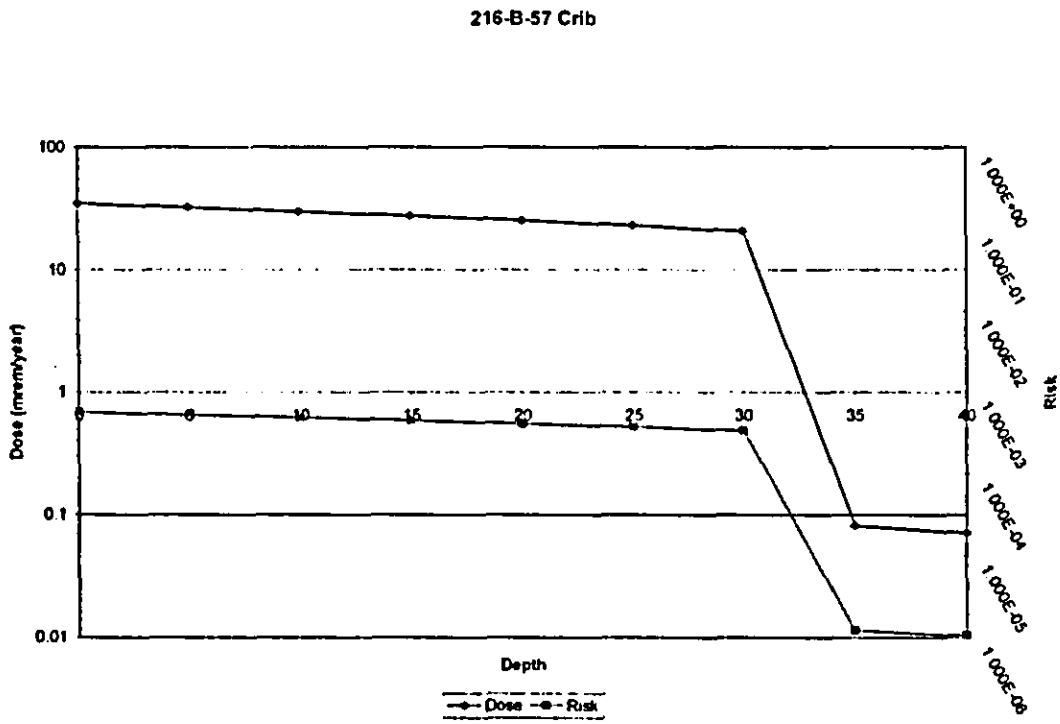


Figure E-15. 216-B-50 Crib Dose and Risk versus Depth.

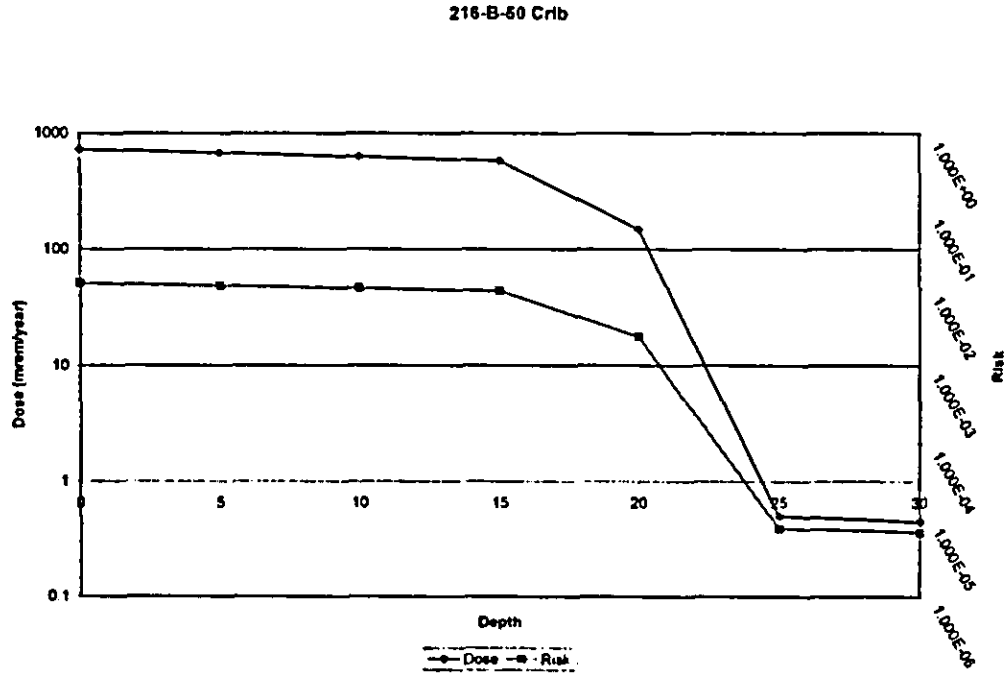


Figure E-16. Reduction in Intruder Dose with Excavation Depth.

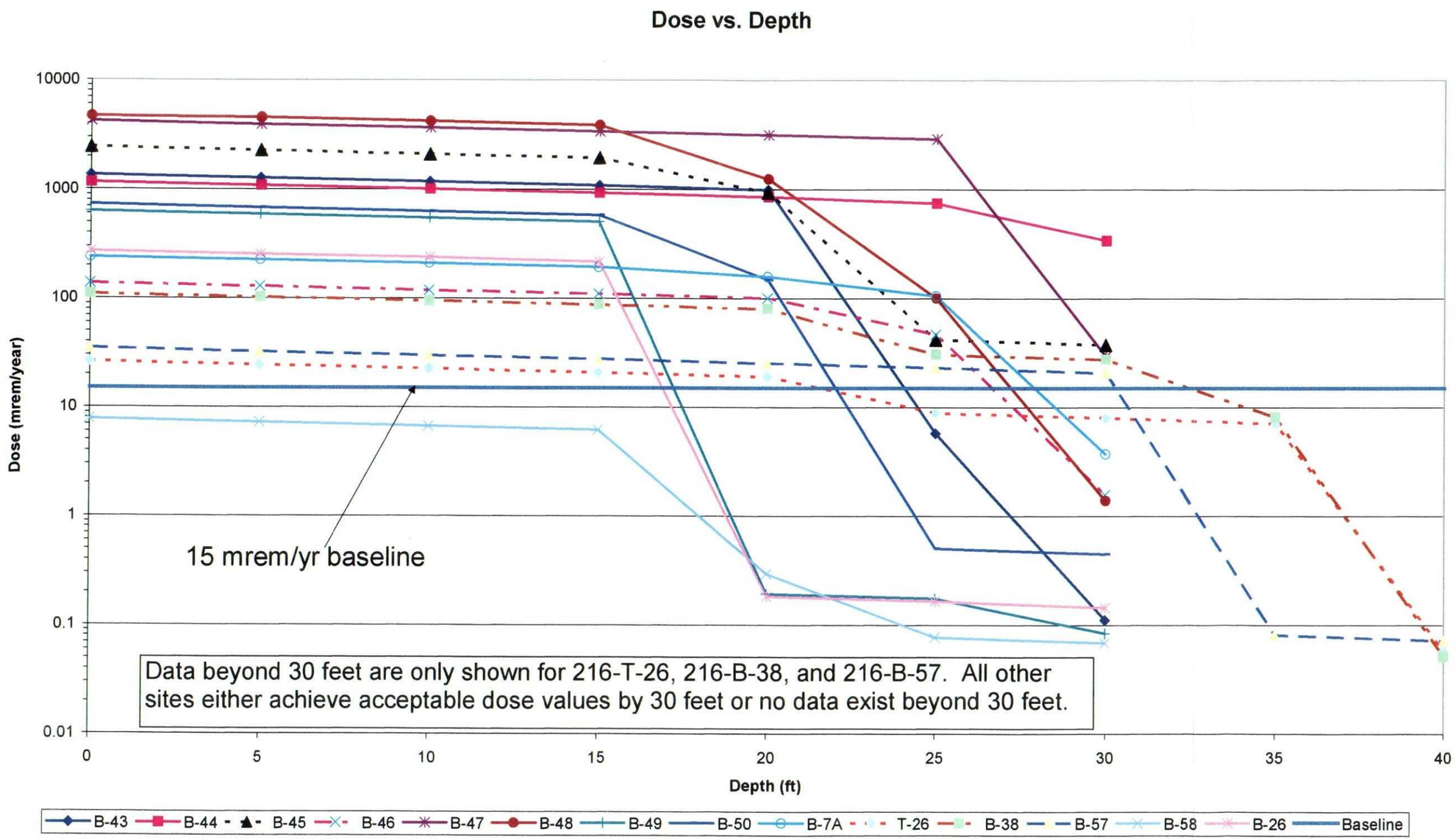


Figure E-17. Reduction in Intruder Risk with Excavation. Depth.

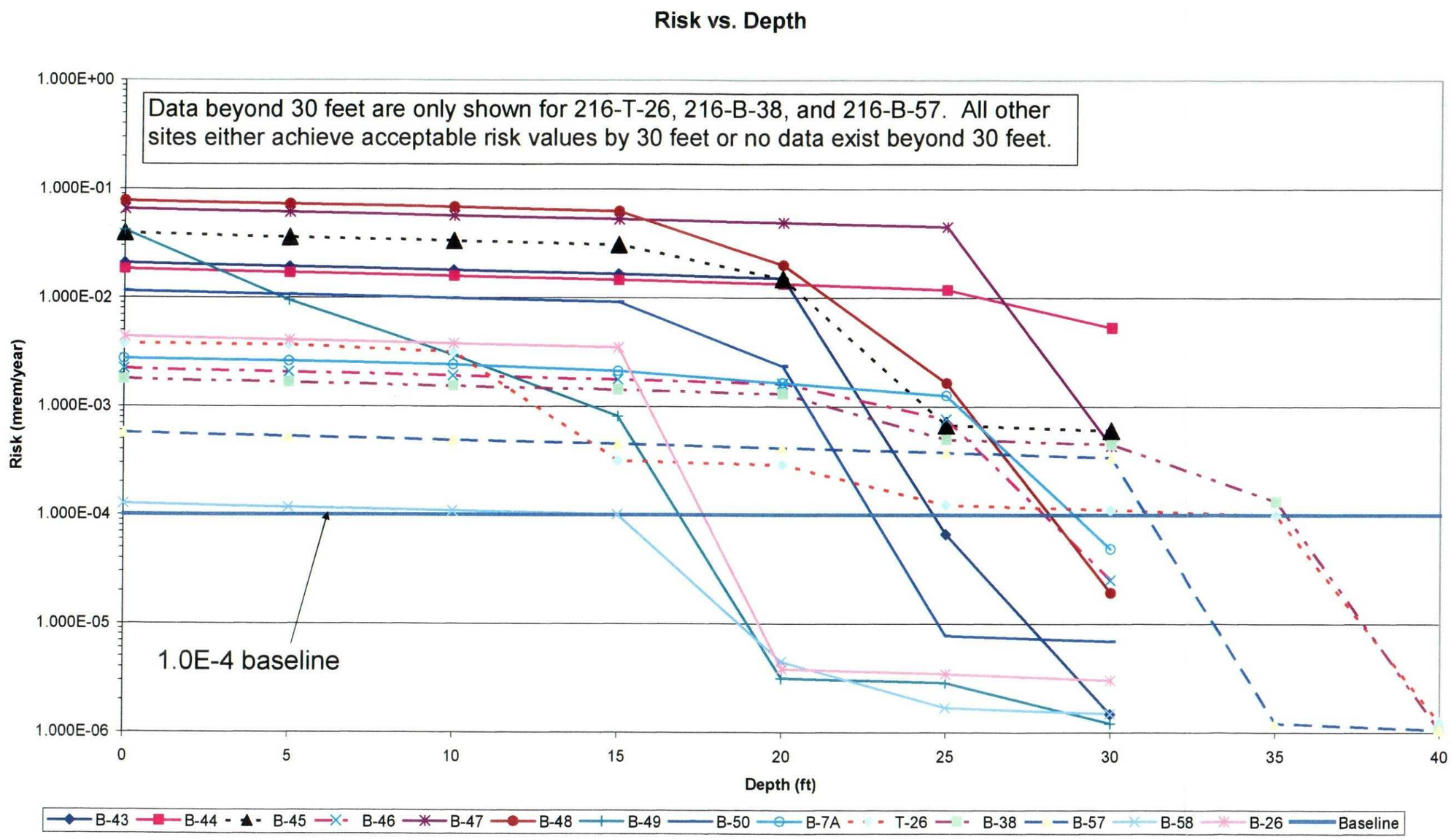


Table E-1. Concentrations at 5-Foot Depth.

	Summary of 150 year decay Intruder Scenario Soil Concentrations for RESRAD input @ 5'													
Constituent Name	216-B-46	216-T-26	216-B-58	216-B-43	216-B-44	216-B-45	216-B-47	216-B-48	216-B-49	216-B-26	216-B-7A	216-B-38	216-B-57	216-B-50
Americium-241	-	1.36E+00	2.47E+00	-	-	-	-	-	-	1.26E-03	3.42E+01	2.63E-01	-	-
Cesium-134	-	-	3.15E-26	9.30E-28	-	-	-	-	-	4.20E-26	-	-	-	-
Cesium-137	6.73E+01	1.17E+01	3.56E+00	6.34E+02	5.36E+02	1.18E+03	2.04E+03	2.40E+03	3.05E+02	1.29E+02	3.73E+01	5.51E+01	1.76E+01	3.68E+02
Cobalt-60	9.57E-12	1.55E-12	2.09E-10	8.73E-12	2.25E-10	4.91E-12	-	2.77E-10	1.69E-11	1.47E-12	-	1.18E-12	-	1.21E-10
Europium-154	-	3.49E-06	4.57E-07	-	-	-	-	-	-	-	1.13E-05	-	-	-
Europium-155	-	5.12E-10	3.61E-13	-	-	-	-	-	-	6.01E-13	-	-	-	-
Plutonium-238	1.47E-02	8.22E-02	7.24E-02	1.83E-02	1.18E-01	2.43E-01	4.63E-01	1.39E-01	2.29E-02	9.34E-05	3.27E-01	1.83E-02	1.40E-04	1.07E-02
Plutonium-239/ 240	1.71E+00	4.75E+01	2.33E+00	3.04E+00	4.70E+00	1.77E+01	4.71E+01	9.02E+00	4.42E+00	1.47E+00	1.15E+03	1.19E+00	1.50E-04	1.87E+00
Plutonium-239c	-	-	-	-	7.60E-05	-	-	-	-	-	-	-	1.52E-04	-
Potassium-40	1.12E-01	1.39E-01	1.40E-01	1.33E-01	1.02E-01	1.19E-01	1.18E-01	1.26E-01	1.26E-01	1.69E-01	4.37E+00	2.08E+00	1.31E-01	1.12E-01
Radium-226	1.75E-02	6.37E-03	4.29E-03	9.09E-03	9.16E-03	1.29E-02	1.04E-02	1.11E-02	2.65E-02	6.44E-03	4.88E-03	4.11E-03	7.23E-03	8.08E-03
Radium-228	-	1.59E-10	4.73E-10	-	-	-	-	-	-	1.74E-10	1.15E-10	2.77E-10	-	-
Strontium-90	4.92E+01	-	-	9.31E+02	9.16E+02	8.31E+02	2.14E+03	1.50E+03	2.91E+02	-	-	-	1.25E-02	7.92E+01
Technetium-99	9.16E-01	3.72E-02	-	1.60E+00	1.53E+00	1.53E+00	4.09E-01	1.53E+00	1.22E+00	7.02E-01	2.51E-01	1.47E-02	4.58E-01	1.22E+00
Thorium-228	1.95E-28	2.09E-26	1.35E-25	2.25E-28	1.97E-28	1.97E-28	2.74E-28	2.46E-28	2.68E-28	5.88E-26	2.50E-26	3.59E-26	1.72E-26	1.69E-28
Thorium-230	-	5.64E-03	8.01E-03	-	-	-	-	-	-	5.57E-03	7.14E-03	6.82E-03	-	-
Thorium-232	-	9.62E-03	3.37E-02	-	-	-	-	-	-	2.32E-02	6.57E-03	7.54E-03	-	-
Tritium	4.47E-05	4.40E-03	1.48E-04	1.66E-04	3.02E-05	7.29E-05	4.98E-05	3.74E-05	3.22E-05	7.12E-05	2.79E-06	4.82E-05	2.66E-05	2.67E-05
Uranium-233/234	-	1.38E-01	4.43E-03	-	-	-	-	-	-	5.95E-02	8.93E-01	6.87E-02	-	-
Uranium-235	-	1.98E-03	1.53E-04	-	-	-	-	-	-	3.66E-03	5.33E-04	-	-	-
Uranium-238	-	1.61E-01	1.98E-03	-	-	-	-	-	-	6.26E-02	8.25E-01	4.85E-02	-	-

Table E-2. Concentrations at 10-Foot Depth.

	Summary of 150 year decay Intruder Scenario Soil Concentrations for RESRAD input @ 10'													
Constituent Name	216-B-46	216-T-26	216-B-58	216-B-43	216-B-44	216-B-45	216-B-47	216-B-48	216-B-49	216-B-26	216-B-7A	216-B-38	216-B-57	216-B-50
Americium-241	-	1.26E+00	2.29E+00	-	-	-	-	-	-	1.17E-03	3.17E+01	2.45E-01	-	-
Cesium-134	-	-	2.92E-26	8.63E-28	-	-	-	-	-	3.89E-26	-	-	-	-
Cesium-137	6.24E+01	1.08E+01	3.30E+00	5.88E+02	4.98E+02	1.09E+03	1.90E+03	2.23E+03	2.83E+02	1.20E+02	3.46E+01	5.11E+01	1.63E+01	3.42E+02
Cobalt-60	8.88E-12	1.44E-12	1.94E-10	8.10E-12	2.08E-10	4.56E-12	-	2.57E-10	1.56E-11	1.36E-12	-	1.09E-12	-	1.12E-10
Europium-154	-	3.24E-06	4.24E-07	-	-	-	-	-	-	-	1.05E-05	-	-	-
Europium-155	-	4.75E-10	3.35E-13	-	-	-	-	-	-	5.58E-13	-	-	-	-
Plutonium-238	1.37E-02	7.63E-02	6.72E-02	1.70E-02	1.10E-01	2.25E-01	4.32E-01	1.29E-01	2.13E-02	8.67E-05	3.04E-01	1.70E-02	1.08E-04	9.97E-03
Plutonium-239/ 240	1.58E+00	4.41E+01	2.16E+00	2.82E+00	4.37E+00	1.64E+01	4.40E+01	8.37E+00	4.10E+00	1.36E+00	1.07E+03	1.11E+00	1.39E-04	1.74E+00
Plutonium-239c	-	-	-	-	-	-	-	-	-	-	-	-	7.05E-05	-
Potassium-40	1.04E-01	1.29E-01	1.30E-01	1.23E-01	9.49E-02	1.11E-01	9.85E-02	1.17E-01	1.17E-01	1.57E-01	4.05E+00	1.93E+00	1.22E-01	1.04E-01
Radium-226	1.62E-02	5.91E-03	3.98E-03	8.50E-03	8.23E-03	1.20E-02	4.08E-03	8.57E-03	2.46E-02	5.98E-03	4.53E-03	3.82E-03	6.71E-03	7.50E-03
Radium-228	-	1.47E-10	4.39E-10	-	-	-	-	-	-	1.61E-10	1.06E-10	2.57E-10	-	-
Strontium-90	4.56E+01	-	-	8.64E+02	8.50E+02	7.71E+02	1.99E+03	1.39E+03	2.70E+02	-	-	-	1.16E-02	7.35E+01
Technetium-99	8.50E-01	3.45E-02	-	1.49E+00	1.42E+00	1.42E+00	3.82E-01	1.42E+00	1.13E+00	6.52E-01	2.33E-01	1.37E-02	4.25E-01	1.13E+00
Thorium-228	1.23E-28	1.94E-26	1.25E-25	2.08E-28	1.83E-28	1.83E-28	1.55E-28	2.19E-28	2.48E-28	5.46E-26	2.32E-26	3.34E-26	1.60E-26	1.57E-28
Thorium-230	-	5.24E-03	7.43E-03	-	-	-	-	-	-	5.17E-03	6.62E-03	6.33E-03	-	-
Thorium-232	-	8.93E-03	3.13E-02	-	-	-	-	-	-	2.15E-02	6.09E-03	7.00E-03	-	-
Tritium	4.15E-05	4.08E-03	1.38E-04	1.54E-04	2.80E-05	6.77E-05	4.65E-05	3.47E-05	2.99E-05	6.61E-05	2.59E-06	4.47E-05	2.47E-05	2.48E-05
Uranium-233/234	-	1.28E-01	4.11E-03	-	-	-	-	-	-	5.52E-02	8.28E-01	6.37E-02	-	-
Uranium-235	-	1.84E-03	1.42E-04	-	-	-	-	-	-	3.40E-03	4.95E-04	-	-	-
Uranium-238	-	1.50E-01	1.84E-03	-	-	-	-	-	-	5.81E-02	7.65E-01	4.50E-02	-	-

Table E-3. Concentrations at 15-Foot Depth.

	Summary of 150 year decay Intruder Scenario Soil Concentrations for RESRAD input @ 15'													
Constituent Name	216-B-46	216-T-26	216-B-58	216-B-43	216-B-44	216-B-45	216-B-47	216-B-48	216-B-49	216-B-26	216-B-7A	216-B-38	216-B-57	216-B-50
Americium-241	-	1.17E+00	2.12E+00	-	-	-	-	-	-	1.08E-03	2.92E+01	2.26E-01	-	-
Cesium-134	-	-	2.69E-26	7.97E-28	-	-	-	-	-	3.59E-26	-	-	-	-
Cesium-137	5.76E+01	1.00E+01	3.05E+00	5.43E+02	4.59E+02	1.01E+03	1.76E+03	2.05E+03	2.61E+02	1.10E+02	3.19E+01	4.72E+01	1.51E+01	3.15E+02
Cobalt-60	8.19E-12	1.33E-12	1.79E-10	7.47E-12	1.92E-10	4.20E-12	-	2.37E-10	1.44E-11	1.26E-12	-	1.01E-12	-	1.03E-10
Europium-154	-	2.99E-06	3.91E-07	-	-	-	-	-	-	-	9.66E-06	-	-	-
Europium-155	-	4.38E-10	3.09E-13	-	-	-	-	-	-	5.15E-13	-	-	-	-
Plutonium-238	1.26E-02	7.04E-02	6.20E-02	1.56E-02	1.01E-01	2.08E-01	4.01E-01	1.19E-01	1.96E-02	8.00E-05	2.80E-01	1.57E-02	1.00E-04	9.20E-03
Plutonium-239/ 240	1.46E+00	4.07E+01	1.99E+00	2.61E+00	4.03E+00	1.51E+01	4.08E+01	7.72E+00	3.78E+00	1.25E+00	9.84E+02	1.02E+00	1.29E-04	1.60E+00
Plutonium-239c	-	-	-	-	-	-	-	-	-	-	-	-	6.51E-05	-
Potassium-40	9.61E-02	1.19E-01	1.20E-01	1.14E-01	-	1.02E-01	8.01E-02	1.08E-01	1.08E-01	1.45E-01	3.74E+00	1.78E+00	1.12E-01	9.61E-02
Radium-226	1.49E-02	5.45E-03	3.68E-03	7.78E-03	-	1.11E-02	4.45E-03	-	2.27E-02	5.51E-03	4.18E-03	3.52E-03	6.19E-03	3.92E-03
Radium-228	-	1.36E-10	4.05E-10	-	-	-	-	-	-	1.49E-10	9.81E-11	2.38E-10	-	-
Strontium-90	4.21E+01	-	-	7.97E+02	7.85E+02	7.11E+02	1.85E+03	1.28E+03	2.49E+02	-	-	-	1.07E-02	6.78E+01
Technetium-99	7.84E-01	3.18E-02	-	1.37E+00	1.31E+00	1.31E+00	3.54E-01	1.31E+00	1.05E+00	6.01E-01	2.15E-01	1.26E-02	3.92E-01	1.05E+00
Thorium-228	1.14E-28	1.79E-26	1.15E-25	1.92E-28	-	1.69E-28	1.40E-28	2.02E-28	2.29E-28	5.03E-26	2.14E-26	3.08E-26	1.47E-26	1.26E-28
Thorium-230	-	4.83E-03	6.85E-03	-	-	-	-	-	-	4.77E-03	6.11E-03	5.84E-03	-	-
Thorium-232	-	8.24E-03	2.89E-02	-	-	-	-	-	-	1.99E-02	5.62E-03	6.46E-03	-	-
Tritium	3.82E-05	3.77E-03	1.27E-04	1.42E-04	2.59E-05	6.24E-05	4.32E-05	3.20E-05	2.76E-05	6.10E-05	2.39E-06	4.12E-05	2.27E-05	2.29E-05
Uranium-233/234	-	1.18E-01	3.79E-03	-	-	-	-	-	-	5.10E-02	7.64E-01	5.88E-02	-	-
Uranium-235	-	1.70E-03	1.31E-04	-	-	-	-	-	-	3.14E-03	4.56E-04	-	-	-
Uranium-238	-	1.38E-01	1.70E-03	-	-	-	-	-	-	5.36E-02	7.06E-01	4.15E-02	-	-

Table E-4. Concentrations at 20-Foot Depth.

	Summary of 150 year decay Intruder Scenario Soil Concentrations for RESRAD input @ 20'													
Constituent Name	216-B-46	216-T-26	216-B-58	216-B-43	216-B-44	216-B-45	216-B-47	216-B-48	216-B-49	216-B-26	216-B-7A	216-B-38	216-B-57	216-B-50
Americium-241	-	1.07E+00	-	-	-	-	-	-	-	9.89E-04	2.68E+01	1.13E-01	-	-
Cesium-134	-	-	-	7.30E-28	-	-	-	-	-	3.29E-26	-	-	-	-
Cesium-137	5.28E+01	9.16E+00	6.88E-05	4.97E+02	4.21E+02	4.88E+02	1.63E+03	6.44E+02	7.23E-03	2.16E-03	2.93E+01	4.32E+01	1.26E+01	8.13E+01
Cobalt-60	7.51E-12	1.22E-12	1.64E-10	6.85E-12	1.76E-10	9.33E-12	-	2.17E-10	1.32E-11	1.15E-12	-	9.22E-13	-	9.48E-11
Europium-154	-	2.74E-06	3.58E-07	-	-	-	-	-	-	-	8.85E-06	-	-	-
Europium-155	-	4.01E-10	2.83E-13	-	-	-	-	-	-	4.72E-13	-	-	-	-
Plutonium-238	1.16E-02	6.45E-02	5.68E-02	1.43E-02	9.27E-02	8.83E-02	3.70E-01	1.09E-01	2.02E-04	7.33E-05	2.57E-01	6.38E-03	8.33E-05	4.40E-04
Plutonium-239/ 240	1.34E+00	3.73E+01	1.83E+00	2.39E+00	3.69E+00	7.78E+00	3.76E+01	7.07E+00	-	7.66E-04	9.02E+02	9.37E-01	1.07E-04	-
Plutonium-239c	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium-40	8.80E-02	1.09E-01	1.10E-01	1.04E-01	-	9.34E-02	7.13E-02	9.88E-02	9.88E-02	1.33E-01	3.43E+00	1.63E+00	9.36E-02	8.80E-02
Radium-226	1.37E-02	4.99E-03	3.37E-03	7.13E-03	-	1.02E-02	-	-	2.08E-02	5.05E-03	3.83E-03	3.23E-03	5.15E-03	-
Radium-228	-	1.24E-10	3.71E-10	-	-	-	-	-	-	1.36E-10	8.99E-11	2.18E-10	-	-
Strontium-90	3.86E+01	-	-	7.31E+02	7.19E+02	3.27E+02	1.71E+03	6.37E+02	1.97E-03	-	-	-	1.99E-04	8.43E-01
Technetium-99	7.18E-01	2.92E-02	-	1.26E+00	1.20E+00	1.20E+00	3.27E-01	5.39E-01	9.58E-01	5.51E-01	1.97E-01	1.16E-02	3.26E-01	9.58E-01
Thorium-228	1.04E-28	1.64E-26	1.06E-25	1.76E-28	-	1.55E-28	-	1.85E-28	2.10E-28	4.61E-26	1.96E-26	2.82E-26	1.23E-26	1.15E-28
Thorium-230	-	4.43E-03	6.28E-03	-	-	-	-	-	-	4.37E-03	5.60E-03	5.35E-03	-	-
Thorium-232	-	7.55E-03	2.65E-02	-	-	-	-	-	-	1.82E-02	5.15E-03	5.92E-03	-	-
Tritium	3.50E-05	3.45E-03	1.16E-04	1.30E-04	2.37E-05	5.72E-05	3.98E-05	2.93E-05	2.53E-05	5.59E-05	2.19E-06	3.78E-05	1.89E-05	-
Uranium-233/234	-	1.08E-01	3.47E-03	-	-	-	-	-	-	4.67E-02	7.00E-01	5.39E-02	-	-
Uranium-235	-	1.56E-03	1.20E-04	-	-	-	-	-	-	2.87E-03	4.18E-04	-	-	-
Uranium-238	-	1.26E-01	1.56E-03	-	-	-	-	-	-	4.91E-02	6.47E-01	3.80E-02	-	-

Table E-5. Concentrations at 25-Foot Depth.

	Summary of 150 year decay Intruder Scenario Soil Concentrations for RESRAD input @ 25'													
Constituent Name	216-B-46	216-T-26	216-B-58	216-B-43	216-B-44	216-B-45	216-B-47	216-B-48	216-B-49	216-B-26	216-B-7A	216-B-38	216-B-57	216-B-50
Americium-241	-	9.71E-01	-	-	-	-	-	-	-	8.98E-04	3.29E+00	2.87E-02	-	-
Cesium-134	-	-	-	6.63E-28	-	-	-	-	-	2.99E-26	-	-	-	-
Cesium-137	2.55E+01	3.69E+00	6.25E-05	5.19E-01	3.82E+02	2.21E+01	1.49E+03	5.46E+01	6.57E-03	1.96E-03	1.17E+01	1.66E+01	1.26E+01	2.48E-01
Cobalt-60	2.14E-12	1.11E-12	-	6.22E-12	1.60E-10	8.48E-12	-	2.56E-13	1.20E-11	1.05E-12	-	8.38E-13	-	2.42E-13
Europium-154	-	2.49E-06	-	-	-	-	-	-	-	-	-	-	-	-
Europium-155	-	3.65E-10	2.57E-13	-	-	-	-	-	-	4.29E-13	-	-	-	-
Plutonium-238	1.81E-04	5.86E-02	-	1.51E-05	5.19E-02	7.03E-03	3.39E-01	5.03E-02	1.83E-04	6.66E-05	2.33E-01	5.79E-03	8.33E-05	4.00E-04
Plutonium-239/ 240	1.89E-02	3.38E+01	1.18E-03	1.55E-03	2.31E+00	5.05E-01	3.45E+01	3.59E+00	-	6.96E-04	1.38E+02	2.49E-02	1.07E-04	-
Plutonium-239c	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium-40	8.00E-02	9.90E-02	8.43E-02	9.47E-02	-	8.49E-02	-	8.98E-02	8.98E-02	1.21E-01	3.11E+00	9.14E-02	9.36E-02	8.00E-02
Radium-226	1.24E-02	4.54E-03	3.06E-03	6.48E-03	-	9.23E-03	-	-	1.89E-02	4.59E-03	3.48E-03	2.93E-03	5.15E-03	-
Radium-228	-	1.13E-10	6.87E-11	-	-	-	-	-	-	1.24E-10	8.17E-11	1.98E-10	-	-
Strontium-90	7.10E-01	-	-	4.50E+01	3.81E+02	9.86E+00	1.56E+03	7.35E+00	1.79E-03	-	-	-	1.99E-04	4.46E-02
Technetium-99	6.53E-01	2.65E-02	-	1.14E+00	1.09E+00	1.31E-02	2.99E-01	4.89E-01	8.70E-01	5.00E-01	8.48E-03	1.05E-02	3.26E-01	8.70E-01
Thorium-228	9.47E-29	1.49E-26	1.42E-26	1.60E-28	-	1.41E-28	-	1.68E-28	1.91E-28	4.19E-26	1.78E-26	2.56E-26	1.23E-26	1.05E-28
Thorium-230	-	4.02E-03	5.71E-03	-	-	-	-	-	-	3.97E-03	5.09E-03	4.86E-03	-	-
Thorium-232	-	6.86E-03	6.64E-03	-	-	-	-	-	-	1.65E-02	4.68E-03	5.38E-03	-	-
Tritium	3.18E-05	3.14E-03	1.06E-04	1.18E-04	2.14E-05	5.20E-05	1.01E-05	2.66E-05	-	5.08E-05	1.99E-06	3.43E-05	1.89E-05	-
Uranium-233/234	-	9.84E-02	3.15E-03	-	-	-	-	-	-	4.08E-02	6.36E-01	2.81E-02	-	-
Uranium-235	-	-	1.09E-04	-	-	-	-	-	-	2.39E-03	3.80E-04	-	-	-
Uranium-238	-	1.15E-01	9.79E-04	-	-	-	-	-	-	4.14E-02	5.88E-01	3.46E-02	-	-

Table E-6. Concentrations at 30-Foot Depth.

	Summary of 150 year decay Intruder Scenario Soil Concentrations for RESRAD input @ 30'													
Constituent Name	216-B-46	216-T-26	216-B-58	216-B-43	216-B-44	216-B-45	216-B-47	216-B-48	216-B-49	216-B-26	216-B-7A	216-B-38	216-B-57	216-B-50
Americium-241	-	8.74E-01	-	-	-	-	-	-	-	1.54E-04	8.39E-02	2.59E-02	-	-
Cesium-134	-	-	-	5.96E-28	-	-	-	-	-	2.69E-26	-	-	-	-
Cesium-137	7.61E-01	3.31E+00	5.63E-05	8.30E-03	1.64E+02	1.98E+01	1.30E+01	3.59E-01	5.91E-03	6.88E-05	9.67E-01	1.50E+01	1.13E+01	2.23E-01
Cobalt-60	1.92E-12	9.96E-13	-	5.60E-12	1.44E-10	7.63E-12	-	2.30E-13	1.08E-11	9.42E-13	-	7.53E-13	-	-
Europium-154	-	2.24E-06	-	-	-	-	-	-	-	-	-	-	-	-
Europium-155	-	3.28E-10	2.31E-13	-	-	-	-	-	-	3.85E-13	-	-	-	-
Plutonium-238	1.63E-04	5.27E-02	-	1.36E-05	4.67E-02	6.32E-03	4.21E-02	3.55E-03	-	5.99E-05	-	-	7.49E-05	3.59E-04
Plutonium-239/ 240	1.70E-02	3.04E+01	1.45E-04	4.82E-04	2.08E+00	4.54E-01	3.68E+00	2.64E-01	-	1.45E-04	6.55E+00	2.24E-02	9.64E-05	-
Plutonium-239c	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium-40	7.19E-02	8.91E-02	7.59E-02	8.52E-02	-	7.64E-02	-	8.08E-02	8.08E-02	1.09E-01	8.12E-02	8.22E-02	8.42E-02	6.61E-02
Radium-226	1.12E-02	4.08E-03	2.75E-03	5.82E-03	-	8.30E-03	-	-	4.63E-03	4.13E-03	3.13E-03	2.64E-03	4.59E-03	-
Radium-228	-	1.02E-10	6.18E-11	-	-	-	-	-	-	1.11E-10	7.35E-11	1.78E-10	-	-
Strontium-90	6.39E-01	-	-	3.34E-04	3.43E+02	8.87E+00	5.28E+01	6.62E+00	3.46E-05	-	-	-	1.79E-04	4.01E-02
Technetium-99	5.87E-01	2.38E-02	-	1.03E+00	9.78E-01	1.17E-02	-	-	7.83E-01	4.50E-01	-	9.44E-03	2.94E-01	7.83E-01
Thorium-228	8.52E-29	1.34E-26	1.28E-26	1.44E-28	-	1.26E-28	-	1.52E-28	1.72E-28	3.77E-26	1.60E-26	2.30E-26	9.64E-27	9.23E-29
Thorium-230	-	3.62E-03	3.28E-03	-	-	-	-	-	-	3.57E-03	4.58E-03	4.37E-03	-	-
Thorium-232	-	6.17E-03	5.53E-03	-	-	-	-	-	-	1.49E-02	4.21E-03	4.84E-03	-	-
Tritium	2.86E-05	2.82E-03	9.52E-05	1.06E-04	1.93E-05	2.31E-05	8.14E-06	2.40E-05	-	4.57E-05	1.79E-06	3.09E-05	1.70E-05	-
Uranium-233/234	-	8.85E-02	9.29E-04	-	-	-	-	-	-	2.10E-03	5.72E-01	2.52E-02	-	-
Uranium-235	-	-	4.89E-05	-	-	-	-	-	-	6.36E-04	3.42E-04	-	-	-
Uranium-238	-	1.03E-01	8.81E-02	-	-	-	-	-	-	1.18E-02	5.29E-01	3.11E-02	-	-

Table E-7. Summary of 150-Year Decay Intruder Scenario Soil Concentrations for RESRAD Input at 35 Feet.

	Summary of 150 year decay Intruder Scenario Soil Concentrations for RESRAD input @ 35'		
Constituent Name	216-T-26	216-B-38	216-B-57
Americium-241	6.79E-01	4.68E-03	-
Cesium-134	-	-	-
Cesium-137	2.94E+00	4.39E+00	9.50E-03
Cobalt-60	8.84E-13	6.69E-13	-
Europium-154	1.99E-06	-	-
Europium-155	2.91E-10	-	-
Plutonium-238	4.68E-02	8.74E-04	-
Plutonium-239/ 240	2.71E+01	3.78E-03	-
Plutonium-239c	-	-	-
Potassium-40	5.48E-02	1.49E-01	7.48E-02
Radium-226	3.63E-03	2.34E-03	4.07E-03
Radium-228	9.03E-11	1.58E-10	-
Strontium-90	5.21E+00	-	1.59E-05
Technetium-99	2.12E-02	8.39E-03	3.00E-03
Thorium-228	1.19E-26	2.05E-26	8.57E-27
Thorium-230	1.30E-03	3.88E-03	-
Thorium-232	5.48E-03	4.30E-03	-
Tritium	2.51E-03	2.74E-05	-
Uranium-233/234	7.87E-02	1.19E-02	-
Uranium-235	-	-	-
Uranium-238	9.18E-02	2.76E-02	-

Table E-8. Summary of 150-Year Decay Intruder Scenario Soil Concentrations for RESRAD Input at 40 Feet.

	Summary of 150 year decay Intruder Scenario Soil Concentrations for RESRAD input @ 40'		
Constituent Name	216-T-26	216-B-38	216-B-57
Americium-241	-	7.03E-04	-
Cesium-134	-	-	-
Cesium-137	-	2.00E-05	8.30E-03
Cobalt-60	7.73E-13	5.85E-13	-
Europium-154	-	-	-
Europium-155	-	-	-
Plutonium-238	-	-	-
Plutonium-239/ 240	-	-	-
Plutonium-239c	-	-	-
Potassium-40	4.79E-02	6.39E-02	6.54E-02
Radium-226	3.17E-03	2.05E-03	3.56E-03
Radium-228	7.90E-11	4.41E-11	-
Strontium-90	-	-	1.39E-05
Technetium-99	1.85E-02	7.34E-03	2.62E-03
Thorium-228	1.04E-26	1.79E-26	7.49E-27
Thorium-230	1.14E-03	3.40E-03	-
Thorium-232	4.79E-03	3.76E-03	-
Tritium	2.19E-03	2.40E-05	-
Uranium-233/234	1.24E-02	4.10E-03	-
Uranium-235	-	-	-
Uranium-238	5.44E-03	1.08E-02	-

Table E-9. Summary of Well and Garden Dimensions.

Parameter	RESRAD Value
Well Diameter (m)	0.3
Depth to Groundwater w/o cap (m)	75.0
Depth of Garden (m)	0.15
Surface Area of Garden (m^2)	200
Garden Volume (m^3)	30

Table E-10. Cesium-137 Dose and Risk.

Constituent	Current Concentration (pCi/g)	150 year ResRad Dose (mrem/yr)	150 year ResRad Risk
Cs-137	5	0.279	4.44E-06
	10	0.556	8.97E-06
	15	0.833	1.35E-05
	20	1.110	1.80E-05
	25	1.387	2.26E-05
	30	1.664	2.71E-05
	35	1.941	3.16E-05
	40	2.218	3.62E-05
	45	2.495	4.07E-05
	50	2.772	4.52E-05
	55	3.049	4.97E-05
	60	3.326	5.43E-05
	65	3.603	5.88E-05
	70	3.880	6.33E-05
	75	4.157	6.79E-05
	80	4.434	7.24E-05
	85	4.711	7.69E-05
	90	4.988	8.15E-05
	95	5.265	8.60E-05
	100	5.542	9.05E-05
	105	5.819	9.50E-05
	110	6.096	9.96E-05
	115	6.373	1.04E-04

Table E-11. Strontium-90 Dose and Risk.

Constituent	Current Concentration (pCi/g)	150 year ResRad Dose (mrem/yr)	150 year ResRad Risk
Sr-90	500	0.332	4.14E-06
	1000	0.659	8.22E-06
	1500	0.987	1.23E-05
	2000	1.314	1.64E-05
	2500	1.642	2.05E-05
	3000	1.969	2.45E-05
	3500	2.297	2.86E-05
	4000	2.624	3.27E-05
	4500	2.952	3.68E-05
	5000	3.279	4.09E-05
	5500	3.607	4.49E-05
	6000	3.934	4.90E-05
	6500	4.262	5.31E-05
	7000	4.589	5.72E-05
	7500	4.917	6.13E-05
	8000	5.244	6.53E-05
	8500	5.572	6.94E-05
	9000	5.899	7.35E-05
	9500	6.227	7.76E-05
	10000	6.554	8.17E-05
	10500	6.882	8.57E-05
	11000	7.209	8.98E-05
	11500	7.537	9.39E-05
	12000	7.865	9.80E-05
	12500	8.192	1.02E-04

Table E-12. Plutonium-239/240 Dose and Risk.

Constituent	Current Concentration (pCi/g)	150 year ResRad Dose (mrem/yr)	150 year ResRad Risk
Pu-239/240	25	0.777	2.16E-06
	50	1.609	4.45E-06
	75	2.379	6.59E-06
	100	3.149	8.73E-06
	125	3.919	1.09E-05
	150	4.689	1.30E-05
	175	5.459	1.52E-05
	200	6.229	1.73E-05
	225	6.999	1.94E-05
	250	7.769	2.16E-05
	275	8.539	2.37E-05
	300	9.309	2.59E-05
	325	10.080	2.80E-05
	350	10.850	3.01E-05
	375	11.650	3.24E-05
	400	12.420	3.45E-05
	425	13.190	3.66E-05
	450	13.970	3.88E-05
	475	14.730	4.09E-05
	500	15.540	4.31E-05

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