Appendix C

Leachate Generation Calculations for K_d-Screened Group

Appendix C Model Calculations	Elemental Formula	Kd (mL/g) or (L/kg)	Half-Life in years	Isotope Specific Activity (pCi/g)	mg/kg from non-rads	mg/kg from rads	Total Inventory (kg)	Initial Soil Water Concentration (mg/L)	Initial Soil Concentration (mg/kg)	Initial Contaminant Mass in Soil Water (mg)	Initial Contaminant Mass on Soil (mg)
INORGANICS											
Arsenic	As	3			5.687553917		3.3274E+03	1.798876814	5.396630443	170200587.2	3157220893
Astitine	At	1						0	0	0	0
Boron	B	5			184.5525771		1.0797E+05	35.75405018	178.7702509	3382866624	1.04587E+11
Cadmium	Cd	6			3.604582341		2.1088E+03	0.584995647	3.509973881	55349316.76	2053459652
Calcium	Ca	5			21208.90523		1.2408E+07	4108.87929	20544.39645	3.88761E+11	1.20192E+13
Chlorine	Cl	0			1.866365914		1.0919E+03	11.54036257	0	1091890490	0
Cobalt	Co	10			6.03405111		3.5301E+03	0.593801847	5.938018466	56182514.66	3473952156
Copper	Cu	20					1.75E+04	1.482509189	29.65018378	140267489.4	17346412859
Cyanide	CN	0					1.97E+02	2.081822108	0	196971433.7	0
Fluorine	F	0			3.866048315		2.2618E+03	23.90506541	0	2261775869	0
Krypton	Kr	0						0	0	0	0
Magnesium	Mg	5			4478.3411		2.6200E+06	867.6055081	4338.02754	82088426385	2.5379E+12
Molybdenum	Mo	10			10.17766832		5.9543E+03	1.001568951	10.01568951	94763366.95	5859534856
Nitrogen	N	0					No Inventory				
	NO3	0			3.926574218		2.2972E+03	24.27931725	0	2297185677	0
	NO2	0			0.008486856		4.9651E+00	0.05247706	0	4965112.835	0
Phosphorous	P	5			97.40075913		5.6983E+04	18.86980764	94.34903822	1785365355	55197545549
Potassium	K	15			1150.523211		6.7310E+05	75.88339758	1138.250964	7179701648	6.65917E+11
Radon	Rn	0						0	0	0	0
Selenium	Se	4			0.852194244		4.9856E+02	0.204769472	0.819077887	19374247.35	479189717.8
Strontium	Sr	12			18.20350034		1.0650E+04	1.496786043	17.96143251	141618292.8	10508077326
Sulfur	S	14					No Inventory				
	S(-2)	14			758.5103432		4.4376E+05	53.56058952	749.8482532	5067630932	4.38688E+11
	SO4	14			20.52707923		1.2009E+04	1.449475903	20.29266264	137142047.7	11871929927
Vanadium	V	6			21.49017738		1.2573E+04	3.487688455	20.92613073	329987366.8	12242531307
Xenon	Xe	0						0	0	0	0
Zinc	Zn	16			207.9658107		1.2167E+05	12.86779783	205.8847652	1217485672	1.2045E+11

Appendix C Model Calculations	Remaining ICDF Contaminant Mass (mg) (0 Yr)	Leachate Concentration (mg/L) (1 Yr)	Remaining ICDF Contaminant Mass (mg) (1 Yr)	Leachate Concentration (mg/L) (2 Yr)	Remaining ICDF Contaminant Mass (mg) (2 Yr)	Leachate Concentration (mg/L) (3 Yr)	Remaining ICDF Contaminant Mass (mg) (3 Yr)	Leachate Concentration (mg/L) (4 Yr)	Remaining ICDF Contaminant Mass (mg) (4 Yr)
INORGANICS									
Arsenic	3327421480	1.798876814	3326431428	1.798341571	3325441670	1.797806486	3324452207	1.79727156	3323463038
Astitine	0	0	0	0	0	0	0	0	0
Boron	1.0797E+11	35.75405018	1.0795E+11	35.74753383	1.0793E+11	35.74101866	1.07911E+11	35.73450468	1.07891E+11
Cadmium	2108808969	0.584995647	2108487003	0.584906332	2108165087	0.58481703	2107843220	0.584727743	2107521401
Calcium	1.2408E+13	4108.87929	1.24057E+13	4108.130426	1.24034E+13	4107.381699	1.24012E+13	4106.633108	1.23989E+13
Chlorine	1091890490	11.54036257	1085538991	11.47323258	1079224440	11.40649309	1072946620	11.34014182	1066705317
Cobalt	3530134671	0.593801847	3529807859	0.593746874	3529481077	0.593691906	3529154325	0.593636943	3528827604
Copper	17486680348	1.482509189	17485864416	1.482440015	17485048522	1.482370844	17484232666	1.482301676	17483416848
Cyanide	196971433.7	2.081822108	195825656.1	2.069712203	194686543.4	2.057672742	193554056.9	2.045703314	192428158.1
Fluorine	2261775869	23.90506541	2248619179	23.76601028	2235539020	23.62776402	2222534949	23.49032194	2209606522
Krypton	0	0	0	0	0	0	0	0	0
Magnesium	2.61999E+12	867.6055081	2.61951E+12	867.4473826	2.61903E+12	867.2892859	2.61856E+12	867.1312181	2.61808E+12
Molybdenum	5954298223	1.001568951	5953746987	1.001476228	5953195802	1.001383514	5952644668	1.001290808	5952093585
Nitrogen									
	2297185677	24.27931725	2283823009	24.1380851	2270538070	23.9976745	2257330410	23.85808066	2244199579
	4965112.835	0.05247706	4936230.904	0.052171802	4907516.979	0.05186832	4878970.082	0.051566603	4850589.242
Phosphorous	56982910903	18.86980764	56972525480	18.86636853	56962141950	18.86293003	56951760312	18.85949217	56941380566
Potassium	6.73097E+11	75.88339758	6.73055E+11	75.87868919	6.73014E+11	75.87398109	6.72972E+11	75.86927328	6.7293E+11
Radon	0	0	0	0	0	0	0	0	0
Selenium	498563965.2	0.204769472	498451265.7	0.204723184	498338591.7	0.204676907	498225943.2	0.20463064	498113320.1
Strontium	10649695619	1.496786043	10648871829	1.496670261	10648048103	1.496554489	10647224441	1.496438725	10646400842
Sulfur									
	4.43756E+11	53.56058952	4.43726E+11	53.55703154	4.43697E+11	53.55347379	4.43667E+11	53.54991628	4.43638E+11
	12009071975	1.449475903	12008274223	1.449379616	12007476525	1.449283335	12006678879	1.44918706	12005881286
Vanadium	12572518674	3.487688455	12570599146	3.487155967	12568679911	3.48662356	12566760970	3.486091235	12564842321
Xenon	0	0	0	0	0	0	0	0	0
Zinc	1.21667E+11	12.86779783	1.2166E+11	12.86704881	1.21653E+11	12.86629984	1.21646E+11	12.86555091	1.21639E+11

Appendix C Model Calculations	Leachate Concentration (mg/L) (5 Yr)	Remaining ICDF Contaminant Mass (mg) (5 Yr)	Leachate Concentration (mg/L) (6 Yr)	Remaining ICDF Contaminant Mass (mg) (6 Yr)	Leachate Concentration (mg/L) (7 Yr)	Remaining ICDF Contaminant Mass (mg) (7 Yr)	Leachate Concentration (mg/L) (8 Yr)	Remaining ICDF Contaminant Mass (mg) (8 Yr)
INORGANICS								
Arsenic	1.796736794	3322474164	1.796202187	3321485583	1.795667739	3320497297	1.79513345	3319509305
Astitine	0	0	0	0	0	0	0	0
Boron	35.72799188	1.07871E+11	35.72148028	1.07852E+11	35.71496986	1.07832E+11	35.70846062	1.07813E+11
Cadmium	0.584638468	2107199633	0.584549208	2106877913	0.584459961	2106556242	0.584370728	2106234620
Calcium	4105.884653	1.23967E+13	4105.136335	1.23944E+13	4104.388153	1.23921E+13	4103.640107	1.23899E+13
Chlorine	11.27417651	1060500321	11.20859493	1054331418	11.14339483	1048198400	11.07857399	1042101058
Cobalt	0.593581986	3528500913	0.593527033	3528174252	0.593472086	3527847621	0.593417143	3527521020
Copper	1.482232512	17482601068	1.48216335	17481785326	1.482094192	17480969622	1.482025037	17480153956
Cyanide	2.033803512	191308808.5	2.02197293	190195970.2	2.010211167	189089605.3	1.998517822	187989676.1
Fluorine	23.35367936	2196753299	23.21783162	2183974843	23.08277411	2171270719	22.94850222	2158640494
Krypton	0	0	0	0	0	0	0	0
Magnesium	866.973179	2.6176E+12	866.8151688	2.61713E+12	866.6571873	2.61665E+12	866.4992347	2.61617E+12
Molybdenum	1.00119811	5951542553	1.001105422	5950991573	1.001012742	5950440643	1.00092007	5949889764
Nitrogen								
	23.71929883	2231145129	23.58132429	2218166617	23.44415235	2205263600	23.30777833	2192435640
	0.051266642	4822373.492	0.050968425	4794321.872	0.050671943	4766433.429	0.050377186	4738707.211
Phosphorous	18.85605493	56931002712	18.85261832	56920626749	18.84918234	56910252678	18.84574698	56899880497
Potassium	75.86456577	6.72888E+11	75.85985855	6.72846E+11	75.85515161	6.72805E+11	75.85044498	6.72763E+11
Radon	0	0	0	0	0	0	0	0
Selenium	0.204584384	498000722.5	0.204538138	497888150.3	0.204491902	497775603.6	0.204445677	497663082.3
Strontium	1.496322971	10645577307	1.496207225	10644753836	1.496091488	10643930428	1.495975761	10643107084
Sulfur								
	53.54635901	4.43608E+11	53.54280197	4.43579E+11	53.53924518	4.43549E+11	53.53568861	4.4352E+11
	1.449090792	12005083747	1.44899453	12004286260	1.448898275	12003488826	1.448802026	12002691445
Vanadium	3.485558991	12562923965	3.485026828	12561005902	3.484494746	12559088132	3.483962746	12557170655
Xenon	0	0	0	0	0	0	0	0
Zinc	12.86480203	1.21632E+11	12.86405318	1.21625E+11	12.86330439	1.21618E+11	12.86255563	1.21611E+11

Appendix C Model Calculations	Leachate Concentration (mg/L) (9 Yr)	Remaining ICDF Contaminant Mass (mg) (9 Yr)	Leachate Concentration (mg/L) (10 Yr)	Remaining ICDF Contaminant Mass (mg) (10 Yr)	Leachate Concentration (mg/L) (11 Yr)	Remaining ICDF Contaminant Mass (mg) (11 Yr)	Leachate Concentration (mg/L) (12 Yr)	Remaining ICDF Contaminant Mass (mg) (12 Yr)
INORGANICS								
Arsenic	1.79459932	3318521607	1.794065348	3317534203	1.793531536	3316547092	1.792997883	3315560276
Astitine	0	0	0	0	0	0	0	0
Boron	35.70195257	1.07793E+11	35.69544571	1.07773E+11	35.68894004	1.07754E+11	35.68243555	1.07734E+11
Cadmium	0.584281508	2105913048	0.584192302	2105591525	0.584103109	2105270050	0.584013931	2104948625
Calcium	4102.892198	1.23876E+13	4102.144426	1.23854E+13	4101.396789	1.23831E+13	4100.649289	1.23809E+13
Chlorine	11.01413022	1036039183	10.95006131	1030012571	10.8863651	1024021015	10.8230394	1018064311
Cobalt	0.593362206	3527194450	0.593307274	3526867910	0.593252347	3526541400	0.593197425	3526214921
Copper	1.481955886	17479338328	1.481886737	17478522738	1.481817592	17477707187	1.48174845	17476891673
Cyanide	1.986892496	186896145.1	1.975334795	185808975.1	1.963844324	184728129.2	1.952420694	183653570.5
Fluorine	22.81501138	2146083739	22.68229707	2133600027	22.55035474	2121188932	22.41917992	2108850031
Krypton	0	0	0	0	0	0	0	0
Magnesium	866.3413108	2.61569E+12	866.1834157	2.61522E+12	866.0255494	2.61474E+12	865.8677119	2.61426E+12
Molybdenum	1.000827407	5949338936	1.000734753	5948788159	1.000642107	5948237433	1.000549469	5947686758
Nitrogen								
	23.1721976	2179682299	23.03740554	2167003145	22.90339756	2154397745	22.7701691	2141865670
	0.050084143	4711142.276	0.049792805	4683737.686	0.049503161	4656492.507	0.049215203	4629405.813
Phosphorous	18.84231225	56889510206	18.83887814	56879141806	18.83544466	56868775295	18.8320118	56858410674
Potassium	75.84573863	6.72721E+11	75.84103257	6.7268E+11	75.83632681	6.72638E+11	75.83162134	6.72596E+11
Radon	0	0	0	0	0	0	0	0
Selenium	0.204399463	497550586.5	0.204353258	497438116	0.204307065	497325671.1	0.204260881	497213251.5
Strontium	1.495860042	10642283804	1.495744332	10641460587	1.495628631	10640637434	1.495512939	10639814345
Sulfur								
	53.53213229	4.4349E+11	53.52857619	4.43461E+11	53.52502034	4.43431E+11	53.52146472	4.43402E+11
	1.448705783	12001894117	1.448609547	12001096843	1.448513317	12000299621	1.448417094	11999502452
Vanadium	3.483430827	12555253470	3.482898989	12553336578	3.482367232	12551419979	3.481835557	12549503673
Xenon	0	0	0	0	0	0	0	0
Zinc	12.86180692	1.21604E+11	12.86105826	1.21597E+11	12.86030963	1.2159E+11	12.85956105	1.21582E+11

Appendix C Model Calculations	Leachate Concentration (mg/L) (13 Yr)	Remaining ICDF Contaminant Mass (mg) (13 Yr)	Leachate Concentration (mg/L) (14 Yr)	Remaining ICDF Contaminant Mass (mg) (14 Yr)	Leachate Concentration (mg/L) (15 Yr)	Remaining ICDF Contaminant Mass (mg) (15 Yr)
INORGANICS						
Arsenic	1.792464388	3314573753	1.791931052	3313587523	1.791397875	3312601587
Astitine	0	0	0	0	0	0
Boron	35.67593224	1.07714E+11	35.66943013	1.07695E+11	35.66292919	1.07675E+11
Cadmium	0.583924765	2104627249	0.583835614	2104305922	0.583746476	2103984644
Calcium	4099.901925	1.23786E+13	4099.154697	1.23763E+13	4098.407605	1.23741E+13
Chlorine	10.76008206	1012142258	10.69749095	1006254653	10.63526392	1000401297
Cobalt	0.593142508	3525888471	0.593087596	3525562052	0.593032689	3525235663
Copper	1.481679312	17476076198	1.481610176	17475260760	1.481541044	17474445361
Cyanide	1.941063514	182585262.6	1.929772399	181523168.9	1.918546964	180467253.4
Fluorine	22.28876814	2096582906	22.15911497	2084387139	22.03021598	2072262314
Krypton	0	0	0	0	0	0
Magnesium	865.7099032	2.61379E+12	865.5521232	2.61331E+12	865.3943719	2.61284E+12
Molybdenum	1.000456841	5947136134	1.000364221	5946585561	1.000271609	5946035039
Nitrogen						
	22.63771563	2129406494	22.50603263	2117019792	22.37511563	2104705144
	0.048928919	4602476.681	0.048644301	4575704.196	0.048361338	4549087.445
Phosphorous	18.82857957	56848047941	18.82514797	56837687097	18.82171699	56827328142
Potassium	75.82691616	6.72554E+11	75.82221127	6.72513E+11	75.81750668	6.72471E+11
Radon	0	0	0	0	0	0
Selenium	0.204214709	497100857.3	0.204168546	496988488.6	0.204122394	496876145.2
Strontium	1.495397256	10638991320	1.495281582	10638168358	1.495165917	10637345460
Sulfur						
	53.51790934	4.43372E+11	53.51435419	4.43343E+11	53.51079928	4.43314E+11
	1.448320877	11998705336	1.448224666	11997908273	1.448128462	11997111263
Vanadium	3.481303962	12547587659	3.480772449	12545671937	3.480241017	12543756508
Xenon	0	0	0	0	0	0
Zinc	12.85881252	1.21575E+11	12.85806402	1.21568E+11	12.85731557	1.21561E+11

Appendix C Model Calculations	Elemental Formula	Kd (mL/g) or (L/kg)	Half-Life in years	Isotope Specific Activity (pCi/g)	mg/kg from non-rads	mg/kg from rads	Total Inventory (kg)	Initial Soil Water Concentration (mg/L)	Initial Soil Concentration (mg/kg)	Initial Contaminant Mass in Soil Water (mg)	Initial Contaminant Mass on Soil (mg)
ORGANICS											
1,1,1-Trichloroethane f		0.41			0.015685556		9.1761E+00	0.027433818	0.011247865	2595648.484	6580401.516
1,1,2,2-Tetrachloroethane		0.24			4.22222E-05		2.4700E-02	0.000105096	2.5223E-05	9943.639291	14756.36071
1,1,2-Trichloroethane		0.23			0.000232222		1.3585E-01	0.000592783	0.00013634	56086.14876	79763.85124
1,1-Dichloroethane		0.16			0.002343333		1.3709E+00	0.007283209	0.001165313	689100.2011	681749.7989
1,1-Dichloroethene		0.2			0.001477778		8.6450E-01	0.004085113	0.000817023	386512.6677	477987.3323
1,2,4-Trichlorobenzene		4.98					5.3900E+00	0.001791833	0.00892333	169534.1742	5220465.826
1,2-Dichlorobenzene		1.14			0.011378889		6.6567E+00	0.00874086	0.00996458	827015.7784	5829634.222
1,2-Dichloroethane		0.11					2.5500E-03	1.60409E-05	1.7645E-06	1517.706577	1032.293423
1,2-Dichloroethene (total)		0.11					1.5400E-01	0.000968743	0.000106562	91657.57365	62342.42635
1,3-Dichlorobenzene		4.44			0.011378889		6.6567E+00	0.002472594	0.010978316	233944.2609	6422705.739
1,4-Dichlorobenzene		1.85			0.450046667		2.6328E+02	0.223698205	0.413841679	21165187.91	242112112.1
1,4-Dioxane g		0			2.11111E-05		1.2350E-02	0.000130529	0	12350	0
2,4,5-Trichlorophenol		2.12			0.044607778		2.6096E+01	0.019548834	0.041443527	1849611.35	24245938.65
2,4,6-Trichlorophenol		7.54			0.018261111		1.0683E+01	0.002370897	0.017876567	224322.2718	10458427.73
2,4-Dichlorophenol		1.04			0.021596667		1.2634E+01	0.017970294	0.018689106	1700257.94	10933792.06
2,4-Dimethylphenol		0.63			0.018261111		1.0683E+01	0.023063562	0.014530044	2182157.083	8500592.917
2,4-Dinitrophenol		0.06			0.050941111		2.9801E+01	0.229735016	0.013784101	21736360.32	8064189.679
2,4-Dinitrotoluene		0.29			0.011378889		6.6567E+00	0.025188322	0.007304613	2383191.121	4273458.879
2,6-Dinitrotoluene		0.21			0.020688889		1.2103E+01	0.05565304	0.011687138	5265608.005	6837391.995
2-Butanone		0.04			0.024721111		1.4462E+01	0.122541077	0.004901643	11594214.32	2867635.676
2-Chlorophenol		0.26			0.018261111		1.0683E+01	0.043298351	0.011257571	4096670.075	6586079.925
2-Hexanone		0.04			0.002702222		1.5808E+00	0.013394755	0.00053579	1267343.666	313456.3335
2-Methylphenol		0.27					9.7800E+00	0.038721244	0.010454736	3663607.417	6116392.583
2-Nitroaniline		0.05			0.027212222		1.5919E+01	0.128518399	0.00642592	12159758.12	3759391.884
2-Nitrophenol		0.13			0.018261111		1.0683E+01	0.062593182	0.008137114	5922248.914	4760501.086
3,3'-Dichlorobenzidine		1.94			0.011378889		6.6567E+00	0.005413742	0.010502659	512220.7402	6144429.26
3-Nitroaniline		0.04			0.027212222		1.5919E+01	0.134889367	0.005395575	12762546.77	3156603.234
4-Chloro-3-methylphenol		2.33			0.018261111		1.0683E+01	0.007328256	0.017074837	693362.3963	9989387.604
4-Chloroaniline		0.13			0.040786667		2.3860E+01	0.139803499	0.018174455	13227497	10632703
4-Methylphenol		0.02			0.03857		2.2563E+01	0.212230783	0.004244616	20080198.75	2483251.246
4-Nitrophenol		0.15			0.051553333		3.0159E+01	0.165370714	0.024805607	15646536.96	14512163.04
Acenaphthene		14.69					9.5800E+01	0.011025704	0.161967588	1043196.086	94756803.91
Acetone f		0			0.620518889		3.6300E+02	3.836641696	0	363003550	0
Acetonitrile g		0			2.11111E-05		1.2350E-02	0.000130529	0	12350	0
Acrolein		0					4.29E-03	4.53545E-05	0	4291.215978	0
Acrylonitrile		0					4.29E-03	4.53545E-05	0	4291.215978	0
Benzene f		0.19			0.603334444		3.5295E+02	1.715253742	0.325898211	162288596.8	190662053.2
Benzidine g		0.04			0.000295556		1.7290E-01	0.001465051	5.86021E-05	138615.7135	34284.28648
Benzo(b)fluoranthene		0.001849785			0.179465556		1.0499E+02	1.09707962	0.002029361	103800101.3	1187248.669
Benzoic acid g		0.14			0.00855		5.0018E+00	0.028335332	0.003966946	2680945.149	2320804.851
bis(2-Chloroethoxy)methane		0.01			0.011378889		6.6567E+00	0.066258216	0.000662582	6269015.853	387634.1469
bis(2-Chloroethyl)ether		0.23			0.011378889		6.6567E+00	0.029046384	0.006680668	2748221.289	3908428.711

Appendix C Model Calculations	Remaining ICDF Contaminant Mass (mg) (0 Yr)	Leachate Concentration (mg/L) (1 Yr)	Remaining ICDF Contaminant Mass (mg) (1 Yr)	Leachate Concentration (mg/L) (2 Yr)	Remaining ICDF Contaminant Mass (mg) (2 Yr)	Leachate Concentration (mg/L) (3 Yr)	Remaining ICDF Contaminant Mass (mg) (3 Yr)	Leachate Concentration (mg/L) (4 Yr)	Remaining ICDF Contaminant Mass (mg) (4 Yr)
ORGANICS									
1,1,1-Trichloroethane f	9176050	0.027433818	9160951.181	0.027388676	9145877.207	0.027343609	9130828.036	0.027298617	9115803.628
1,1,2,2-Tetrachloroethane	24700	0.000105096	24642.15811	0.00010485	24584.45168	0.000104604	24526.88038	0.000104359	24469.4439
1,1,2-Trichloroethane	135850	0.000592783	135523.7484	0.00059136	135198.2802	0.00058994	134873.5937	0.000588523	134549.687
1,1-Dichloroethane	1370850	0.007283209	1366841.522	0.007261912	1362844.766	0.007240677	1358859.696	0.007219505	1354886.279
1,1-Dichloroethene	864500	0.004085113	862251.666	0.004074489	860009.1793	0.004063892	857772.5247	0.004053323	855541.6871
1,2,4-Trichlorobenzene	5390000	0.001791833	5389013.824	0.001791506	5388027.829	0.001791178	5387042.014	0.00179085	5386056.379
1,2-Dichlorobenzene	6656650	0.00874086	6651839.271	0.008734543	6647032.019	0.008728231	6642228.241	0.008721923	6637427.934
1,2-Dichloroethane	2550	1.60409E-05	2541.171541	1.59853E-05	2532.373647	1.593E-05	2523.606213	1.58748E-05	2514.869133
1,2-Dichloroethene (total)	154000	0.000968743	153466.8303	0.000965389	152935.5065	0.000962047	152406.0223	0.000958716	151878.3712
1,3-Dichlorobenzene	6656650	0.002472594	6655289.152	0.002472088	6653928.583	0.002471583	6652568.292	0.002471078	6651208.279
1,4-Dichlorobenzene	263277300	0.223698205	263154182.7	0.223593596	263031122.9	0.223489036	262908120.7	0.223384525	262785176
1,4-Dioxane g	12350	0.000130529	12278.16038	0.00012977	12206.73864	0.000129015	12135.73236	0.000128264	12065.13913
2,4,5-Trichlorophenol	26095550	0.019548834	26084790.86	0.019540774	26074036.16	0.019532717	26063285.88	0.019524664	26052540.05
2,4,6-Trichlorophenol	10682750	0.002370897	10681445.12	0.002370608	10680140.41	0.002370318	10678835.85	0.002370029	10677531.45
2,4-Dichlorophenol	12634050	0.017970294	12624159.64	0.017956226	12614277.03	0.017942169	12604402.15	0.017928124	12594535.01
2,4-Dimethylphenol	10682750	0.023063562	10670056.45	0.023036157	10657377.98	0.023008785	10644714.58	0.022981445	10632066.22
2,4-Dinitrophenol	29800550	0.229735016	29674110.16	0.22876028	29548206.8	0.22778968	29422837.62	0.226823199	29298000.37
2,4-Dinitrotoluene	6656650	0.025188322	6642787.04	0.025135866	6628952.951	0.025083519	6615147.672	0.02503128	6601371.144
2,6-Dinitrotoluene	12103000	0.05565304	12072370.1	0.055512195	12041817.71	0.055371707	12011342.65	0.055231574	11980944.71
2-Butanone	14461850	0.122541077	14394406.76	0.121969604	14327278.05	0.121400795	14260462.39	0.120834639	14193958.32
2-Chlorophenol	10682750	0.043298351	10658919.78	0.043201765	10635142.71	0.043105394	10611418.69	0.043009238	10587747.59
2-Hexanone	1580800	0.013394755	1573427.895	0.013332288	1566090.171	0.013270113	1558786.666	0.013208227	1551517.221
2-Methylphenol	9780000	0.038721244	9758688.892	0.038636868	9737424.222	0.038552677	9716205.889	0.038468668	9695033.792
2-Nitroaniline	15919150	0.128518399	15848417.01	0.127947358	15777998.3	0.127378854	15707892.48	0.126812876	15638098.16
2-Nitrophenol	10682750	0.062593182	10648300.43	0.062391332	10613961.96	0.062190133	10579734.22	0.061989584	10545616.86
3,3'-Dichlorobenzidine	6656650	0.005413742	6653670.425	0.005411318	6650692.185	0.005408896	6647715.277	0.005406475	6644739.702
3-Nitroaniline	15919150	0.134889367	15844910.6	0.134260307	15771017.42	0.13363418	15697468.84	0.133010973	15624263.26
4-Chloro-3-methylphenol	10682750	0.007328256	10678716.73	0.00732549	10674684.98	0.007322724	10670654.76	0.007319959	10666626.05
4-Chloroaniline	23860200	0.139803499	23783256	0.139352663	23706560.13	0.138903281	23630111.58	0.138455348	23553909.56
4-Methylphenol	22563450	0.212230783	22446644.01	0.211132112	22330442.71	0.210039127	22214842.95	0.208951801	22099841.62
4-Nitrophenol	30158700	0.165370714	30067684.51	0.164871644	29976943.69	0.16437408	29886476.71	0.163878018	29796282.76
Acenaphthene	95800000	0.011025704	95793931.76	0.011025005	95787863.9	0.011024307	95781796.42	0.011023609	95775729.33
Acetone f	363003550	3.836641696	360891967.9	3.814324052	358792668.9	3.79213623	356705581.4	3.770077473	354630634.4
Acetonitrile g	12350	0.000130529	12278.16038	0.00012977	12206.73864	0.000129015	12135.73236	0.000128264	12065.13913
Acrolein	4291.215978	4.53545E-05	4266.254087	4.50907E-05	4241.4374	4.48284E-05	4216.76507	4.45677E-05	4192.236259
Acrylonitrile	4291.215978	4.53545E-05	4266.254087	4.50907E-05	4241.4374	4.48284E-05	4216.76507	4.45677E-05	4192.236259
Benzene f	352950650	1.715253742	352006621.5	1.710665994	351065118	1.706090518	350126132.7	1.701527279	349189658.9
Benzidine g	172900	0.001465051	172093.676	0.001458219	171291.1124	0.001451419	170492.2916	0.00144465	169697.196
Benzo(b)fluoranthene	104987350	1.09707962	104383547.5	1.090770104	103783217.7	1.084496876	103186340.4	1.078259725	102592895.9
Benzoic acid g	5001750	0.028335332	4986155.013	0.028246985	4970608.649	0.028158913	4955110.758	0.028071116	4939661.187
bis(2-Chloroethoxy)methane	6656650	0.066258216	6620183.3	0.065895238	6583916.373	0.065534248	6547848.125	0.065175236	6511977.468
bis(2-Chloroethyl)ether	6656650	0.029046384	6640663.669	0.028976627	6624715.731	0.028907038	6608806.092	0.028837616	6592934.661

Appendix C Model Calculations	Leachate Concentration (mg/L) (5 Yr)	Remaining ICDF Contaminant Mass (mg) (5 Yr)	Leachate Concentration (mg/L) (6 Yr)	Remaining ICDF Contaminant Mass (mg) (6 Yr)	Leachate Concentration (mg/L) (7 Yr)	Remaining ICDF Contaminant Mass (mg) (7 Yr)	Leachate Concentration (mg/L) (8 Yr)	Remaining ICDF Contaminant Mass (mg) (8 Yr)
ORGANICS								
1,1,1-Trichloroethane f	0.027253698	9100803.942	0.027208853	9085828.938	0.027164082	9070878.574	0.027119385	9055952.811
1,1,2,2-Tetrachloroethane	0.000104115	24412.14192	0.000103871	24354.97413	0.000103628	24297.94022	0.000103385	24241.03987
1,1,2-Trichloroethane	0.000587109	134226.5581	0.000585699	133904.2052	0.000584293	133582.6265	0.00058289	133261.8201
1,1-Dichloroethane	0.007198395	1350924.48	0.007177346	1346974.267	0.007156359	1343035.603	0.007135433	1339108.457
1,1-Dichloroethene	0.004042782	853316.6513	0.004032267	851097.4022	0.004021781	848883.9248	0.004011321	846676.204
1,2,4-Trichlorobenzene	0.001790522	5385070.925	0.001790195	5384085.651	0.001789867	5383100.557	0.00178954	5382115.644
1,2-Dichlorobenzene	0.008715619	6632631.097	0.008709321	6627837.726	0.008703027	6623047.82	0.008696737	6618261.375
1,2-Dichloroethane	1.58199E-05	2506.162302	1.57651E-05	2497.485615	1.57105E-05	2488.838968	1.56561E-05	2480.222257
1,2-Dichloroethene (total)	0.000955397	151352.5468	0.000952089	150828.543	0.000948793	150306.3533	0.000945508	149785.9716
1,3-Dichlorobenzene	0.002470572	6649848.543	0.002470067	6648489.086	0.002469562	6647129.907	0.002469058	6645771.006
1,4-Dichlorobenzene	0.223280063	262662288.8	0.22317565	262539459	0.223071285	262416686.7	0.22296697	262293971.8
1,4-Dioxane g	0.000127518	11994.95653	0.000126777	11925.18219	0.000126039	11855.81372	0.000125306	11786.84876
2,4,5-Trichlorophenol	0.019516614	26041798.64	0.019508567	26031061.66	0.019500524	26020329.11	0.019492484	26009600.98
2,4,6-Trichlorophenol	0.002369739	10676227.21	0.00236945	10674923.13	0.00236916	10673619.21	0.002368871	10672315.45
2,4-Dichlorophenol	0.017914089	12584675.59	0.017900065	12574823.88	0.017886053	12564979.89	0.017872051	12555143.61
2,4-Dimethylphenol	0.022954138	10619432.9	0.022926863	10606814.58	0.022899621	10594211.26	0.022872411	10581622.92
2,4-Dinitrophenol	0.225860817	29173692.79	0.224902519	29049912.63	0.223948287	28926657.65	0.222998104	28803925.62
2,4-Dinitrotoluene	0.024979151	6587623.306	0.02492713	6573904.099	0.024875217	6560213.464	0.024823413	6546551.34
2,6-Dinitrotoluene	0.055091795	11950623.7	0.054952371	11920379.42	0.054813299	11890211.69	0.054674579	11860120.31
2-Butanone	0.120271123	14127764.4	0.119710236	14061879.18	0.119151964	13996301.22	0.118596295	13931029.08
2-Chlorophenol	0.042913296	10564129.29	0.042817569	10540563.68	0.042722055	10517050.64	0.042626754	10493590.04
2-Hexanone	0.01314663	1544281.677	0.01308532	1537079.877	0.013024297	1529911.662	0.012963557	1522776.876
2-Methylphenol	0.038384843	9673907.83	0.038301201	9652827.902	0.038217741	9631793.909	0.038134462	9610805.75
2-Nitroaniline	0.126249413	15568613.96	0.125688453	15499438.49	0.125129986	15430570.39	0.124574	15362008.28
2-Nitrophenol	0.061789681	10511609.52	0.061590422	10477711.84	0.061391806	10443923.48	0.061193831	10410244.08
3,3'-Dichlorobenzidine	0.005404055	6641765.458	0.005401636	6638792.546	0.005399219	6635820.965	0.005396802	6632850.713
3-Nitroaniline	0.132390673	15551399.08	0.131773265	15478874.69	0.131158737	15406688.53	0.130547075	15334839.01
4-Chloro-3-methylphenol	0.007317196	10662598.87	0.007314433	10658573.21	0.007311671	10654549.06	0.007308911	10650526.44
4-Chloroaniline	0.138008859	23477953.28	0.13756381	23402241.94	0.137120197	23326774.76	0.136678013	23251550.94
4-Methylphenol	0.207870104	21985435.63	0.206794007	21871621.9	0.20572348	21758397.35	0.204658495	21645758.94
4-Nitrophenol	0.163383453	29706361	0.16289038	29616710.61	0.162398796	29527330.78	0.161908695	29438220.69
Acenaphthene	0.01102291	95769662.62	0.011022212	95763596.3	0.011021514	95757530.36	0.011020816	95751464.81
Acetone f	3.748147032	352567757.3	3.72634416	350516880	3.704668114	348477932.5	3.683118157	346450845.6
Acetonitrile g	0.000127518	11994.95653	0.000126777	11925.18219	0.000126039	11855.81372	0.000125306	11786.84876
Acrolein	4.43084E-05	4167.850131	4.40507E-05	4143.605857	4.37944E-05	4119.502611	4.35397E-05	4095.539573
Acrylonitrile	4.43084E-05	4167.850131	4.40507E-05	4143.605857	4.37944E-05	4119.502611	4.35397E-05	4095.539573
Benzene f	1.696976246	348255689.8	1.692437385	347324218.8	1.687910664	346395239.2	1.68339605	345468744.3
Benzidine g	0.001437913	168905.8084	0.001431207	168118.1115	0.001424532	167334.088	0.001417889	166553.7209
Benzo(b)fluoranthene	1.072058446	102002864.4	1.065892832	101416226.3	1.059762677	100832962.1	1.053667778	100253052.3
Benzoic acid g	0.027983593	4924259.787	0.027896343	4908906.407	0.027809365	4893600.897	0.027722658	4878343.109
bis(2-Chloroethoxy)methane	0.064818191	6476303.318	0.064463101	6440824.6	0.064109957	6405540.242	0.063758748	6370449.181
bis(2-Chloroethyl)ether	0.028768361	6577101.346	0.028699272	6561306.056	0.028630349	6545548.699	0.028561592	6529829.185

Appendix C Model Calculations	Leachate Concentration (mg/L) (9 Yr)	Remaining ICDF Contaminant Mass (mg) (9 Yr)	Leachate Concentration (mg/L) (10 Yr)	Remaining ICDF Contaminant Mass (mg) (10 Yr)	Leachate Concentration (mg/L) (11 Yr)	Remaining ICDF Contaminant Mass (mg) (11 Yr)	Leachate Concentration (mg/L) (12 Yr)	Remaining ICDF Contaminant Mass (mg) (12 Yr)
ORGANICS								
1,1,1-Trichloroethane f	0.027074761	9041051.607	0.02703021	9026174.923	0.026985733	9011322.717	0.026941329	8996494.95
1,1,2,2-Tetrachloroethane	0.000103143	24184.27276	0.000102902	24127.63859	0.000102661	24071.13705	0.00010242	24014.76781
1,1,2-Trichloroethane	0.00058149	132941.7841	0.000580093	132622.5167	0.0005787	132304.016	0.00057731	131986.2803
1,1-Dichloroethane	0.007114568	1335192.794	0.007093765	1331288.581	0.007073022	1327395.784	0.00705234	1323514.37
1,1-Dichloroethene	0.004000889	844474.225	0.003990483	842277.9727	0.003980105	840087.4323	0.003969754	837902.5888
1,2,4-Trichlorobenzene	0.001789212	5381130.91	0.001788885	5380146.357	0.001788558	5379161.984	0.00178823	5378177.792
1,2-Dichlorobenzene	0.008690452	6613478.389	0.008684171	6608698.86	0.008677895	6603922.785	0.008671624	6599150.162
1,2-Dichloroethane	1.56019E-05	2471.635378	1.55479E-05	2463.078228	1.54941E-05	2454.550704	1.54405E-05	2446.052704
1,2-Dichloroethene (total)	0.000942235	149267.3915	0.000938973	148750.6067	0.000935722	148235.6112	0.000932482	147722.3986
1,3-Dichlorobenzene	0.002468553	6644412.382	0.002468048	6643054.036	0.002467544	6641695.968	0.002467039	6640338.178
1,4-Dichlorobenzene	0.222862703	262171314.3	0.222758485	262048714.2	0.222654315	261926171.4	0.222550194	261803685.9
1,4-Dioxane g	0.000124577	11718.28497	0.000123852	11650.12002	0.000123132	11582.35158	0.000122416	11514.97734
2,4,5-Trichlorophenol	0.019484447	25998877.28	0.019476414	25988157.99	0.019468384	25977443.13	0.019460357	25966732.69
2,4,6-Trichlorophenol	0.002368582	10671011.85	0.002368292	10669708.4	0.002368003	10668405.12	0.002367714	10667101.99
2,4-Dichlorophenol	0.01785806	12545315.02	0.01784408	12535494.13	0.017830111	12525680.93	0.017816153	12515875.41
2,4-Dimethylphenol	0.022845233	10569049.53	0.022818088	10556491.08	0.022790975	10543947.55	0.022763894	10531418.93
2,4-Dinitrophenol	0.222051952	28681714.34	0.221109815	28560021.57	0.220171675	28438845.14	0.219237515	28318182.84
2,4-Dinitrotoluene	0.024771716	6532917.668	0.024720127	6519312.39	0.024668646	6505735.446	0.024617272	6492186.776
2,6-Dinitrotoluene	0.05453621	11830105.08	0.054398192	11800165.81	0.054260523	11770302.31	0.054123202	11740514.39
2-Butanone	0.118043218	13866061.34	0.11749272	13801396.58	0.11694479	13737033.38	0.116399414	13672970.34
2-Chlorophenol	0.042531665	10470181.78	0.042436789	10446825.74	0.042342125	10423521.8	0.042247671	10400269.84
2-Hexanone	0.012903102	1515675.364	0.012842928	1508606.97	0.012783034	1501571.539	0.01272342	1494568.919
2-Methylphenol	0.038051365	9589863.325	0.03796845	9568966.534	0.037885714	9548115.279	0.03780316	9527309.459
2-Nitroaniline	0.124020485	15293750.82	0.123469429	15225796.64	0.122920822	15158144.4	0.122374652	15090792.76
2-Nitrophenol	0.060996494	10376673.29	0.060799794	10343210.75	0.060603727	10309856.13	0.060408293	10276609.06
3,3'-Dichlorobenzidine	0.005394386	6629881.792	0.005391972	6626914.199	0.005389558	6623947.934	0.005387146	6620982.997
3-Nitroaniline	0.129938265	15263324.57	0.129332294	15192143.63	0.128729149	15121294.64	0.128128817	15050776.07
4-Chloro-3-methylphenol	0.007306151	10646505.33	0.007303393	10642485.75	0.007300636	10638467.68	0.007297879	10634451.13
4-Chloroaniline	0.136237256	23176569.7	0.135797921	23101830.26	0.135360002	23027331.84	0.134923495	22953073.66
4-Methylphenol	0.203599023	21533703.64	0.202545036	21422228.42	0.201496505	21311330.29	0.200453402	21201006.25
4-Nitrophenol	0.161420073	29349379.52	0.160932926	29260806.46	0.160447249	29172500.71	0.159963038	29084461.45
Acenaphthene	0.011020118	95745399.64	0.01101942	95739334.85	0.011018722	95733270.45	0.011018024	95727206.43
Acetone f	3.661693556	344435550.2	3.640393581	342431977.6	3.619217507	340440059.8	3.598164615	338459729
Acetonitrile g	0.000124577	11718.28497	0.000123852	11650.12002	0.000123132	11582.35158	0.000122416	11514.97734
Acrolein	4.32864E-05	4071.715927	4.30346E-05	4048.030863	4.27843E-05	4024.483574	4.25354E-05	4001.073259
Acrylonitrile	4.32864E-05	4071.715927	4.30346E-05	4048.030863	4.27843E-05	4024.483574	4.25354E-05	4001.073259
Benzene f	1.678893512	344544727.5	1.674403016	343623182.1	1.669924531	342704101.6	1.665458025	341787479.3
Benzidine g	0.001411277	165776.9929	0.001404695	165003.8873	0.001398144	164234.3871	0.001391624	163468.4755
Benzo(b)fluoranthene	1.047607932	99676477.73	1.041582937	99103219.13	1.035592593	98533257.44	1.029636701	97966573.72
Benzoic acid g	0.027636221	4863132.893	0.027550054	4847970.101	0.027464156	4832854.585	0.027378525	4817786.197
bis(2-Chloroethoxy)methane	0.063409462	6335550.356	0.06306209	6300842.716	0.062716621	6266325.212	0.062373045	6231996.804
bis(2-Chloroethyl)ether	0.028492999	6514147.421	0.028424572	6498503.319	0.028356308	6482896.786	0.028288209	6467327.734

Appendix C Model Calculations	Leachate Concentration (mg/L) (13 Yr)	Remaining ICDF Contaminant Mass (mg) (13 Yr)	Leachate Concentration (mg/L) (14 Yr)	Remaining ICDF Contaminant Mass (mg) (14 Yr)	Leachate Concentration (mg/L) (15 Yr)	Remaining ICDF Contaminant Mass (mg) (15 Yr)
ORGANICS						
1,1,1-Trichloroethane f	0.026896998	8981691.582	0.02685274	8966912.572	0.026808555	8952157.881
1,1,2,2-Tetrachloroethane	0.00010218	23958.53059	0.000101941	23902.42506	0.000101702	23846.45091
1,1,2-Trichloroethane	0.000575924	131669.3076	0.000574541	131353.0961	0.000573161	131037.644
1,1-Dichloroethane	0.007031718	1319644.306	0.007011157	1315785.558	0.006990656	1311938.093
1,1-Dichloroethene	0.00395943	835723.4276	0.003949132	833549.9338	0.003938862	831382.0927
1,2,4-Trichlorobenzene	0.001787903	5377193.779	0.001787576	5376209.946	0.001787249	5375226.293
1,2-Dichlorobenzene	0.008665357	6594380.988	0.008659094	6589615.26	0.008652837	6584852.977
1,2-Dichloroethane	1.5387E-05	2437.584125	1.53337E-05	2429.144866	1.52806E-05	2420.734824
1,2-Dichloroethene (total)	0.000929254	147210.9629	0.000926037	146701.2978	0.000922831	146193.3972
1,3-Dichlorobenzene	0.002466535	6638980.665	0.002466031	6637623.429	0.002465526	6636266.472
1,4-Dichlorobenzene	0.222446123	261681257.6	0.222342099	261558886.7	0.222238125	261436572.9
1,4-Dioxane g	0.000121704	11447.99502	0.000120996	11381.40234	0.000120292	11315.19702
2,4,5-Trichlorophenol	0.019452333	25956026.66	0.019444313	25945325.04	0.019436296	25934627.84
2,4,6-Trichlorophenol	0.002367425	10665799.03	0.002367135	10664496.22	0.002366846	10663193.58
2,4-Dichlorophenol	0.017802206	12506077.56	0.01778827	12496287.39	0.017774345	12486504.88
2,4-Dimethylphenol	0.022736845	10518905.2	0.022709829	10506406.33	0.022682844	10493922.32
2,4-Dinitrophenol	0.218307319	28198032.49	0.21738107	28078391.93	0.21645875	27959258.99
2,4-Dinitrotoluene	0.024566004	6478666.323	0.024514844	6465174.027	0.02446379	6451709.83
2,6-Dinitrotoluene	0.053986228	11710801.85	0.053849602	11681164.51	0.053713321	11651602.18
2-Butanone	0.115856582	13609206.07	0.115316282	13545739.16	0.114778501	13482568.23
2-Chlorophenol	0.042153428	10377069.76	0.042059396	10353921.42	0.041965573	10330824.72
2-Hexanone	0.012664084	1487598.955	0.012605025	1480661.496	0.012546241	1473756.39
2-Methylphenol	0.037720785	9506548.977	0.037638589	9485833.732	0.037556573	9465163.628
2-Nitroaniline	0.121830909	15023740.37	0.121289582	14956985.92	0.120750661	14890528.08
2-Nitrophenol	0.06021349	10243469.22	0.060019314	10210436.24	0.059825765	10177509.78
3,3'-Dichlorobenzidine	0.005384734	6618019.388	0.005382324	6615057.105	0.005379915	6612096.147
3-Nitroaniline	0.127531285	14980586.35	0.126936539	14910723.97	0.126344567	14841187.4
4-Chloro-3-methylphenol	0.007295124	10630436.09	0.00729237	10626422.57	0.007289616	10622410.57
4-Chloroaniline	0.134488396	22879054.94	0.134054699	22805274.92	0.133622402	22731732.83
4-Methylphenol	0.1994157	21091253.33	0.198383369	20982068.58	0.197356382	20873449.05
4-Nitrophenol	0.159480287	28996687.89	0.158998994	28909179.22	0.158519154	28821934.63
Acenaphthene	0.011017326	95721142.8	0.011016628	95715079.55	0.01101593	95709016.69
Acetone f	3.577234186	336490917.7	3.556425509	334533558.9	3.535737876	332587586
Acetonitrile g	0.000121704	11447.99502	0.000120996	11381.40234	0.000120292	11315.19702
Acrolein	4.2288E-05	3977.799121	4.2042E-05	3954.660369	4.17974E-05	3931.656214
Acrylonitrile	4.2288E-05	3977.799121	4.2042E-05	3954.660369	4.17974E-05	3931.656214
Benzene f	1.661003465	340873308.6	1.65656082	339961583.1	1.652130057	339052296.2
Benzidine g	0.001385134	162706.1357	0.001378675	161947.3511	0.001372245	161192.1052
Benzo(b)fluoranthene	1.023715062	97403149.1	1.01782748	96842964.84	1.011973758	96286002.32
Benzoic acid g	0.027293161	4802764.792	0.027208064	4787790.222	0.027123232	4772862.341
bis(2-Chloroethoxy)methane	0.062031351	6197856.454	0.061691528	6163903.134	0.061353567	6130135.817
bis(2-Chloroethyl)ether	0.028220273	6451796.072	0.028152501	6436301.709	0.028084891	6420844.558

Appendix C Model Calculations	Elemental Formula	Kd (mL/g) or (L/kg)	Half-Life in years	Isotope Specific Activity (pCi/g)	mg/kg from non-rads	mg/kg from rads	Total Inventory (kg)	Initial Soil Water Concentration (mg/L)	Initial Soil Concentration (mg/kg)	Initial Contaminant Mass in Soil Water (mg)	Initial Contaminant Mass on Soil (mg)
ORGANICS (Continued)											
bis(2-Chloroisopropyl)ether		0.7			0.011378889		6.6567E+00	0.013203975	0.009242783	1249293.087	5407356.913
bis(2-Ethylhexyl)phthalate		18					6.97E+01	0.006559794	0.118076299	620654.4247	69078837.47
Carbazole		10.17			0.032342222		1.8920E+01	0.003130189	0.031834024	296162.606	18624037.39
Carbon Disulfide f		0.14			0.045536667		2.6639E+01	0.150911877	0.021127663	14278515.28	12360434.72
Chlorobenzene		0.67			0.006565556		3.8409E+00	0.007893421	0.005288592	746835.402	3094014.598
Chloroethane		0.05					1.43E-03	1.15362E-05	5.76811E-07	1091.497904	337.4547685
Chloromethane		0.02			0.000358889		2.0995E-01	0.00197478	3.94956E-05	186843.6666	23106.33343
Diethylphthalate		0.25					5.39E+00	0.022385029	0.005596257	2117957.715	3274009.635
Dimethyl Disulfide g		0.11			0.002955556		1.7290E+00	0.010876346	0.001196398	1029064.577	699935.4231
Dimethylphthalate		0.07			0.011378889		6.6567E+00	0.04910214	0.00343715	4645795.045	2010854.955
Di-n-butylphthalate		4.7					1.13E+01	0.003972328	0.018669941	375841.4845	10922579.94
Ethylbenzene		0.61			0.07809		4.5683E+01	0.10118273	0.061721465	9573395.969	36109254.03
Hexachlorobutadiene		10.17			0.020688889		1.2103E+01	0.00200234	0.020363802	189451.2753	11913548.72
Hexachlorocyclopentadiene		9.707809708			0.011378889		6.6567E+00	0.00115286	0.01119175	109077.803	6547572.197
Hexachloroethane		5.34			0.011378889		6.6567E+00	0.002068114	0.011043731	195674.476	6460975.524
Indeno(1,2,3-cd)pyrene		4.046888648			0.011378889		6.6567E+00	0.00270355	0.010940965	255796.1463	6400853.854
Isophorone		0.14					5.39E+00	0.030542276	0.004275919	2889755.022	2501564.598
Methyl Acetate g		0			0.000485556		2.8405E-01	0.003002169	0	284050	0
Methylene Chloride		0.03			0.083621111		4.8918E+01	0.436124628	0.013083739	41263897.09	7654452.91
Naphthalene		3.57			0.425156667		2.4872E+02	0.113923398	0.406706531	10778853.28	237937796.7
Nitrobenzene		0.36			0.011378889		6.6567E+00	0.021808798	0.007851167	2063437.694	4593212.306
N-Nitroso-di-n-propylamine		0.07					5.39E+00	0.039754218	0.002782795	3761342.162	1628034.266
N-Nitrosodiphenylamine		3.87					5.39E+00	0.00228489	0.008842525	216184.6979	5173191.73
Phenol		0.09					3.78E+01	0.256627717	0.023096495	24280811.1	13512271.38
Pyrene		0.001114606			0.25327		1.4816E+02	1.555238882	0.001733478	147148803.6	1014146.391
Styrene		2.74					4.86E-04	2.86165E-07	7.84093E-07	27.07552168	458.7225135
Tetrachloroethene f		0.8			0.009626667		5.6316E+00	0.010009182	0.008007345	947017.9372	4684582.063
Toluene f		1			0.982046667		5.7450E+02	0.845283404	0.845283404	79976422.27	494520877.7
Trichloroethene f		0.28			0.072052222		4.2151E+01	0.163105615	0.045669572	15432224.8	26718325.2
Xylene (ortho) f		0.72			0.003884444		2.2724E+00	0.004405237	0.003171771	416801.1739	1855598.826
Xylene (total) f		0.59			3.453777778		2.0205E+03	4.594189819	2.710571993	434678905.7	1585781094

Appendix C Model Calculations	Remaining ICDF Contaminant Mass (mg) (0 Yr)	Leachate Concentration (mg/L) (1 Yr)	Remaining ICDF Contaminant Mass (mg) (1 Yr)	Leachate Concentration (mg/L) (2 Yr)	Remaining ICDF Contaminant Mass (mg) (2 Yr)	Leachate Concentration (mg/L) (3 Yr)	Remaining ICDF Contaminant Mass (mg) (3 Yr)	Leachate Concentration (mg/L) (4 Yr)	Remaining ICDF Contaminant Mass (mg) (4 Yr)
ORGANICS (Continued)									
bis(2-Chloroisopropyl)ether	6656650	0.013203975	6649382.895	0.013189561	6642123.724	0.013175161	6634872.477	0.013160778	6627629.147
bis(2-Ethylhexyl)phthalate	69699491.89	0.006559794	69695881.56	0.006559455	69692271.42	0.006559115	69688661.46	0.006558775	69685051.69
Carbazole	18920200	0.003130189	18918477.23	0.003129904	18916754.62	0.003129619	18915032.16	0.003129334	18913309.86
Carbon Disulfide f	26638950	0.150911877	26555892.25	0.150441348	26473093.47	0.149972286	26390552.85	0.149504686	26308269.58
Chlorobenzene	3840850	0.007893421	3836505.678	0.007884493	3832166.27	0.007875575	3827831.77	0.007866667	3823502.173
Chloroethane	1428.952672	1.15362E-05	1422.603457	1.1485E-05	1416.282454	1.14339E-05	1409.989537	1.13831E-05	1403.72458
Chloromethane	209950	0.00197478	208863.1353	0.001964557	207781.8971	0.001954387	206706.2562	0.00194427	205636.1837
Diethylphthalate	5391967.35	0.022385029	5379647.246	0.022333881	5367355.292	0.02228285	5355091.424	0.022231936	5342855.578
Dimethyl Disulfide g	1729000	0.010876346	1723013.958	0.01083869	1717048.641	0.010801165	1711103.977	0.01076377	1705179.894
Dimethylphthalate	6656650	0.04910214	6629625.533	0.048902796	6602710.778	0.048704262	6575905.292	0.048506534	6549208.63
Di-n-butylphthalate	11298421.43	0.003972328	11296235.17	0.003971559	11294049.33	0.003970791	11291863.92	0.003970022	11289678.92
Ethylbenzene	45682650	0.10118273	45626961.81	0.101059386	45571341.5	0.100936192	45515789	0.100813149	45460304.21
Hexachlorobutadiene	12103000	0.00200234	12101897.97	0.002002158	12100796.03	0.002001976	12099694.2	0.002001793	12098592.47
Hexachlorocyclopentadiene	6656650	0.00115286	6656015.497	0.001152751	6655381.055	0.001152641	6654746.673	0.001152531	6654112.352
Hexachloroethane	6656650	0.002068114	6655511.767	0.002067761	6654373.728	0.002067407	6653235.884	0.002067054	6652098.235
Indeno(1,2,3-cd)pyrene	6656650	0.00270355	6655162.041	0.002702945	6653674.414	0.002702341	6652187.119	0.002701737	6650700.158
Isophorone	5391319.62	0.030542276	5374509.991	0.030447048	5357752.773	0.030352117	5341047.802	0.030257482	5324394.916
Methyl Acetate g	284050	0.003002169	282397.6886	0.002984706	280754.9887	0.002967344	279121.8444	0.002950083	277498.1999
Methylene Chloride	48918350	0.436124628	48678319	0.433984665	48439465.77	0.431855203	48201784.55	0.42973619	47965269.56
Naphthalene	248716650	0.113923398	248653949.7	0.113894679	248591265.2	0.113865966	248528596.5	0.113837261	248465943.6
Nitrobenzene	6656650	0.021808798	6644647.037	0.021769473	6632665.718	0.02173022	6620706.003	0.021691037	6608767.852
N-Nitroso-di-n-propylamine	5389376.428	0.039754218	5367496.799	0.039592825	5345705.997	0.039432087	5324003.661	0.039272002	5302389.431
N-Nitrosodiphenylamine	5389376.428	0.00228489	5388118.887	0.002284357	5386861.64	0.002283824	5385604.686	0.002283291	5384348.025
Phenol	37793082.48	0.256627717	37651841.64	0.255668644	37511128.65	0.254713156	37370941.53	0.253761238	37231278.32
Pyrene	148162950	1.555238882	147306989.3	1.546254022	146455973.6	1.537321069	145609874.4	1.528439723	144768663.2
Styrene	485.7980352	2.86165E-07	485.6405376	2.86073E-07	485.4830911	2.8598E-07	485.3256956	2.85887E-07	485.1683511
Tetrachloroethene f	5631600	0.010009182	5626091.222	0.009999391	5620587.832	0.00998961	5615089.826	0.009979838	5609597.197
Toluene f	574497300	0.845283404	574032079.3	0.844598904	573567235.2	0.843914958	573102767.7	0.843231567	572638676.2
Trichloroethene f	42150550	0.163105615	42060781.16	0.162758245	41971203.49	0.162411616	41881816.61	0.162065725	41792620.09
Xylene (ortho) f	2272400	0.004405237	2269975.479	0.004400537	2267553.544	0.004395842	2265134.193	0.004391152	2262717.424
Xylene (total) f	2020460000	4.594189819	2017931484	4.588440395	2015406133	4.582698167	2012883942	4.576963124	2010364907

Appendix C Model Calculations	Leachate Concentration (mg/L) (5 Yr)	Remaining ICDF Contaminant Mass (mg) (5 Yr)	Leachate Concentration (mg/L) (6 Yr)	Remaining ICDF Contaminant Mass (mg) (6 Yr)	Leachate Concentration (mg/L) (7 Yr)	Remaining ICDF Contaminant Mass (mg) (7 Yr)	Leachate Concentration (mg/L) (8 Yr)	Remaining ICDF Contaminant Mass (mg) (8 Yr)
ORGANICS (Continued)								
bis(2-Chloroisopropyl)ether	0.01314641	6620393.724	0.013132058	6613166.2	0.013117722	6605946.567	0.013103401	6598734.815
bis(2-Ethylhexyl)phthalate	0.006558435	69681442.11	0.006558096	69677832.72	0.006557756	69674223.51	0.006557416	69670614.49
Carbazole	0.003129049	18911587.72	0.003128764	18909865.73	0.00312848	18908143.9	0.003128195	18906422.23
Carbon Disulfide f	0.149038545	26226242.87	0.148573857	26144471.9	0.148110617	26062955.89	0.147648822	25981694.04
Chlorobenzene	0.007857769	3819177.473	0.007848881	3814857.665	0.007840004	3810542.742	0.007831136	3806232.701
Chloroethane	1.13325E-05	1397.487461	1.12822E-05	1391.278055	1.12321E-05	1385.096238	1.11822E-05	1378.94189
Chloromethane	0.001934205	204571.6506	0.001924192	203512.6285	0.001914231	202459.0887	0.001904321	201411.0028
Diethylphthalate	0.022181139	5330647.689	0.022130457	5318467.694	0.022079891	5306315.529	0.022029441	5294191.131
Dimethyl Disulfide g	0.010726504	1699276.321	0.010689368	1693393.187	0.010652359	1687530.422	0.01061548	1681687.954
Dimethylphthalate	0.048309609	6522620.35	0.048113483	6496140.012	0.047918153	6469767.178	0.047723616	6443501.412
Di-n-butylphthalate	0.003969254	11287494.36	0.003968486	11285310.21	0.003967718	11283126.49	0.00396695	11280943.19
Ethylbenzene	0.100690255	45404887.06	0.100567511	45349537.47	0.100444917	45294255.35	0.100322473	45239040.62
Hexachlorobutadiene	0.002001611	12097490.84	0.002001429	12096389.31	0.002001247	12095287.88	0.002001064	12094186.54
Hexachlorocyclopentadiene	0.001152421	6653478.091	0.001152311	6652843.891	0.001152201	6652209.751	0.001152091	6651575.671
Hexachloroethane	0.0020667	6650960.78	0.002066347	6649823.519	0.002065993	6648686.453	0.00206564	6647549.582
Indeno(1,2,3-cd)pyrene	0.002701133	6649213.528	0.002700529	6647727.231	0.002699926	6646241.266	0.002699322	6644755.633
Isophorone	0.030163142	5307793.953	0.030069096	5291244.749	0.029975343	5274747.144	0.029881883	5258300.978
Methyl Acetate g	0.002932922	275884.0002	0.002915861	274279.1903	0.0028989	272683.7155	0.002882037	271097.5215
Methylene Chloride	0.427627574	47729915.11	0.425529305	47495715.48	0.423441331	47262665.02	0.421363603	47030758.08
Naphthalene	0.113808563	248403306.5	0.113779873	248340685.2	0.113751189	248278079.7	0.113722513	248215489.9
Nitrobenzene	0.021651924	6596851.229	0.021612883	6584956.092	0.021573911	6573082.405	0.02153501	6561230.127
N-Nitroso-di-n-propylamine	0.039112567	5280862.95	0.038953779	5259423.862	0.038795635	5238071.811	0.038638134	5216806.445
N-Nitrosodiphenylamine	0.002282758	5383091.658	0.002282226	5381835.583	0.002281693	5380579.802	0.002281161	5379324.314
Phenol	0.252812878	37092137.07	0.251868062	36953515.81	0.250926777	36815412.62	0.24998901	36677825.54
Pyrene	1.519609686	143932311.8	1.510830661	143100792.1	1.502102354	142274076.3	1.493424472	141452136.5
Styrene	2.85795E-07	485.0110577	2.85702E-07	484.8538152	2.85609E-07	484.6966237	2.85517E-07	484.5394832
Tetrachloroethene f	0.009970076	5604109.942	0.009960323	5598628.054	0.00995058	5593151.528	0.009940846	5587680.36
Toluene f	0.842548728	572174960.5	0.841866443	571711620.4	0.84118471	571248655.5	0.840503529	570786065.4
Trichloroethene f	0.16172057	41703613.53	0.161376151	41614796.54	0.161032465	41526168.7	0.160689511	41437729.61
Xylene (ortho) f	0.004386467	2260303.233	0.004381787	2257891.619	0.004377112	2255482.577	0.004372441	2253076.105
Xylene (total) f	4.571235258	2007849025	4.565514561	2005336291	4.559801023	2002826702	4.554094635	2000320254

Appendix C Model Calculations	Leachate Concentration (mg/L) (9 Yr)	Remaining ICDF Contaminant Mass (mg) (9 Yr)	Leachate Concentration (mg/L) (10 Yr)	Remaining ICDF Contaminant Mass (mg) (10 Yr)	Leachate Concentration (mg/L) (11 Yr)	Remaining ICDF Contaminant Mass (mg) (11 Yr)	Leachate Concentration (mg/L) (12 Yr)	Remaining ICDF Contaminant Mass (mg) (12 Yr)
ORGANICS (Continued)								
bis(2-Chloroisopropyl)ether	0.013089096	6591530.937	0.013074807	6584334.922	0.013060533	6577146.764	0.013046275	6569966.454
bis(2-Ethylhexyl)phthalate	0.006557077	69667005.65	0.006556737	69663397	0.006556397	69659788.54	0.006556058	69656180.27
Carbazole	0.00312791	18904700.72	0.003127625	18902979.36	0.00312734	18901258.15	0.003127055	18899537.11
Carbon Disulfide f	0.147188467	25900685.55	0.146729547	25819929.65	0.146272058	25739425.53	0.145815996	25659172.41
Chlorobenzene	0.007822278	3801927.534	0.007813431	3797627.236	0.007804593	3793331.803	0.007795765	3789041.228
Chloroethane	1.11325E-05	1372.814886	1.1083E-05	1366.715107	1.10338E-05	1360.64243	1.09847E-05	1354.596736
Chloromethane	0.001894463	200368.3426	0.001884656	199331.08	0.001874899	198299.1871	0.001865193	197272.6361
Diethylphthalate	0.021979106	5282094.435	0.021928886	5270025.38	0.02187878	5257983.901	0.02182879	5245969.935
Dimethyl Disulfide g	0.010578727	1675865.713	0.010542102	1670063.63	0.010505604	1664281.634	0.010469232	1658519.657
Dimethylphthalate	0.047529869	6417342.279	0.047336909	6391289.346	0.047144732	6365342.182	0.046953335	6339500.357
Di-n-butylphthalate	0.003966183	11278760.31	0.003965415	11276577.85	0.003964648	11274395.82	0.003963881	11272214.21
Ethylbenzene	0.100200177	45183893.2	0.100078031	45128813	0.099956034	45073799.95	0.099834185	45018853.96
Hexachlorobutadiene	0.002000882	12093085.31	0.0020007	12091984.18	0.002000518	12090883.15	0.002000336	12089782.22
Hexachlorocyclopentadiene	0.001151982	6650941.652	0.001151872	6650307.694	0.001151762	6649673.796	0.001151652	6649039.958
Hexachloroethane	0.002065287	6646412.904	0.002064934	6645276.422	0.002064581	6644140.133	0.002064228	6643004.039
Indeno(1,2,3-cd)pyrene	0.002698719	6643270.333	0.002698116	6641785.364	0.002697513	6640300.727	0.00269691	6638816.422
Isophorone	0.029788714	5241906.088	0.029695836	5225562.317	0.029603247	5209269.504	0.029510947	5193027.49
Methyl Acetate g	0.002865272	269520.5543	0.002848605	267952.7604	0.002832035	266394.0862	0.002815561	264844.4789
Methylene Chloride	0.419296069	46799989.05	0.41723868	46570352.36	0.415191387	46341842.43	0.413154139	46114453.76
Naphthalene	0.113693844	248152915.9	0.113665183	248090357.8	0.113636528	248027815.3	0.113607881	247965288.7
Nitrobenzene	0.021496179	6549399.221	0.021457418	6537589.648	0.021418727	6525801.37	0.021380106	6514034.347
N-Nitroso-di-n-propylamine	0.038481272	5195627.411	0.038325047	5174534.359	0.038169456	5153526.94	0.038014497	5132604.807
N-Nitrosodiphenylamine	0.002280628	5378069.119	0.002280096	5376814.217	0.002279564	5375559.607	0.002279032	5374305.291
Phenol	0.249054748	36540752.65	0.248123977	36404192.04	0.247196685	36268141.78	0.246272858	36132599.97
Pyrene	1.484796724	140634945.3	1.476218819	139822475	1.46769047	139014698.5	1.459211391	138211588.7
Styrene	2.85424E-07	484.3823937	2.85332E-07	484.225355	2.85239E-07	484.0683673	2.85147E-07	483.9114305
Tetrachloroethene f	0.009931122	5582214.543	0.009921408	5576754.073	0.009911703	5571298.945	0.009902007	5565849.152
Toluene f	0.8398229	570323850	0.839142822	569862008.9	0.838463294	569400541.7	0.837784317	568939448.3
Trichloroethene f	0.160347287	41349478.87	0.160005793	41261416.08	0.159665025	41173540.84	0.159324984	41085852.75
Xylene (ortho) f	0.004367776	2250672.201	0.004363116	2248270.862	0.004358461	2245872.085	0.004353811	2243475.867
Xylene (total) f	4.548395388	1997816942	4.542703274	1995316763	4.537018283	1992819713	4.531340406	1990325788

Appendix C Model Calculations	Leachate Concentration (mg/L) (13 Yr)	Remaining ICDF Contaminant Mass (mg) (13 Yr)	Leachate Concentration (mg/L) (14 Yr)	Remaining ICDF Contaminant Mass (mg) (14 Yr)	Leachate Concentration (mg/L) (15 Yr)	Remaining ICDF Contaminant Mass (mg) (15 Yr)
ORGANICS (Continued)						
bis(2-Chloroisopropyl)ether	0.013032032	6562793.982	0.013017805	6555629.34	0.013003593	6548472.52
bis(2-Ethylhexyl)phthalate	0.006555718	69652572.18	0.006555379	69648964.28	0.006555039	69645356.57
Carbazole	0.003126771	18897816.22	0.003126486	18896095.49	0.003126201	18894374.91
Carbon Disulfide f	0.145361355	25579169.52	0.144908132	25499416.07	0.144456322	25419911.28
Chlorobenzene	0.007786948	3784755.507	0.00777814	3780474.632	0.007769342	3776198.6
Chloroethane	1.09359E-05	1348.577905	1.08873E-05	1342.585816	1.0839E-05	1336.620353
Chloromethane	0.001855537	196251.3993	0.001845932	195235.4493	0.001836376	194224.7586
Diethylphthalate	0.021778913	5233983.42	0.02172915	5222024.294	0.021679501	5210092.492
Dimethyl Disulfide g	0.010432986	1652777.628	0.010396866	1647055.479	0.01036087	1641353.141
Dimethylphthalate	0.046762716	6313763.444	0.04657287	6288131.018	0.046383795	6262602.653
Di-n-butylphthalate	0.003963114	11270033.02	0.003962347	11267852.25	0.00396158	11265671.91
Ethylbenzene	0.099712485	44963974.95	0.099590933	44909162.84	0.099469529	44854417.55
Hexachlorobutadiene	0.002000154	12088681.39	0.001999971	12087580.67	0.001999789	12086480.04
Hexachlorocyclopentadiene	0.001151543	6648406.181	0.001151433	6647772.464	0.001151323	6647138.807
Hexachloroethane	0.002063875	6641868.139	0.002063522	6640732.433	0.002063169	6639596.922
Indeno(1,2,3-cd)pyrene	0.002696307	6637332.449	0.002695704	6635848.808	0.002695102	6634365.498
Isophorone	0.029418935	5176836.118	0.029327209	5160695.228	0.02923577	5144604.665
Methyl Acetate g	0.002799183	263303.8855	0.0027829	261772.2537	0.002766712	260249.5314
Methylene Chloride	0.411126888	45888180.82	0.409109583	45663018.16	0.407102177	45438960.32
Naphthalene	0.113579241	247902777.8	0.113550608	247840282.7	0.113521982	247777803.3
Nitrobenzene	0.021341555	6502288.542	0.021303072	6490563.917	0.02126466	6478860.433
N-Nitroso-di-n-propylamine	0.037860167	5111767.612	0.037706463	5091015.012	0.037553383	5070346.662
N-Nitrosodiphenylamine	0.002278501	5373051.267	0.002277969	5371797.535	0.002277437	5370544.096
Phenol	0.245352483	35997564.72	0.244435549	35863034.11	0.243522041	35729006.28
Pyrene	1.450781297	137413118.6	1.442399905	136619261.4	1.434066933	135829990.3
Styrene	2.85054E-07	483.7545445	2.84962E-07	483.5977094	2.84869E-07	483.4409252
Tetrachloroethene f	0.009892321	5560404.691	0.009882645	5554965.555	0.009872977	5549531.74
Toluene f	0.83710589	568478728.2	0.836428012	568018381.3	0.835750683	567558407.1
Trichloroethene f	0.158985666	40998351.42	0.158647071	40911036.43	0.158309197	40823907.4
Xylene (ortho) f	0.004349165	2241082.206	0.004344525	2238691.099	0.00433989	2236302.543
Xylene (total) f	4.525669636	1987834984	4.520005962	1985347297	4.514349375	1982862723

Appendix C Model Calculations	Elemental Formula	Kd (mL/g) or (L/kg)	Half-Life in years	Isotope Specific Activity (pCi/g)	mg/kg from non-rads	mg/kg from rads	Total Inventory (kg)	Initial Soil Water Concentration (mg/L)	Initial Soil Concentration (mg/kg)	Initial Contaminant Mass in Soil Water (mg)	Initial Contaminant Mass on Soil (mg)
ORGANICS (Unknown kd)											
2-Methylnaphthalene							2.42E+02	2.562636341	0	242463634.3	0
3-Methyl Butanal							1.06E-01	0.001117718	0	105752.8192	0
4,6-Dinitro-2-methylphenol							2.11E+01	0.223304856	0	21127971.25	0
4-Methyl-2-Pentanone							1.40E+01	0.148366011	0	14037638.39	0
4-Nitroaniline							1.29E+01	0.136211489	0	12887639.28	0
Aramite							5.42E-02	0.00057335	0	54247.44726	0
Butane,1,1,3,4-Tetrachloro-							3.74E+00	0.039495829	0	3736894.73	0
Decane, 3,4-Dimethyl							7.64E-02	0.000807989	0	76447.82112	0
Diacetone alcohol							2.05E+03	21.63156173	0	2046668498	0
Dibenzofuran							1.54E+02	1.623000576	0	153560070.8	0
Eicosane							1.34E+00	0.01417799	0	1341449.39	0
Ethyl cyanide							8.91E-03	9.41321E-05	0	8906.297312	0
Famphur							2.75E-02	0.000290954	0	27528.55533	0
Heptadecane, 2,6,10,15-Tetra							1.63E+00	0.017216131	0	1628902.831	0
Isobutyl alcohol							8.91E-03	9.41321E-05	0	8906.297312	0
Isopropyl Alcohol/2-propanol							1.01E+00	0.010622887	0	1005083.565	0
Kepone							4.70E+01	0.496665713	0	46991987.09	0
Mesityl oxide							4.01E+01	0.424326983	0	40147663.9	0
Octane,2,3,7-Trimethyl							7.64E-02	0.000807989	0	76447.82112	0
o-Toluenesulfonamide							2.40E+00	0.025317839	0	2395445.34	0
Phenol,2,6-Bis(1,1-Dimethyl)							1.92E+00	0.020254271	0	1916356.272	0
p-Toluenesulfonamide							2.40E+00	0.025317839	0	2395445.34	0
Tributylphosphate							1.72E+02	1.820097616	0	172208391.7	0
Undecane,4,6-Dimethyl-							7.64E-02	0.000807989	0	76447.82112	0

Appendix C Model Calculations	Remaining ICDF Contaminant Mass (mg) (0 Yr)	Leachate Concentration (mg/L) (1 Yr)	Remaining ICDF Contaminant Mass (mg) (1 Yr)	Leachate Concentration (mg/L) (2 Yr)	Remaining ICDF Contaminant Mass (mg) (2 Yr)	Leachate Concentration (mg/L) (3 Yr)	Remaining ICDF Contaminant Mass (mg) (3 Yr)	Leachate Concentration (mg/L) (4 Yr)	Remaining ICDF Contaminant Mass (mg) (4 Yr)
ORGANICS (Unknown kd)									
2-Methylnaphthalene	242463634.3	2.562636341	241053229.7	2.547729553	239651029.4	2.532909477	238256985.7	2.51817561	236871051.1
3-Methyl Butanal	105752.8192	0.001117718	105137.6579	0.001111216	104526.0749	0.001104753	103918.0494	0.001098326	103313.5609
4,6-Dinitro-2-methylphenol	21127971.25	0.223304856	21005070.4	0.222005898	20882884.46	0.220714495	20761409.27	0.219430605	20640640.7
4-Methyl-2-Pentanone	14037638.39	0.148366011	13955981.81	0.14750297	13874800.24	0.146644949	13794090.89	0.145791919	13713851.03
4-Nitroaniline	12887639.28	0.136211489	12812672.23	0.135419151	12738141.25	0.134631421	12664043.82	0.133848274	12590377.41
Aramite	54247.44726	0.00057335	53931.89129	0.000570015	53618.1709	0.000566699	53306.27542	0.000563402	52996.19422
Butane,1,1,3,4-Tetrachloro-	3736894.73	0.039495829	3715157.312	0.039266083	3693546.34	0.039037673	3672061.078	0.038810592	3650700.796
Decane, 3,4-Dimethyl	76447.82112	0.000807989	76003.12616	0.000803289	75561.01798	0.000798616	75121.48153	0.000793971	74684.50185
Diacetone alcohol	2046668498	21.63156173	2034763082	21.5057315	2022926919	21.38063323	2011159606	21.25626265	1999460744
Dibenzofuran	153560070.8	1.623000576	152666815.9	1.613559624	151778757.1	1.60417359	150895864.1	1.594842155	150018106.8
Eicosane	1341449.39	0.01417799	1333646.215	0.014095517	1325888.43	0.014013524	1318175.772	0.013932007	1310507.978
Ethyl cyanide	8906.297312	9.41321E-05	8854.489615	9.35845E-05	8802.983283	9.30401E-05	8751.776561	9.24989E-05	8700.867707
Famphur	27528.55533	0.000290954	27368.42245	0.000289261	27209.22106	0.000287579	27050.94573	0.000285906	26893.5911
Heptadecane, 2,6,10,15-Tetra	1628902.831	0.017216131	1619427.546	0.017115985	1610007.379	0.017016422	1600642.009	0.016917438	1591331.116
Isobutyl alcohol	8906.297312	9.41321E-05	8854.489615	9.35845E-05	8802.983283	9.30401E-05	8751.776561	9.24989E-05	8700.867707
Isopropyl Alcohol/2-propanol	1005083.565	0.010622887	999237.0202	0.010561093	993424.4848	0.01049966	987645.7607	0.010438584	981900.6514
Kepone	46991987.09	0.496665713	46718635.94	0.493776622	46446874.87	0.490904336	46176694.62	0.488048759	45908086.01
Mesityl oxide	40147663.9	0.424326983	39914126	0.421858684	39681946.58	0.419404744	39451117.74	0.416965077	39221631.63
Octane,2,3,7-Trimethyl	76447.82112	0.000807989	76003.12616	0.000803289	75561.01798	0.000798616	75121.48153	0.000793971	74684.50185
o-Toluenesulfonamide	2395445.34	0.025317839	2381511.098	0.025170566	2367657.91	0.025024149	2353885.307	0.024878585	2340192.818
Phenol,2,6-Bis(1,1-Dimethyl)	1916356.272	0.020254271	1905208.878	0.020136453	1894126.328	0.02001932	1883108.245	0.019902868	1872154.254
p-Toluenesulfonamide	2395445.34	0.025317839	2381511.098	0.025170566	2367657.91	0.025024149	2353885.307	0.024878585	2340192.818
Tributylphosphate	172208391.7	1.820097616	171206660	1.809510156	170210755.4	1.798984284	169220643.9	1.788519639	168236291.9
Undecane,4,6-Dimethyl-	76447.82112	0.000807989	76003.12616	0.000803289	75561.01798	0.000798616	75121.48153	0.000793971	74684.50185

Appendix C Model Calculations	Leachate Concentration (mg/L) (5 Yr)	Remaining ICDF Contaminant Mass (mg) (5 Yr)	Leachate Concentration (mg/L) (6 Yr)	Remaining ICDF Contaminant Mass (mg) (6 Yr)	Leachate Concentration (mg/L) (7 Yr)	Remaining ICDF Contaminant Mass (mg) (7 Yr)	Leachate Concentration (mg/L) (8 Yr)	Remaining ICDF Contaminant Mass (mg) (8 Yr)
ORGANICS (Unknown kd)								
2-Methylnaphthalene	2.503527448	235493178.5	2.488964495	234123320.8	2.474486254	232761431.7	2.460092233	231407464.5
3-Methyl Butanal	0.001091937	102712.5886	0.001085586	102115.1122	0.001079271	101521.1113	0.001072993	100930.5657
4,6-Dinitro-2-methylphenol	0.218154183	20520574.64	0.216885186	20401207	0.21562357	20282533.71	0.214369293	20164550.75
4-Methyl-2-Pentanone	0.144943852	13634077.92	0.144100717	13554768.84	0.143262487	13475921.11	0.142429133	13397532.03
4-Nitroaniline	0.133069682	12517139.51	0.132295619	12444327.64	0.131526059	12371939.32	0.130760975	12299972.07
Aramite	0.000560125	52687.91675	0.000556867	52381.43253	0.000553628	52076.73112	0.000550407	51773.80215
Butane,1,1,3,4-Tetrachloro-	0.038584832	3629464.766	0.038360385	3608352.265	0.038137243	3587362.575	0.0379154	3566494.981
Decane, 3,4-Dimethyl	0.000789352	74250.06407	0.000784761	73818.15341	0.000780196	73388.75515	0.000775657	72961.8547
Diacetone alcohol	21.13261553	1987829933	21.00968766	1976266779	20.88747486	1964770887	20.76597297	1953341867
Dibenzofuran	1.585565	149145455.4	1.57634181	148277880.3	1.567172271	147415351.7	1.558056072	146557840.5
Eicosane	0.013850965	1302884.788	0.013770395	1295305.941	0.013690293	1287771.181	0.013610656	1280280.25
Ethyl cyanide	9.19608E-05	8650.254989	9.14259E-05	8599.936684	9.08941E-05	8549.911079	9.03654E-05	8500.176472
Famphur	0.000284243	26737.15178	0.000282589	26581.62248	0.000280945	26426.99788	0.000279311	26273.27273
Heptadecane, 2,6,10,15-Tetra	0.016819029	1582074.385	0.016721193	1572871.5	0.016623927	1563722.148	0.016527226	1554626.017
Isobutyl alcohol	9.19608E-05	8650.254989	9.14259E-05	8599.936684	9.08941E-05	8549.911079	9.03654E-05	8500.176472
Isopropyl Alcohol/2-propanol	0.010377863	976188.9612	0.010317495	970510.4957	0.010257478	964865.0618	0.010197811	959252.4671
Kepone	0.485209792	45641039.88	0.482387339	45375547.15	0.479581305	45111598.79	0.476791593	44849185.81
Mesityl oxide	0.414539602	38993480.43	0.412128236	38766656.38	0.409730897	38541151.76	0.407347504	38316958.9
Octane,2,3,7-Trimethyl	0.000789352	74250.06407	0.000784761	73818.15341	0.000780196	73388.75515	0.000775657	72961.8547
o-Toluenesulfonamide	0.024733866	2326579.978	0.02458999	2313046.324	0.024446951	2299591.394	0.024304744	2286214.732
Phenol,2,6-Bis(1,1-Dimethyl)	0.019787093	1861263.982	0.019671992	1850437.059	0.019557561	1839673.115	0.019443795	1828971.785
p-Toluenesulfonamide	0.024733866	2326579.978	0.02458999	2313046.324	0.024446951	2299591.394	0.024304744	2286214.732
Tributylphosphate	1.778115868	167257665.8	1.767772615	166284732.4	1.757489528	165317458.5	1.747266258	164355811.2
Undecane,4,6-Dimethyl-	0.000789352	74250.06407	0.000784761	73818.15341	0.000780196	73388.75515	0.000775657	72961.8547

Appendix C Model Calculations	Leachate Concentration (mg/L) (9 Yr)	Remaining ICDF Contaminant Mass (mg) (9 Yr)	Leachate Concentration (mg/L) (10 Yr)	Remaining ICDF Contaminant Mass (mg) (10 Yr)	Leachate Concentration (mg/L) (11 Yr)	Remaining ICDF Contaminant Mass (mg) (11 Yr)	Leachate Concentration (mg/L) (12 Yr)	Remaining ICDF Contaminant Mass (mg) (12 Yr)
ORGANICS (Unknown kd)								
2-Methylnaphthalene	2.445781941	230061373.4	2.431554892	228723112.5	2.417410602	227392636.2	2.403348588	226069899.2
3-Methyl Butanal	0.001066751	100343.4552	0.001060546	99759.75999	0.001054377	99179.4601	0.001048243	98602.53579
4,6-Dinitro-2-methylphenol	0.213122313	20047254.09	0.211882586	19930639.74	0.210650071	19814703.73	0.209424725	19699442.13
4-Methyl-2-Pentanone	0.141600626	13319598.94	0.140776939	13242119.19	0.139958043	13165090.13	0.139143911	13088509.15
4-Nitroaniline	0.130000342	12228423.46	0.129244134	12157291.04	0.128492324	12086572.4	0.127744887	12016265.13
Aramite	0.000547205	51472.6353	0.000544022	51173.22034	0.000540858	50875.54707	0.000537712	50579.60535
Butane,1,1,3,4-Tetrachloro-	0.037694847	3545748.774	0.037475577	3525123.247	0.037257583	3504617.698	0.037040856	3484231.429
Decane, 3,4-Dimethyl	0.000771145	72537.43751	0.00076666	72115.48915	0.0007622	71695.99525	0.000757766	71278.94154
Diacetone alcohol	20.64517786	1941979328	20.5250854	1930682886	20.40569152	1919452154	20.28699215	1908286752
Dibenzofuran	1.5489929	145705317.4	1.53998245	144857753.4	1.531024412	144015119.7	1.522118484	143177387.5
Eicosane	0.013531484	1272832.893	0.013452771	1265428.858	0.013374517	1258067.891	0.013296718	1250749.744
Ethyl cyanide	8.98397E-05	8450.731169	8.93171E-05	8401.573489	8.87976E-05	8352.701757	8.8281E-05	8304.114311
Famphur	0.000277686	26120.4418	0.000276071	25968.49987	0.000274465	25817.44179	0.000272869	25667.26242
Heptadecane, 2,6,10,15-Tetra	0.016431087	1545582.799	0.016335508	1536592.184	0.016240485	1527653.868	0.016146014	1518767.546
Isobutyl alcohol	8.98397E-05	8450.731169	8.93171E-05	8401.573489	8.87976E-05	8352.701757	8.8281E-05	8304.114311
Isopropyl Alcohol/2-propanol	0.01013849	953672.5208	0.010079515	948125.0329	0.010020883	942609.8146	0.009962592	937126.6781
Kepone	0.474018109	44588299.28	0.471260758	44328930.32	0.468519447	44071070.1	0.465794081	43814709.85
Mesityl oxide	0.404977974	38094070.16	0.402622228	37872477.96	0.400280185	37652174.75	0.397951765	37433153.04
Octane,2,3,7-Trimethyl	0.000771145	72537.43751	0.00076666	72115.48915	0.0007622	71695.99525	0.000757766	71278.94154
o-Toluenesulfonamide	0.024163364	2272915.881	0.024022806	2259694.389	0.023883066	2246549.806	0.023744139	2233481.685
Phenol,2,6-Bis(1,1-Dimethyl)	0.019330691	1818332.705	0.019218245	1807755.511	0.019106453	1797239.845	0.018995311	1786785.348
p-Toluenesulfonamide	0.024163364	2272915.881	0.024022806	2259694.389	0.023883066	2246549.806	0.023744139	2233481.685
Tributylphosphate	1.737102456	163399757.8	1.726997777	162449265.7	1.716951876	161504302.6	1.706964412	160564836.3
Undecane,4,6-Dimethyl-	0.000771145	72537.43751	0.00076666	72115.48915	0.0007622	71695.99525	0.000757766	71278.94154

Appendix C Model Calculations	Leachate Concentration (mg/L) (13 Yr)	Remaining ICDF Contaminant Mass (mg) (13 Yr)	Leachate Concentration (mg/L) (14 Yr)	Remaining ICDF Contaminant Mass (mg) (14 Yr)	Leachate Concentration (mg/L) (15 Yr)	Remaining ICDF Contaminant Mass (mg) (15 Yr)
ORGANICS (Unknown kd)						
2-Methylnaphthalene	2.389368372	224754856.6	2.37546948	223447463.5	2.361651436	222147675.5
3-Methyl Butanal	0.001042146	98028.96744	0.001036084	97458.73552	0.001030057	96891.82063
4,6-Dinitro-2-methylphenol	0.208206507	19584850.99	0.206995375	19470926.43	0.205791288	19357664.56
4-Methyl-2-Pentanone	0.138334515	13012373.63	0.137529826	12936681	0.136729819	12861428.67
4-Nitroaniline	0.127001799	11946366.83	0.126263033	11876875.13	0.125528564	11807787.66
Aramite	0.000534584	50285.38512	0.000531474	49992.87636	0.000528383	49702.06912
Butane,1,1,3,4-Tetrachloro-	0.036825391	3463963.747	0.036611178	3443813.961	0.036398212	3423781.386
Decane, 3,4-Dimethyl	0.000753358	70864.31381	0.000748976	70452.09797	0.000744619	70042.27997
Diacetone alcohol	20.16898325	1897186298	20.05166081	1886150415	19.93502082	1875178728
Dibenzofuran	1.513264361	142344528.5	1.504461742	141516514.1	1.495710327	140693316.2
Eicosane	0.013219371	1243474.165	0.013142474	1236240.909	0.013066025	1229049.728
Ethyl cyanide	8.77675E-05	8255.809497	8.7257E-05	8207.785671	8.67494E-05	8160.041198
Famphur	0.000271281	25517.95663	0.000269703	25369.51935	0.000268134	25221.94552
Heptadecane, 2,6,10,15-Tetra	0.016052093	1509932.915	0.015958719	1501149.675	0.015865887	1492417.527
Isobutyl alcohol	8.77675E-05	8255.809497	8.7257E-05	8207.785671	8.67494E-05	8160.041198
Isopropyl Alcohol/2-propanol	0.009904639	931675.4369	0.009847024	926255.9055	0.009789745	920867.8993
Kepone	0.46308457	43559840.83	0.460390819	43306454.39	0.457712738	43054541.88
Mesityl oxide	0.395636891	37215405.38	0.393335481	36998924.35	0.391047459	36783702.58
Octane,2,3,7-Trimethyl	0.000753358	70864.31381	0.000748976	70452.09797	0.000744619	70042.27997
o-Toluenesulfonamide	0.02360602	2220489.581	0.023468704	2207573.052	0.023332187	2194731.658
Phenol,2,6-Bis(1,1-Dimethyl)	0.018884816	1776391.665	0.018774963	1766058.441	0.01866575	1755785.326
p-Toluenesulfonamide	0.02360602	2220489.581	0.023468704	2207573.052	0.023332187	2194731.658
Tributylphosphate	1.697035045	159630834.9	1.687163437	158702266.5	1.677349252	157779099.6
Undecane,4,6-Dimethyl-	0.000753358	70864.31381	0.000748976	70452.09797	0.000744619	70042.27997

Appendix C Model Calculations	Elemental Formula	Kd (mL/g) or (L/kg)	Half-Life in years	Isotope Specific Activity (pCi/g)	mg/kg from non-rads	mg/kg from rads	Total Inventory (kg)	Initial Soil Water Concentration (mg/L)	Initial Soil Concentration (mg/kg)	Initial Contaminant Mass in Soil Water (mg)	Initial Contaminant Mass on Soil (mg)
RADIONUCLIDES											
C 14	C 14	5	5730	4.46023E+12		8.37871E-12	6.0538E-09	2.0047E-12	1.00235E-11	0.000189674	0.005864102
Cd113m	Cd113m	6	14.6	2.16875E+14		6.05622E-09	4.3757E-06	1.21385E-09	7.28312E-09	0.114848581	4.260882367
H 3	H 3	0	12.3	9.69648E+15		4.14296E-09	2.9934E-06	3.16374E-08	0	2.993368268	0
I129	I129	0	15700000	176665185.4	7.59385E+11	0.005949247	4.2984E+00	0.045430932	0	4298444.058	0
Kr81	Kr81	0	210000	21034685479		2.04314E-13	1.4762E-10	1.56023E-12	0	0.000147621	0
Kr85	Kr85	0	10.73	3.92303E+14		2.39392E-06	1.7297E-03	1.8281E-05	0	1729.653541	0
Np236	Np236	8	115000	13183492999		4.26331E-12	3.0803E-09	6.45107E-13	5.16086E-12	6.10367E-05	0.003019284
Np237	Np237	8	2140000	705469458.6	3.75871E+11	0.000737414	5.3280E-01	0.000111583	0.00089266	10557.37428	522238.1143
Sr 90	Sr 90	12	29.1	1.36617E+14		0.000135559	9.7944E-02	1.37658E-05	0.000165189	1302.44712	96641.57628
Tc 98	Tc 98	0.2	4200000	869290573.4		1.64811E-10	1.1908E-07	5.62696E-10	1.12539E-10	0.053239428	0.065839426
Tc 99	Tc 99	0.2	213000	16967800066		0.000274935	1.9865E-01	0.000938681	0.000187736	88813.24355	109832.3779
U232	U232	6	69.2	2.22867E+13		1.94501E-11	1.4053E-08	3.8984E-12	2.33904E-11	0.000368847	0.013684209
U233	U233	6	159000	9658001997		2.14905E-09	1.5527E-06	4.30736E-10	2.58442E-09	0.040754089	1.511976714
U234	U234	6	246000	6215690362		0.000786046	5.6793E-01	0.000157548	0.000945288	14906.38402	553026.847
U235	U235	6	704000000	2162717.602		0.040563614	2.9308E+01	0.008130201	0.048781206	769238.3249	28538741.85
U236	U236	6	23400000	64790670.72		0.002528763	1.8271E+00	0.000506842	0.003041053	47954.83697	1779124.452
U238	U238	6	4470000000	336322.4484		4.762515583	3.4410E+03	0.954555207	5.727331239	90315165.22	3350692630

Appendix C Model Calculations	Remaining ICDF Contaminant Mass (mg) (0 Yr)	Leachate Concentration (mg/L) (1 Yr)	Remaining ICDF Contaminant Mass (mg) (1 Yr)	Leachate Concentration (mg/L) (2 Yr)	Remaining ICDF Contaminant Mass (mg) (2 Yr)	Leachate Concentration (mg/L) (3 Yr)	Remaining ICDF Contaminant Mass (mg) (3 Yr)	Leachate Concentration (mg/L) (4 Yr)	Remaining ICDF Contaminant Mass (mg) (4 Yr)
RADIONUCLIDES									
C 14	0.006053776	2.00446E-12	0.006051941	2.00385E-12	0.006050106	2.00324E-12	0.006048272	2.00263E-12	0.006046438
Cd113m	4.375730948	1.15757E-09	4.172206603	1.10373E-09	3.978148599	1.05239E-09	3.793116636	1.00344E-09	3.616690894
H 3	2.993368268	2.99038E-08	2.81288846	2.81008E-08	2.64329036	2.64065E-08	2.483917875	2.48144E-08	2.334154471
I129	4298444.058	0.04543093	4273439.933	0.045166658	4248581.258	0.044903923	4223867.187	0.044642716	4199296.877
Kr81	0.000147621	1.56022E-12	0.000146762	1.55114E-12	0.000145907	1.54211E-12	0.000145058	1.53314E-12	0.000144214
Kr85	1729.653541	1.71374E-05	1612.020197	1.59719E-05	1502.38707	1.48856E-05	1400.210067	1.38733E-05	1304.982099
Np236	0.003080321	6.45103E-13	0.003079947	6.45025E-13	0.003079574	6.44947E-13	0.0030792	6.44868E-13	0.003078827
Np237	532795.4886	0.000111583	532733.904	0.00011157	532672.3266	0.000111557	532610.7563	0.000111544	532549.1932
Sr 90	97944.0234	1.34417E-05	95631.21452	1.31243E-05	93373.01935	1.28144E-05	91168.14824	1.25118E-05	89015.34203
Tc 98	0.119078855	5.62696E-10	0.118769143	5.61232E-10	0.118460236	5.59773E-10	0.118152133	5.58317E-10	0.117844832
Tc 99	198645.6214	0.000938678	198128.3524	0.000936234	197612.4303	0.000933796	197097.8516	0.000931364	196584.6129
U232	0.014053056	3.85954E-12	0.01391087	3.82049E-12	0.013770124	3.78184E-12	0.013630802	3.74358E-12	0.013492889
U233	1.552730803	4.30735E-10	1.55248697	4.30667E-10	1.552243175	4.30599E-10	1.551999418	4.30532E-10	1.551755699
U234	567933.231	0.000157547	567844.921	0.000157523	567756.6247	0.000157498	567668.3421	0.000157474	567580.0732
U235	29307980.18	0.008130201	29303505.51	0.00812896	29299031.53	0.008127719	29294558.22	0.008126478	29290085.61
U236	1827079.289	0.000506842	1826800.282	0.000506765	1826521.319	0.000506687	1826242.398	0.00050661	1825963.52
U238	3441007795	0.954555206	3440482433	0.954409468	3439957152	0.954263752	3439431951	0.954118058	3438906830

Appendix C Model Calculations	Leachate Concentration (mg/L) (5 Yr)	Remaining ICDF Contaminant Mass (mg) (5 Yr)	Leachate Concentration (mg/L) (6 Yr)	Remaining ICDF Contaminant Mass (mg) (6 Yr)	Leachate Concentration (mg/L) (7 Yr)	Remaining ICDF Contaminant Mass (mg) (7 Yr)	Leachate Concentration (mg/L) (8 Yr)	Remaining ICDF Contaminant Mass (mg) (8 Yr)
RADIONUCLIDES								
C 14	2.00203E-12	0.006044605	2.00142E-12	0.006042772	2.00081E-12	0.00604094	2.00021E-12	0.006039108
Cd113m	9.56772E-10	3.44847108	9.1227E-10	3.28807552	8.69839E-10	3.13514029	8.29381E-10	2.989318396
H 3	2.33183E-08	2.193420784	2.19123E-08	2.061172385	2.05912E-08	1.936897667	1.93496E-08	1.820115872
I129	0.044383028	4174869.494	0.044124851	4150584.205	0.043868176	4126440.183	0.043612994	4102436.609
Kr81	1.52422E-12	0.000143375	1.51534E-12	0.00014254	1.50652E-12	0.000141711	1.49776E-12	0.000140886
Kr85	1.29297E-05	1216.230564	1.20504E-05	1133.515	1.12309E-05	1056.424903	1.0467E-05	984.5776855
Np236	6.4479E-13	0.003078453	6.44712E-13	0.00307808	6.44634E-13	0.003077706	6.44556E-13	0.003077333
Np237	0.000111531	532487.6371	0.000111518	532426.0882	0.000111505	532364.5464	0.000111492	532303.0117
Sr 90	1.22164E-05	86913.37127	1.19279E-05	84861.03557	1.16463E-05	82857.16286	1.13712E-05	80900.60875
Tc 98	5.56865E-10	0.117538329	5.55416E-10	0.117232624	5.53972E-10	0.116927714	5.52531E-10	0.116623597
Tc 99	0.000928939	196072.7107	0.00092652	195562.1415	0.000924107	195052.9017	0.000921701	194544.9881
U232	3.7057E-12	0.013356371	3.66821E-12	0.013221235	3.63109E-12	0.013087466	3.59435E-12	0.012955051
U233	4.30464E-10	1.551512019	4.30396E-10	1.551268377	4.30329E-10	1.551024773	4.30261E-10	1.550781208
U234	0.00015745	567491.8181	0.000157425	567403.5767	0.000157401	567315.349	0.000157376	567227.135
U235	0.008125237	29285613.67	0.008123996	29281142.42	0.008122756	29276671.85	0.008121516	29272201.96
U236	0.000506533	1825684.684	0.000506455	1825405.891	0.000506378	1825127.14	0.000506301	1824848.432
U238	0.953972387	3438381789	0.953826738	3437856829	0.95368111	3437331948	0.953535506	3436807148

Appendix C Model Calculations	Leachate Concentration (mg/L) (9 Yr)	Remaining ICDF Contaminant Mass (mg) (9 Yr)	Leachate Concentration (mg/L) (10 Yr)	Remaining ICDF Contaminant Mass (mg) (10 Yr)	Leachate Concentration (mg/L) (11 Yr)	Remaining ICDF Contaminant Mass (mg) (11 Yr)	Leachate Concentration (mg/L) (12 Yr)	Remaining ICDF Contaminant Mass (mg) (12 Yr)
RADIONUCLIDES								
C 14	1.9996E-12	0.006037277	1.99899E-12	0.006035447	1.99839E-12	0.006033617	1.99778E-12	0.006031788
Cd113m	7.90804E-10	2.850278982	7.54022E-10	2.71770658	7.18951E-10	2.591300396	6.85511E-10	2.470773627
H 3	1.8183E-08	1.710375227	1.70867E-08	1.607251199	1.60565E-08	1.51034485	1.50884E-08	1.419281298
I129	0.043359297	4078572.663	0.043107075	4054847.534	0.04285632	4031260.415	0.042607024	4007810.502
Kr81	1.48904E-12	0.000140066	1.48037E-12	0.000139251	1.47176E-12	0.00013844	1.46319E-12	0.000137634
Kr85	9.75518E-06	917.6167812	9.09173E-06	855.2098727	8.47341E-06	797.0472439	7.89713E-06	742.8402422
Np236	6.44477E-13	0.00307696	6.44399E-13	0.003076587	6.44321E-13	0.003076214	6.44243E-13	0.00307584
Np237	0.000111479	532241.4841	0.000111466	532179.9636	0.000111454	532118.4502	0.000111441	532056.9439
Sr 90	1.11027E-05	78990.25589	1.08406E-05	77125.01329	1.05846E-05	75303.81575	1.03346E-05	73525.62319
Tc 98	5.51094E-10	0.116320271	5.4966E-10	0.116017734	5.48231E-10	0.115715983	5.46805E-10	0.115415018
Tc 99	0.000919301	194038.397	0.000916907	193533.125	0.00091452	193029.1688	0.000912138	192526.5249
U232	3.55799E-12	0.012823975	3.52199E-12	0.012694225	3.48635E-12	0.012565788	3.45108E-12	0.012438651
U233	4.30194E-10	1.55053768	4.30126E-10	1.550294191	4.30059E-10	1.550050741	4.29991E-10	1.549807328
U234	0.000157352	567138.9348	0.000157327	567050.7482	0.000157303	566962.5754	0.000157278	566874.4163
U235	0.008120276	29267732.75	0.008119036	29263264.23	0.008117797	29258796.39	0.008116557	29254329.23
U236	0.000506223	1824569.767	0.000506146	1824291.144	0.000506069	1824012.563	0.000505991	1823734.026
U238	0.953389923	3436282428	0.953244363	3435757788	0.953098825	3435233228	0.952953309	3434708748

Appendix C Model Calculations	Leachate Concentration (mg/L) (13 Yr)	Remaining ICDF Contaminant Mass (mg) (13 Yr)	Leachate Concentration (mg/L) (14 Yr)	Remaining ICDF Contaminant Mass (mg) (14 Yr)	Leachate Concentration (mg/L) (15 Yr)	Remaining ICDF Contaminant Mass (mg) (15 Yr)
RADIONUCLIDES						
C 14	1.99718E-12	0.006029959	1.99657E-12	0.00602813	1.99597E-12	0.006026303
Cd113m	6.53627E-10	2.355852808	6.23225E-10	2.246277195	5.94238E-10	2.141798172
H 3	1.41786E-08	1.33370826	1.33238E-08	1.253294695	1.25204E-08	1.177729524
I129	0.042359179	3984496.999	0.042112775	3961319.11	0.041867804	3938276.047
Kr81	1.45467E-12	0.000136833	1.44621E-12	0.000136037	1.43779E-12	0.000135245
Kr85	7.36005E-06	692.3198464	6.8595E-06	645.2353312	6.39298E-06	601.3530231
Np236	6.44165E-13	0.003075467	6.44087E-13	0.003075094	6.44008E-13	0.003074721
Np237	0.000111428	531995.4448	0.000111415	531933.9527	0.000111402	531872.4678
Sr 90	1.00906E-05	71789.42013	9.85232E-06	70094.21503	9.61967E-06	68439.0398
Tc 98	5.45383E-10	0.115114835	5.43964E-10	0.114815433	5.42549E-10	0.11451681
Tc 99	0.000909763	192025.1899	0.000907394	191525.1603	0.000905031	191026.4328
U232	3.41616E-12	0.0123128	3.3816E-12	0.012188223	3.34738E-12	0.012064905
U233	4.29924E-10	1.549563954	4.29856E-10	1.549320618	4.29789E-10	1.54907732
U234	0.000157254	566786.2709	0.000157229	566698.1392	0.000157205	566610.0212
U235	0.008115318	29249862.75	0.008114079	29245396.96	0.00811284	29240931.85
U236	0.000505914	1823455.53	0.000505837	1823177.077	0.00050576	1822898.667
U238	0.952807815	3434184349	0.952662343	3433660029	0.952516894	3433135789

Appendix C Model Calculations (2)	Elemental Formula	Kd (mL/g) or (L/kg)	Half-Life in years	Isotope Specific Activity (pCi/g)	mg/kg from non-rads	mg/kg from rads	Total Inventory (kg)	Initial Soil Water Concentration (mg/L)	Initial Soil Concentration (mg/kg)	Initial Contaminant Mass in Soil Water (mg)	Initial Contaminant Mass on Soil (mg)
INORGANICS											
Arsenic	As	3						1.533640529	4.600921588	145105277.1	2691702891
Astitine	At	1						0	0	0	0
Boron	B	5						40.65348681	203.267434	3846426432	1.18919E+11
Cadmium	Cd	6						0	0	0	0
Carbon (non-Rad)								0.491128312	0	46468066.29	0
Calcium	Ca	5						4.860929877	24.30464938	459916495.1	14219084972
Chlorine	Cl	0						16.59564153	0	1570195308	0
Cobalt	Co	10						0	0	0	0
Copper	Cu	20						0	0	0	0
Cyanide	CN	0						0	0	0	0
Fluorine	F	0						44.34573947	0	4195768626	0
Krypton	Kr	0						0	0	0	0
Magnesium	Mg	5						0.250312405	1.251562025	23683288.36	732208331.9
Molybdenum	Mo	10						0	0	0	0
Nitrogen	N	0						0	0	0	0
	NO3	0						30.3986	0	2876161130	0
	NO2	0						0	0	0	0
Phosphorous	P	5						6.803459636	34.01729818	643708794.3	19901330223
Potassium	K	15						0.089506699	1.342600481	8468669.205	785469068.7
Radon	Rn	0						0	0	0	0
Selenium	Se	4						0.073516483	0.294065932	6955756.206	172039036.8
Strontium	Sr	12						0	0	0	0
Sulfur	S	14									
	S(-2)	14						0	0	0	0
	SO4	14						373.0371377	5222.519928	35294879217	3.05536E+12
Vanadium	V	6						3.47714796	20.86288776	328990078.7	12205531919
Xenon	Xe	0						0	0	0	0
Zinc	Zn	16						0.031270669	0.5003307	2958671.848	292711268.2

Appendix C Model Calculations (2)	Remaining ICDF Contaminant Mass (mg) (0 Yr)	Leachate Concentration (mg/L) (1 Yr)	Remaining ICDF Contaminant Mass (mg) (1 Yr)	Leachate Concentration (mg/L) (2 Yr)	Remaining ICDF Contaminant Mass (mg) (2 Yr)	Leachate Concentration (mg/L) (3 Yr)	Remaining ICDF Contaminant Mass (mg) (3 Yr)	Leachate Concentration (mg/L) (4 Yr)
INORGANICS								
Arsenic	2836808168	1.533640529	2835964095	1.533184205	2835120272	1.532728016	2834276701	1.532271963
Astitine	0	0	0	0	0	0	0	0
Boron	1.22765E+11	40.65348681	1.22743E+11	40.64607751	1.2272E+11	40.63866955	1.22698E+11	40.63126295
Cadmium	0	0	0	0	0	0	0	0
Carbon (non-Rad)	46468066.29	0.491128312	46197762.77	0.488271431	45929031.61	0.485431169	45661863.64	0.482607429
Calcium	14679001468	4.860929877	14676326145	4.860043948	14673651311	4.85915818	14670976964	4.858272574
Chlorine	1570195308	16.59564153	1561061523	16.49910512	1551980869	16.40313026	1542953038	16.30771368
Cobalt	0	0	0	0	0	0	0	0
Copper	0	0	0	0	0	0	0	0
Cyanide	0	0	0	0	0	0	0	0
Fluorine	4195768626	44.34573947	4171361950	44.08778147	4147097248	43.83132401	4122973692	43.57635835
Krypton	0	0	0	0	0	0	0	0
Magnesium	755891620.2	0.250312405	755753855.2	0.250266784	755616115.2	0.250221172	755478400.4	0.250175568
Molybdenum	0	0	0	0	0	0	0	0
Nitrogen	0	0	0	0	0	0	0	0
	2876161130	30.3986	2859430576	30.22177215	2842797344	30.04597289	2826260867	29.87119626
	0	0	0	0	0	0	0	0
Phosphorous	20545039017	6.803459636	20541294580	6.802219671	20537550825	6.800979932	20533807753	6.799740419
Potassium	793937737.9	0.089506699	793888475.9	0.089501145	793839216.9	0.089495592	793789961	0.089490039
Radon	0	0	0	0	0	0	0	0
Selenium	178994793	0.073516483	178954331.6	0.073499865	178913879.3	0.07348325	178873436.1	0.073466639
Strontium	0	0	0	0	0	0	0	0
Sulfur								
	0	0	0	0	0	0	0	0
	3.09065E+12	373.0371377	3.09045E+12	373.0123572	3.09024E+12	372.9875783	3.09004E+12	372.9628011
Vanadium	12534521997	3.47714796	12532608271	3.476617081	12530694836	3.476086284	12528781694	3.475555567
Xenon	0	0	0	0	0	0	0	0
Zinc	295669940	0.031270669	295652729.5	0.031268849	295635520	0.031267028	295618311.5	0.031265208

Appendix C Model Calculations (2)	Remaining ICDF Contaminant Mass (mg) (4 Yr)	Leachate Concentration (mg/L) (5 Yr)	Remaining ICDF Contaminant Mass (mg) (5 Yr)	Leachate Concentration (mg/L) (6 Yr)	Remaining ICDF Contaminant Mass (mg) (6 Yr)	Leachate Concentration (mg/L) (7 Yr)	Remaining ICDF Contaminant Mass (mg) (7 Yr)	Leachate Concentration (mg/L) (8 Yr)	Remaining ICDF Contaminant Mass (mg) (8 Yr)
INORGANICS									
Arsenic	2833433381	1.531816045	2832590311	1.531360264	2831747493	1.530904617	2830904925	1.530449107	2830062608
Astitine	0	0	0	0	0	0	0	0	0
Boron	1.22676E+11	40.6238577	1.22653E+11	40.61645379	1.22631E+11	40.60905124	1.22609E+11	40.60165004	1.22586E+11
Cadmium	0	0	0	0	0	0	0	0	0
Carbon (non-Rad)	45396249.78	0.479800114	45132180.99	0.47700913	44869648.29	0.47423438	44608642.72	0.471475771	44349155.43
Calcium	14668303104	4.85738713	14665629732	4.856501846	14662956847	4.855616724	14660284449	4.854731764	14657612538
Chlorine	1533977721	16.21285214	1525054613	16.11854241	1516183410	16.02478127	1507363811	15.93156554	1498595516
Cobalt	0	0	0	0	0	0	0	0	0
Copper	0	0	0	0	0	0	0	0	0
Cyanide	0	0	0	0	0	0	0	0	0
Fluorine	4098990463	43.32287583	4075146743	43.0708678	4051441722	42.8203257	4027874592	42.57124099	4004444552
Krypton	0	0	0	0	0	0	0	0	0
Magnesium	755340710.6	0.250129972	755203045.9	0.250084385	755065406.4	0.250038806	754927791.9	0.249993235	754790202.5
Molybdenum	0	0	0	0	0	0	0	0	0
Nitrogen	0	0	0	0	0	0	0	0	0
	2809820582	29.6974363	2793475930	29.5246871	2777226354	29.35294277	2761071301	29.18219747	2745010222
	0	0	0	0	0	0	0	0	0
Phosphorous	20530065363	6.798501132	20526323655	6.797262071	20522582629	6.796023236	20518842284	6.794784626	20515102622
Potassium	793740708.2	0.089484486	793691458.4	0.089478934	793642211.6	0.089473382	793592967.9	0.08946783	793543727.3
Radon	0	0	0	0	0	0	0	0	0
Selenium	178833002.1	0.073450032	178792577.2	0.073433429	178752161.5	0.07341683	178711754.9	0.073400234	178671357.4
Strontium	0	0	0	0	0	0	0	0	0
Sulfur									
	0	0	0	0	0	0	0	0	0
	3.08983E+12	372.9380255	3.08963E+12	372.9132516	3.08942E+12	372.8884793	3.08922E+12	372.8637086	3.08901E+12
Vanadium	12526868844	3.475024932	12524956285	3.474494377	12523044019	3.473963903	12521132045	3.473433511	12519220363
Xenon	0	0	0	0	0	0	0	0	0
Zinc	295601104	0.031263389	295583897.5	0.031261569	295566692	0.031259749	295549487.5	0.031257929	295532284

Appendix C Model Calculations (2)	Leachate Concentration (mg/L) (9 Yr)	Remaining ICDF Contaminant Mass (mg) (9 Yr)	Leachate Concentration (mg/L) (10 Yr)	Remaining ICDF Contaminant Mass (mg) (10 Yr)	Leachate Concentration (mg/L) (11 Yr)	Remaining ICDF Contaminant Mass (mg) (11 Yr)	Leachate Concentration (mg/L) (12 Yr)	Remaining ICDF Contaminant Mass (mg) (12 Yr)
INORGANICS								
Arsenic	1.529993732	2829220541	1.529538492	2828378725	1.529083388	2827537160	1.52862842	2826695845
Astitine	0	0	0	0	0	0	0	0
Boron	40.59425018	1.22564E+11	40.58685167	1.22542E+11	40.57945451	1.22519E+11	40.5720587	1.22497E+11
Cadmium	0	0	0	0	0	0	0	0
Carbon (non-Rad)	0.468733209	44091177.56	0.4660066	43834700.34	0.463295852	43579715.04	0.460600872	43326212.99
Calcium	4.853846964	14654941114	4.852962326	14652270177	4.852077849	14649599727	4.851193534	14646929763
Chlorine	15.83889205	1489878225	15.74675763	1481211643	15.65515915	1472595474	15.56409351	1464029424
Cobalt	0	0	0	0	0	0	0	0
Copper	0	0	0	0	0	0	0	0
Cyanide	0	0	0	0	0	0	0	0
Fluorine	42.3236052	3981150804	42.07740991	3957992554	41.83264672	3934969016	41.58930732	3912079405
Krypton	0	0	0	0	0	0	0	0
Magnesium	0.249947672	754652638.2	0.249902118	754515098.9	0.249856572	754377584.7	0.249811034	754240095.6
Molybdenum	0	0	0	0	0	0	0	0
Nitrogen	0	0	0	0	0	0	0	0
	29.0124454	2729042570	28.84368077	2713167801	28.67589784	2697385376	28.5090909	2681694756
	0	0	0	0	0	0	0	0
Phosphorous	6.793546243	20511363641	6.792308084	20507625341	6.791070152	20503887723	6.789832445	20500150786
Potassium	0.089462279	793494489.7	0.089456728	793445255.2	0.089451177	793396023.7	0.089445627	793346795.3
Radon	0	0	0	0	0	0	0	0
Selenium	0.073383642	178630969.1	0.073367054	178590589.9	0.073350469	178550219.8	0.073333888	178509858.8
Strontium	0	0	0	0	0	0	0	0
Sulfur								
	0	0	0	0	0	0	0	0
	372.8389396	3.08881E+12	372.8141723	3.0886E+12	372.7894066	3.0884E+12	372.7646425	3.08819E+12
Vanadium	3.472903199	12517308972	3.472372969	12515397874	3.471842819	12513487067	3.47131275	12511576552
Xenon	0	0	0	0	0	0	0	0
Zinc	0.03125611	295515081.4	0.031254291	295497879.9	0.031252471	295480679.4	0.031250652	295463479.9

Appendix C Model Calculations (2)	Leachate Concentration (mg/L) (13 Yr)	Remaining ICDF Contaminant Mass (mg) (13 Yr)	Leachate Concentration (mg/L) (14 Yr)	Remaining ICDF Contaminant Mass (mg) (14 Yr)	Leachate Concentration (mg/L) (15 Yr)	Remaining ICDF Contaminant Mass (mg) (15 Yr)
INORGANICS						
Arsenic	1.528173586	2825854780	1.527718888	2825013966	1.527264326	2824173401
Astitine	0	0	0	0	0	0
Boron	40.56466424	1.22475E+11	40.55727113	1.22452E+11	40.54987936	1.2243E+11
Cadmium	0	0	0	0	0	0
Carbon (non-Rad)	0.457921569	43074185.55	0.455257852	42823624.15	0.452609629	42574520.26
Calcium	4.850309379	14644260287	4.849425386	14641591296	4.848541553	14638922792
Chlorine	15.47355758	1455513204	15.38354831	1447046522	15.29406261	1438629090
Cobalt	0	0	0	0	0	0
Copper	0	0	0	0	0	0
Cyanide	0	0	0	0	0	0
Fluorine	41.34738342	3889322942	41.10686678	3866698853	40.86774922	3844206368
Krypton	0	0	0	0	0	0
Magnesium	0.249765505	754102631.5	0.249719984	753965192.5	0.249674471	753827778.6
Molybdenum	0	0	0	0	0	0
Nitrogen	0	0	0	0	0	0
	28.34325427	2666095409	28.1783823	2650586802	28.0144694	2635168408
	0	0	0	0	0	0
Phosphorous	6.788594964	20496414530	6.787357708	20492678955	6.786120678	20488944061
Potassium	0.089440077	793297570	0.089434528	793248347.7	0.089428978	793199128.4
Radon	0	0	0	0	0	0
Selenium	0.073317311	178469507	0.073300738	178429164.3	0.073284169	178388830.7
Strontium	0	0	0	0	0	0
Sulfur						
	0	0	0	0	0	0
	372.7398801	3.08799E+12	372.7151193	3.08778E+12	372.6903602	3.08758E+12
Vanadium	3.470782763	12509666329	3.470252856	12507756397	3.46972303	12505846757
Xenon	0	0	0	0	0	0
Zinc	0.031248833	295446281.4	0.031247014	295429083.9	0.031245195	295411887.5

Appendix C Model Calculations (2)	Elemental Formula	Kd (mL/g) or (L/kg)	Half-Life in years	Isotope Specific Activity (pCi/g)	mg/kg from non-rads	mg/kg from rads	Total Inventory (kg)	Initial Soil Water Concentration (mg/L)	Initial Soil Concentration (mg/kg)	Initial Contaminant Mass in Soil Water (mg)	Initial Contaminant Mass on Soil (mg)
ORGANICS											
1,1,1-Trichloroethane f		0.41						0	0	0	0
1,1,2,2-Tetrachloroethane		0.24						0	0	0	0
1,1,2-Trichloroethane		0.23						0	0	0	0
1,1-Dichloroethane		0.16						0	0	0	0
1,1-Dichloroethene		0.2						0	0	0	0
1,2,4-Trichlorobenzene		4.98						0	0	0	0
1,2-Dichlorobenzene		1.14						0	0	0	0
1,2-Dichloroethane		0.11						0	0	0	0
1,2-Dichloroethene (total)		0.11						0	0	0	0
1,3-Dichlorobenzene		4.44						0	0	0	0
1,4-Dichlorobenzene		1.85						0	0	0	0
1,4-Dioxane g		0						0	0	0	0
2,4,5-Trichlorophenol		2.12						0	0	0	0
2,4,6-Trichlorophenol		7.54						0	0	0	0
2,4-Dichlorophenol		1.04						0	0	0	0
2,4-Dimethylphenol		0.63						0	0	0	0
2,4-Dinitrophenol		0.06						0	0	0	0
2,4-Dinitrotoluene		0.29						0	0	0	0
2,6-Dinitrotoluene		0.21						0	0	0	0
2-Butanone		0.04						0	0	0	0
2-Chlorophenol		0.26						0	0	0	0
2-Hexanone		0.04						0	0	0	0
2-Methylphenol		0.27						0	0	0	0
2-Nitroaniline		0.05						0	0	0	0
2-Nitrophenol		0.13						0	0	0	0
3,3'-Dichlorobenzidine		1.94						0	0	0	0
3-Nitroaniline		0.04						0	0	0	0
4-Chloro-3-methylphenol		2.33						0	0	0	0
4-Chloroaniline		0.13						0	0	0	0
4-Methylphenol		0.02						0	0	0	0
4-Nitrophenol		0.15						0	0	0	0
Acenaphthene		14.69						0	0	0	0
Acetone f		0						0	0	0	0
Acetonitrile g		0						0	0	0	0
Acrolein		0						0	0	0	0
Acrylonitrile		0						0	0	0	0
Benzene f		0.19						0	0	0	0
Benzidine g		0.04						0	0	0	0
Benzo(b)fluoranthene		0.001849785						0	0	0	0
Benzoic acid g		0.14						0	0	0	0
bis(2-Chloroethoxy)methane		0.01						0	0	0	0
bis(2-Chloroethyl)ether		0.23						0	0	0	0

Appendix C Model Calculations (2)	Remaining ICDF Contaminant Mass (mg) (0 Yr)	Leachate Concentration (mg/L) (1 Yr)	Remaining ICDF Contaminant Mass (mg) (1 Yr)	Leachate Concentration (mg/L) (2 Yr)	Remaining ICDF Contaminant Mass (mg) (2 Yr)	Leachate Concentration (mg/L) (3 Yr)	Remaining ICDF Contaminant Mass (mg) (3 Yr)	Leachate Concentration (mg/L) (4 Yr)
ORGANICS								
1,1,1-Trichloroethane f	0	0	0	0	0	0	0	0
1,1,2,2-Tetrachloroethane	0	0	0	0	0	0	0	0
1,1,2-Trichloroethane	0	0	0	0	0	0	0	0
1,1-Dichloroethane	0	0	0	0	0	0	0	0
1,1-Dichloroethene	0	0	0	0	0	0	0	0
1,2,4-Trichlorobenzene	0	0	0	0	0	0	0	0
1,2-Dichlorobenzene	0	0	0	0	0	0	0	0
1,2-Dichloroethane	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	0	0	0	0	0	0	0	0
1,3-Dichlorobenzene	0	0	0	0	0	0	0	0
1,4-Dichlorobenzene	0	0	0	0	0	0	0	0
1,4-Dioxane g	0	0	0	0	0	0	0	0
2,4,5-Trichlorophenol	0	0	0	0	0	0	0	0
2,4,6-Trichlorophenol	0	0	0	0	0	0	0	0
2,4-Dichlorophenol	0	0	0	0	0	0	0	0
2,4-Dimethylphenol	0	0	0	0	0	0	0	0
2,4-Dinitrophenol	0	0	0	0	0	0	0	0
2,4-Dinitrotoluene	0	0	0	0	0	0	0	0
2,6-Dinitrotoluene	0	0	0	0	0	0	0	0
2-Butanone	0	0	0	0	0	0	0	0
2-Chlorophenol	0	0	0	0	0	0	0	0
2-Hexanone	0	0	0	0	0	0	0	0
2-Methylphenol	0	0	0	0	0	0	0	0
2-Nitroaniline	0	0	0	0	0	0	0	0
2-Nitrophenol	0	0	0	0	0	0	0	0
3,3'-Dichlorobenzidine	0	0	0	0	0	0	0	0
3-Nitroaniline	0	0	0	0	0	0	0	0
4-Chloro-3-methylphenol	0	0	0	0	0	0	0	0
4-Chloroaniline	0	0	0	0	0	0	0	0
4-Methylphenol	0	0	0	0	0	0	0	0
4-Nitrophenol	0	0	0	0	0	0	0	0
Acenaphthene	0	0	0	0	0	0	0	0
Acetone f	0	0	0	0	0	0	0	0
Acetonitrile g	0	0	0	0	0	0	0	0
Acrolein	0	0	0	0	0	0	0	0
Acrylonitrile	0	0	0	0	0	0	0	0
Benzene f	0	0	0	0	0	0	0	0
Benzidine g	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	0	0	0	0	0	0	0	0
Benzoic acid g	0	0	0	0	0	0	0	0
bis(2-Chloroethoxy)methane	0	0	0	0	0	0	0	0
bis(2-Chloroethyl)ether	0	0	0	0	0	0	0	0

Appendix C Model Calculations (2)	Remaining ICDF Contaminant Mass (mg) (4 Yr)	Leachate Concentration (mg/L) (5 Yr)	Remaining ICDF Contaminant Mass (mg) (5 Yr)	Leachate Concentration (mg/L) (6 Yr)	Remaining ICDF Contaminant Mass (mg) (6 Yr)	Leachate Concentration (mg/L) (7 Yr)	Remaining ICDF Contaminant Mass (mg) (7 Yr)	Leachate Concentration (mg/L) (8 Yr)	Remaining ICDF Contaminant Mass (mg) (8 Yr)
ORGANICS									
1,1,1-Trichloroethane f	0	0	0	0	0	0	0	0	0
1,1,2,2-Tetrachloroethane	0	0	0	0	0	0	0	0	0
1,1,2-Trichloroethane	0	0	0	0	0	0	0	0	0
1,1-Dichloroethane	0	0	0	0	0	0	0	0	0
1,1-Dichloroethene	0	0	0	0	0	0	0	0	0
1,2,4-Trichlorobenzene	0	0	0	0	0	0	0	0	0
1,2-Dichlorobenzene	0	0	0	0	0	0	0	0	0
1,2-Dichloroethane	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	0	0	0	0	0	0	0	0	0
1,3-Dichlorobenzene	0	0	0	0	0	0	0	0	0
1,4-Dichlorobenzene	0	0	0	0	0	0	0	0	0
1,4-Dioxane g	0	0	0	0	0	0	0	0	0
2,4,5-Trichlorophenol	0	0	0	0	0	0	0	0	0
2,4,6-Trichlorophenol	0	0	0	0	0	0	0	0	0
2,4-Dichlorophenol	0	0	0	0	0	0	0	0	0
2,4-Dimethylphenol	0	0	0	0	0	0	0	0	0
2,4-Dinitrophenol	0	0	0	0	0	0	0	0	0
2,4-Dinitrotoluene	0	0	0	0	0	0	0	0	0
2,6-Dinitrotoluene	0	0	0	0	0	0	0	0	0
2-Butanone	0	0	0	0	0	0	0	0	0
2-Chlorophenol	0	0	0	0	0	0	0	0	0
2-Hexanone	0	0	0	0	0	0	0	0	0
2-Methylphenol	0	0	0	0	0	0	0	0	0
2-Nitroaniline	0	0	0	0	0	0	0	0	0
2-Nitrophenol	0	0	0	0	0	0	0	0	0
3,3'-Dichlorobenzidine	0	0	0	0	0	0	0	0	0
3-Nitroaniline	0	0	0	0	0	0	0	0	0
4-Chloro-3-methylphenol	0	0	0	0	0	0	0	0	0
4-Chloroaniline	0	0	0	0	0	0	0	0	0
4-Methylphenol	0	0	0	0	0	0	0	0	0
4-Nitrophenol	0	0	0	0	0	0	0	0	0
Acenaphthene	0	0	0	0	0	0	0	0	0
Acetone f	0	0	0	0	0	0	0	0	0
Acetonitrile g	0	0	0	0	0	0	0	0	0
Acrolein	0	0	0	0	0	0	0	0	0
Acrylonitrile	0	0	0	0	0	0	0	0	0
Benzene f	0	0	0	0	0	0	0	0	0
Benzidine g	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	0	0	0	0	0	0	0	0	0
Benzoic acid g	0	0	0	0	0	0	0	0	0
bis(2-Chloroethoxy)methane	0	0	0	0	0	0	0	0	0
bis(2-Chloroethyl)ether	0	0	0	0	0	0	0	0	0

Appendix C Model Calculations (2)	Leachate Concentration (mg/L) (9 Yr)	Remaining ICDF Contaminant Mass (mg) (9 Yr)	Leachate Concentration (mg/L) (10 Yr)	Remaining ICDF Contaminant Mass (mg) (10 Yr)	Leachate Concentration (mg/L) (11 Yr)	Remaining ICDF Contaminant Mass (mg) (11 Yr)	Leachate Concentration (mg/L) (12 Yr)	Remaining ICDF Contaminant Mass (mg) (12 Yr)
ORGANICS								
1,1,1-Trichloroethane f	0	0	0	0	0	0	0	0
1,1,2,2-Tetrachloroethane	0	0	0	0	0	0	0	0
1,1,2-Trichloroethane	0	0	0	0	0	0	0	0
1,1-Dichloroethane	0	0	0	0	0	0	0	0
1,1-Dichloroethene	0	0	0	0	0	0	0	0
1,2,4-Trichlorobenzene	0	0	0	0	0	0	0	0
1,2-Dichlorobenzene	0	0	0	0	0	0	0	0
1,2-Dichloroethane	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	0	0	0	0	0	0	0	0
1,3-Dichlorobenzene	0	0	0	0	0	0	0	0
1,4-Dichlorobenzene	0	0	0	0	0	0	0	0
1,4-Dioxane g	0	0	0	0	0	0	0	0
2,4,5-Trichlorophenol	0	0	0	0	0	0	0	0
2,4,6-Trichlorophenol	0	0	0	0	0	0	0	0
2,4-Dichlorophenol	0	0	0	0	0	0	0	0
2,4-Dimethylphenol	0	0	0	0	0	0	0	0
2,4-Dinitrophenol	0	0	0	0	0	0	0	0
2,4-Dinitrotoluene	0	0	0	0	0	0	0	0
2,6-Dinitrotoluene	0	0	0	0	0	0	0	0
2-Butanone	0	0	0	0	0	0	0	0
2-Chlorophenol	0	0	0	0	0	0	0	0
2-Hexanone	0	0	0	0	0	0	0	0
2-Methylphenol	0	0	0	0	0	0	0	0
2-Nitroaniline	0	0	0	0	0	0	0	0
2-Nitrophenol	0	0	0	0	0	0	0	0
3,3'-Dichlorobenzidine	0	0	0	0	0	0	0	0
3-Nitroaniline	0	0	0	0	0	0	0	0
4-Chloro-3-methylphenol	0	0	0	0	0	0	0	0
4-Chloroaniline	0	0	0	0	0	0	0	0
4-Methylphenol	0	0	0	0	0	0	0	0
4-Nitrophenol	0	0	0	0	0	0	0	0
Acenaphthene	0	0	0	0	0	0	0	0
Acetone f	0	0	0	0	0	0	0	0
Acetonitrile g	0	0	0	0	0	0	0	0
Acrolein	0	0	0	0	0	0	0	0
Acrylonitrile	0	0	0	0	0	0	0	0
Benzene f	0	0	0	0	0	0	0	0
Benzidine g	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	0	0	0	0	0	0	0	0
Benzoic acid g	0	0	0	0	0	0	0	0
bis(2-Chloroethoxy)methane	0	0	0	0	0	0	0	0
bis(2-Chloroethyl)ether	0	0	0	0	0	0	0	0

Appendix C Model Calculations (2)	Leachate Concentration (mg/L) (13 Yr)	Remaining ICDF Contaminant Mass (mg) (13 Yr)	Leachate Concentration (mg/L) (14 Yr)	Remaining ICDF Contaminant Mass (mg) (14 Yr)	Leachate Concentration (mg/L) (15 Yr)	Remaining ICDF Contaminant Mass (mg) (15 Yr)
ORGANICS						
1,1,1-Trichloroethane f	0	0	0	0	0	0
1,1,2,2-Tetrachloroethane	0	0	0	0	0	0
1,1,2-Trichloroethane	0	0	0	0	0	0
1,1-Dichloroethane	0	0	0	0	0	0
1,1-Dichloroethene	0	0	0	0	0	0
1,2,4-Trichlorobenzene	0	0	0	0	0	0
1,2-Dichlorobenzene	0	0	0	0	0	0
1,2-Dichloroethane	0	0	0	0	0	0
1,2-Dichloroethene (total)	0	0	0	0	0	0
1,3-Dichlorobenzene	0	0	0	0	0	0
1,4-Dichlorobenzene	0	0	0	0	0	0
1,4-Dioxane g	0	0	0	0	0	0
2,4,5-Trichlorophenol	0	0	0	0	0	0
2,4,6-Trichlorophenol	0	0	0	0	0	0
2,4-Dichlorophenol	0	0	0	0	0	0
2,4-Dimethylphenol	0	0	0	0	0	0
2,4-Dinitrophenol	0	0	0	0	0	0
2,4-Dinitrotoluene	0	0	0	0	0	0
2,6-Dinitrotoluene	0	0	0	0	0	0
2-Butanone	0	0	0	0	0	0
2-Chlorophenol	0	0	0	0	0	0
2-Hexanone	0	0	0	0	0	0
2-Methylphenol	0	0	0	0	0	0
2-Nitroaniline	0	0	0	0	0	0
2-Nitrophenol	0	0	0	0	0	0
3,3'-Dichlorobenzidine	0	0	0	0	0	0
3-Nitroaniline	0	0	0	0	0	0
4-Chloro-3-methylphenol	0	0	0	0	0	0
4-Chloroaniline	0	0	0	0	0	0
4-Methylphenol	0	0	0	0	0	0
4-Nitrophenol	0	0	0	0	0	0
Acenaphthene	0	0	0	0	0	0
Acetone f	0	0	0	0	0	0
Acetonitrile g	0	0	0	0	0	0
Acrolein	0	0	0	0	0	0
Acrylonitrile	0	0	0	0	0	0
Benzene f	0	0	0	0	0	0
Benzidine g	0	0	0	0	0	0
Benzo(b)fluoranthene	0	0	0	0	0	0
Benzoic acid g	0	0	0	0	0	0
bis(2-Chloroethoxy)methane	0	0	0	0	0	0
bis(2-Chloroethyl)ether	0	0	0	0	0	0

Appendix C Model Calculations (2)	Elemental Formula	Kd (mL/g) or (L/kg)	Half-Life in years	Isotope Specific Activity (pCi/g)	mg/kg from non-rads	mg/kg from rads	Total Inventory (kg)	Initial Soil Water Concentration (mg/L)	Initial Soil Concentration (mg/kg)	Initial Contaminant Mass in Soil Water (mg)	Initial Contaminant Mass on Soil (mg)
ORGANICS (Continued)											
bis(2-Chloroisopropyl)ether		0.7						0	0	0	0
bis(2-Ethylhexyl)phthalate		18						0	0	0	0
Carbazole		10.17						0	0	0	0
Carbon Disulfide f		0.14						0	0	0	0
Chlorobenzene		0.67						0	0	0	0
Chloroethane		0.05						0	0	0	0
Chloromethane		0.02						0	0	0	0
Diethylphthalate		0.25						0	0	0	0
Dimethyl Disulfide g		0.11						0	0	0	0
Dimethylphthalate		0.07						0	0	0	0
Di-n-butylphthalate		4.7						0	0	0	0
Ethylbenzene		0.61						0	0	0	0
Hexachlorobutadiene		10.17						0	0	0	0
Hexachlorocyclopentadiene		9.707809708						0	0	0	0
Hexachloroethane		5.34						0	0	0	0
Indeno(1,2,3-cd)pyrene		4.046888648						0	0	0	0
Isophorone		0.14						0	0	0	0
Methyl Acetate g		0						0	0	0	0
Methylene Chloride		0.03						0	0	0	0
Naphthalene		3.57						0	0	0	0
Nitrobenzene		0.36						0	0	0	0
N-Nitroso-di-n-propylamine		0.07						0	0	0	0
N-Nitrosodiphenylamine		3.87						0	0	0	0
Phenol		0.09						0	0	0	0
Pyrene		0.001114606						0	0	0	0
Styrene		2.74						0	0	0	0
Tetrachloroethene f		0.8						0	0	0	0
Toluene f		1						0	0	0	0
Trichloroethene f		0.28						0	0	0	0
Xylene (ortho) f		0.72						0	0	0	0
Xylene (total) f		0.59						0	0	0	0

Appendix C Model Calculations (2)	Remaining ICDF Contaminant Mass (mg) (0 Yr)	Leachate Concentration (mg/L) (1 Yr)	Remaining ICDF Contaminant Mass (mg) (1 Yr)	Leachate Concentration (mg/L) (2 Yr)	Remaining ICDF Contaminant Mass (mg) (2 Yr)	Leachate Concentration (mg/L) (3 Yr)	Remaining ICDF Contaminant Mass (mg) (3 Yr)	Leachate Concentration (mg/L) (4 Yr)
ORGANICS (Continued)								
bis(2-Chloroisopropyl)ether	0	0	0	0	0	0	0	0
bis(2-Ethylhexyl)phthalate	0	0	0	0	0	0	0	0
Carbazole	0	0	0	0	0	0	0	0
Carbon Disulfide f	0	0	0	0	0	0	0	0
Chlorobenzene	0	0	0	0	0	0	0	0
Chloroethane	0	0	0	0	0	0	0	0
Chloromethane	0	0	0	0	0	0	0	0
Diethylphthalate	0	0	0	0	0	0	0	0
Dimethyl Disulfide g	0	0	0	0	0	0	0	0
Dimethylphthalate	0	0	0	0	0	0	0	0
Di-n-butylphthalate	0	0	0	0	0	0	0	0
Ethylbenzene	0	0	0	0	0	0	0	0
Hexachlorobutadiene	0	0	0	0	0	0	0	0
Hexachlorocyclopentadiene	0	0	0	0	0	0	0	0
Hexachloroethane	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	0	0	0	0	0	0	0	0
Isophorone	0	0	0	0	0	0	0	0
Methyl Acetate g	0	0	0	0	0	0	0	0
Methylene Chloride	0	0	0	0	0	0	0	0
Naphthalene	0	0	0	0	0	0	0	0
Nitrobenzene	0	0	0	0	0	0	0	0
N-Nitroso-di-n-propylamine	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	0	0	0	0	0	0	0	0
Phenol	0	0	0	0	0	0	0	0
Pyrene	0	0	0	0	0	0	0	0
Styrene	0	0	0	0	0	0	0	0
Tetrachloroethene f	0	0	0	0	0	0	0	0
Toluene f	0	0	0	0	0	0	0	0
Trichloroethene f	0	0	0	0	0	0	0	0
Xylene (ortho) f	0	0	0	0	0	0	0	0
Xylene (total) f	0	0	0	0	0	0	0	0

Appendix C Model Calculations (2)	Remaining ICDF Contaminant Mass (mg) (4 Yr)	Leachate Concentration (mg/L) (5 Yr)	Remaining ICDF Contaminant Mass (mg) (5 Yr)	Leachate Concentration (mg/L) (6 Yr)	Remaining ICDF Contaminant Mass (mg) (6 Yr)	Leachate Concentration (mg/L) (7 Yr)	Remaining ICDF Contaminant Mass (mg) (7 Yr)	Leachate Concentration (mg/L) (8 Yr)	Remaining ICDF Contaminant Mass (mg) (8 Yr)
ORGANICS (Continued)									
bis(2-Chloroisopropyl)ether	0	0	0	0	0	0	0	0	0
bis(2-Ethylhexyl)phthalate	0	0	0	0	0	0	0	0	0
Carbazole	0	0	0	0	0	0	0	0	0
Carbon Disulfide f	0	0	0	0	0	0	0	0	0
Chlorobenzene	0	0	0	0	0	0	0	0	0
Chloroethane	0	0	0	0	0	0	0	0	0
Chloromethane	0	0	0	0	0	0	0	0	0
Diethylphthalate	0	0	0	0	0	0	0	0	0
Dimethyl Disulfide g	0	0	0	0	0	0	0	0	0
Dimethylphthalate	0	0	0	0	0	0	0	0	0
Di-n-butylphthalate	0	0	0	0	0	0	0	0	0
Ethylbenzene	0	0	0	0	0	0	0	0	0
Hexachlorobutadiene	0	0	0	0	0	0	0	0	0
Hexachlorocyclopentadiene	0	0	0	0	0	0	0	0	0
Hexachloroethane	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	0	0	0	0	0	0	0	0	0
Isophorone	0	0	0	0	0	0	0	0	0
Methyl Acetate g	0	0	0	0	0	0	0	0	0
Methylene Chloride	0	0	0	0	0	0	0	0	0
Naphthalene	0	0	0	0	0	0	0	0	0
Nitrobenzene	0	0	0	0	0	0	0	0	0
N-Nitroso-di-n-propylamine	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	0	0	0	0	0	0	0	0	0
Phenol	0	0	0	0	0	0	0	0	0
Pyrene	0	0	0	0	0	0	0	0	0
Styrene	0	0	0	0	0	0	0	0	0
Tetrachloroethene f	0	0	0	0	0	0	0	0	0
Toluene f	0	0	0	0	0	0	0	0	0
Trichloroethene f	0	0	0	0	0	0	0	0	0
Xylene (ortho) f	0	0	0	0	0	0	0	0	0
Xylene (total) f	0	0	0	0	0	0	0	0	0

Appendix C *Model Calculations (2)*	Leachate Concentration (mg/L) (9 Yr)	Remaining ICDF Contaminant Mass (mg) (9 Yr)	Leachate Concentration (mg/L) (10 Yr)	Remaining ICDF Contaminant Mass (mg) (10 Yr)	Leachate Concentration (mg/L) (11 Yr)	Remaining ICDF Contaminant Mass (mg) (11 Yr)	Leachate Concentration (mg/L) (12 Yr)	Remaining ICDF Contaminant Mass (mg) (12 Yr)
ORGANICS (Continued)								
bis(2-Chloroisopropyl)ether	0	0	0	0	0	0	0	0
bis(2-Ethylhexyl)phthalate	0	0	0	0	0	0	0	0
Carbazole	0	0	0	0	0	0	0	0
Carbon Disulfide f	0	0	0	0	0	0	0	0
Chlorobenzene	0	0	0	0	0	0	0	0
Chloroethane	0	0	0	0	0	0	0	0
Chloromethane	0	0	0	0	0	0	0	0
Diethylphthalate	0	0	0	0	0	0	0	0
Dimethyl Disulfide g	0	0	0	0	0	0	0	0
Dimethylphthalate	0	0	0	0	0	0	0	0
Di-n-butylphthalate	0	0	0	0	0	0	0	0
Ethylbenzene	0	0	0	0	0	0	0	0
Hexachlorobutadiene	0	0	0	0	0	0	0	0
Hexachlorocyclopentadiene	0	0	0	0	0	0	0	0
Hexachloroethane	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	0	0	0	0	0	0	0	0
Isophorone	0	0	0	0	0	0	0	0
Methyl Acetate g	0	0	0	0	0	0	0	0
Methylene Chloride	0	0	0	0	0	0	0	0
Naphthalene	0	0	0	0	0	0	0	0
Nitrobenzene	0	0	0	0	0	0	0	0
N-Nitroso-di-n-propylamine	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	0	0	0	0	0	0	0	0
Phenol	0	0	0	0	0	0	0	0
Pyrene	0	0	0	0	0	0	0	0
Styrene	0	0	0	0	0	0	0	0
Tetrachloroethene f	0	0	0	0	0	0	0	0
Toluene f	0	0	0	0	0	0	0	0
Trichloroethene f	0	0	0	0	0	0	0	0
Xylene (ortho) f	0	0	0	0	0	0	0	0
Xylene (total) f	0	0	0	0	0	0	0	0

Appendix C Model Calculations (2)	Leachate Concentration (mg/L) (13 Yr)	Remaining ICDF Contaminant Mass (mg) (13 Yr)	Leachate Concentration (mg/L) (14 Yr)	Remaining ICDF Contaminant Mass (mg) (14 Yr)	Leachate Concentration (mg/L) (15 Yr)	Remaining ICDF Contaminant Mass (mg) (15 Yr)
ORGANICS (Continued)						
bis(2-Chloroisopropyl)ether	0	0	0	0	0	0
bis(2-Ethylhexyl)phthalate	0	0	0	0	0	0
Carbazole	0	0	0	0	0	0
Carbon Disulfide f	0	0	0	0	0	0
Chlorobenzene	0	0	0	0	0	0
Chloroethane	0	0	0	0	0	0
Chloromethane	0	0	0	0	0	0
Diethylphthalate	0	0	0	0	0	0
Dimethyl Disulfide g	0	0	0	0	0	0
Dimethylphthalate	0	0	0	0	0	0
Di-n-butylphthalate	0	0	0	0	0	0
Ethylbenzene	0	0	0	0	0	0
Hexachlorobutadiene	0	0	0	0	0	0
Hexachlorocyclopentadiene	0	0	0	0	0	0
Hexachloroethane	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	0	0	0	0	0	0
Isophorone	0	0	0	0	0	0
Methyl Acetate g	0	0	0	0	0	0
Methylene Chloride	0	0	0	0	0	0
Naphthalene	0	0	0	0	0	0
Nitrobenzene	0	0	0	0	0	0
N-Nitroso-di-n-propylamine	0	0	0	0	0	0
N-Nitrosodiphenylamine	0	0	0	0	0	0
Phenol	0	0	0	0	0	0
Pyrene	0	0	0	0	0	0
Styrene	0	0	0	0	0	0
Tetrachloroethene f	0	0	0	0	0	0
Toluene f	0	0	0	0	0	0
Trichloroethene f	0	0	0	0	0	0
Xylene (ortho) f	0	0	0	0	0	0
Xylene (total) f	0	0	0	0	0	0

Appendix C Model Calculations (2)	Elemental Formula	Kd (mL/g) or (L/kg)	Half-Life in years	Isotope Specific Activity (pCi/g)	mg/kg from non-rads	mg/kg from rads	Total Inventory (kg)	Initial Soil Water Concentration (mg/L)	Initial Soil Concentration (mg/kg)	Initial Contaminant Mass in Soil Water (mg)	Initial Contaminant Mass on Soil (mg)
ORGANICS (Unknown kd)											
2-Methylnaphthalene								0	0	0	0
3-Methyl Butanal								0	0	0	0
4,6-Dinitro-2-methylphenol								0	0	0	0
4-Methyl-2-Pentanone								0	0	0	0
4-Nitroaniline								0	0	0	0
Aramite								0	0	0	0
Butane,1,1,3,4-Tetrachloro-								0	0	0	0
Decane, 3,4-Dimethyl								0	0	0	0
Diacetone alcohol								0	0	0	0
Dibenzofuran								0	0	0	0
Eicosane								0	0	0	0
Ethyl cyanide								0	0	0	0
Famphur								0	0	0	0
Heptadecane, 2,6,10,15-Tetra								0	0	0	0
Isobutyl alcohol								0	0	0	0
Isopropyl Alcohol/2-propanol								0	0	0	0
Kepone								0	0	0	0
Mesityl oxide								0	0	0	0
Octane,2,3,7-Trimethyl								0	0	0	0
o-Toluenesulfonamide								0	0	0	0
Phenol,2,6-Bis(1,1-Dimethyl)								0	0	0	0
p-Toluenesulfonamide								0	0	0	0
Tributylphosphate								0	0	0	0
Undecane,4,6-Dimethyl-								0	0	0	0

Appendix C Model Calculations (2)	Remaining ICDF Contaminant Mass (mg) (0 Yr)	Leachate Concentration (mg/L) (1 Yr)	Remaining ICDF Contaminant Mass (mg) (1 Yr)	Leachate Concentration (mg/L) (2 Yr)	Remaining ICDF Contaminant Mass (mg) (2 Yr)	Leachate Concentration (mg/L) (3 Yr)	Remaining ICDF Contaminant Mass (mg) (3 Yr)	Leachate Concentration (mg/L) (4 Yr)
ORGANICS (Unknown kd)								
2-Methylnaphthalene	0	0	0	0	0	0	0	0
3-Methyl Butanal	0	0	0	0	0	0	0	0
4,6-Dinitro-2-methylphenol	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	0	0	0	0	0	0	0	0
4-Nitroaniline	0	0	0	0	0	0	0	0
Aramite	0	0	0	0	0	0	0	0
Butane,1,1,3,4-Tetrachloro-	0	0	0	0	0	0	0	0
Decane, 3,4-Dimethyl	0	0	0	0	0	0	0	0
Diacetone alcohol	0	0	0	0	0	0	0	0
Dibenzofuran	0	0	0	0	0	0	0	0
Eicosane	0	0	0	0	0	0	0	0
Ethyl cyanide	0	0	0	0	0	0	0	0
Famphur	0	0	0	0	0	0	0	0
Heptadecane, 2,6,10,15-Tetra	0	0	0	0	0	0	0	0
Isobutyl alcohol	0	0	0	0	0	0	0	0
Isopropyl Alcohol/2-propanol	0	0	0	0	0	0	0	0
Kepone	0	0	0	0	0	0	0	0
Mesityl oxide	0	0	0	0	0	0	0	0
Octane,2,3,7-Trimethyl	0	0	0	0	0	0	0	0
o-Toluenesulfonamide	0	0	0	0	0	0	0	0
Phenol,2,6-Bis(1,1-Dimethyl)	0	0	0	0	0	0	0	0
p-Toluenesulfonamide	0	0	0	0	0	0	0	0
Tributylphosphate	0	0	0	0	0	0	0	0
Undecane,4,6-Dimethyl-	0	0	0	0	0	0	0	0

Appendix C Model Calculations (2)	Remaining ICDF Contaminant Mass (mg) (4 Yr)	Leachate Concentration (mg/L) (5 Yr)	Remaining ICDF Contaminant Mass (mg) (5 Yr)	Leachate Concentration (mg/L) (6 Yr)	Remaining ICDF Contaminant Mass (mg) (6 Yr)	Leachate Concentration (mg/L) (7 Yr)	Remaining ICDF Contaminant Mass (mg) (7 Yr)	Leachate Concentration (mg/L) (8 Yr)	Remaining ICDF Contaminant Mass (mg) (8 Yr)
ORGANICS (Unknown kd)									
2-Methylnaphthalene	0	0	0	0	0	0	0	0	0
3-Methyl Butanal	0	0	0	0	0	0	0	0	0
4,6-Dinitro-2-methylphenol	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	0	0	0	0	0	0	0	0	0
4-Nitroaniline	0	0	0	0	0	0	0	0	0
Aramite	0	0	0	0	0	0	0	0	0
Butane,1,1,3,4-Tetrachloro-	0	0	0	0	0	0	0	0	0
Decane, 3,4-Dimethyl	0	0	0	0	0	0	0	0	0
Diacetone alcohol	0	0	0	0	0	0	0	0	0
Dibenzofuran	0	0	0	0	0	0	0	0	0
Eicosane	0	0	0	0	0	0	0	0	0
Ethyl cyanide	0	0	0	0	0	0	0	0	0
Famphur	0	0	0	0	0	0	0	0	0
Heptadecane, 2,6,10,15-Tetra	0	0	0	0	0	0	0	0	0
Isobutyl alcohol	0	0	0	0	0	0	0	0	0
Isopropyl Alcohol/2-propanol	0	0	0	0	0	0	0	0	0
Kepone	0	0	0	0	0	0	0	0	0
Mesityl oxide	0	0	0	0	0	0	0	0	0
Octane,2,3,7-Trimethyl	0	0	0	0	0	0	0	0	0
o-Toluenesulfonamide	0	0	0	0	0	0	0	0	0
Phenol,2,6-Bis(1,1-Dimethyl)	0	0	0	0	0	0	0	0	0
p-Toluenesulfonamide	0	0	0	0	0	0	0	0	0
Tributylphosphate	0	0	0	0	0	0	0	0	0
Undecane,4,6-Dimethyl-	0	0	0	0	0	0	0	0	0

Appendix C Model Calculations (2)	Leachate Concentration (mg/L) (9 Yr)	Remaining ICDF Contaminant Mass (mg) (9 Yr)	Leachate Concentration (mg/L) (10 Yr)	Remaining ICDF Contaminant Mass (mg) (10 Yr)	Leachate Concentration (mg/L) (11 Yr)	Remaining ICDF Contaminant Mass (mg) (11 Yr)	Leachate Concentration (mg/L) (12 Yr)	Remaining ICDF Contaminant Mass (mg) (12 Yr)
ORGANICS (Unknown kd)								
2-Methylnaphthalene	0	0	0	0	0	0	0	0
3-Methyl Butanal	0	0	0	0	0	0	0	0
4,6-Dinitro-2-methylphenol	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	0	0	0	0	0	0	0	0
4-Nitroaniline	0	0	0	0	0	0	0	0
Aramite	0	0	0	0	0	0	0	0
Butane,1,1,3,4-Tetrachloro-	0	0	0	0	0	0	0	0
Decane, 3,4-Dimethyl	0	0	0	0	0	0	0	0
Diacetone alcohol	0	0	0	0	0	0	0	0
Dibenzofuran	0	0	0	0	0	0	0	0
Eicosane	0	0	0	0	0	0	0	0
Ethyl cyanide	0	0	0	0	0	0	0	0
Famphur	0	0	0	0	0	0	0	0
Heptadecane, 2,6,10,15-Tetra	0	0	0	0	0	0	0	0
Isobutyl alcohol	0	0	0	0	0	0	0	0
Isopropyl Alcohol/2-propanol	0	0	0	0	0	0	0	0
Kepone	0	0	0	0	0	0	0	0
Mesityl oxide	0	0	0	0	0	0	0	0
Octane,2,3,7-Trimethyl	0	0	0	0	0	0	0	0
o-Toluenesulfonamide	0	0	0	0	0	0	0	0
Phenol,2,6-Bis(1,1-Dimethyl)	0	0	0	0	0	0	0	0
p-Toluenesulfonamide	0	0	0	0	0	0	0	0
Tributylphosphate	0	0	0	0	0	0	0	0
Undecane,4,6-Dimethyl-	0	0	0	0	0	0	0	0

Appendix C Model Calculations (2)	Leachate Concentration (mg/L) (13 Yr)	Remaining ICDF Contaminant Mass (mg) (13 Yr)	Leachate Concentration (mg/L) (14 Yr)	Remaining ICDF Contaminant Mass (mg) (14 Yr)	Leachate Concentration (mg/L) (15 Yr)	Remaining ICDF Contaminant Mass (mg) (15 Yr)
ORGANICS (Unknown kd)						
2-Methylnaphthalene	0	0	0	0	0	0
3-Methyl Butanal	0	0	0	0	0	0
4,6-Dinitro-2-methylphenol	0	0	0	0	0	0
4-Methyl-2-Pentanone	0	0	0	0	0	0
4-Nitroaniline	0	0	0	0	0	0
Aramite	0	0	0	0	0	0
Butane,1,1,3,4-Tetrachloro-	0	0	0	0	0	0
Decane, 3,4-Dimethyl	0	0	0	0	0	0
Diacetone alcohol	0	0	0	0	0	0
Dibenzofuran	0	0	0	0	0	0
Eicosane	0	0	0	0	0	0
Ethyl cyanide	0	0	0	0	0	0
Famphur	0	0	0	0	0	0
Heptadecane, 2,6,10,15-Tetra	0	0	0	0	0	0
Isobutyl alcohol	0	0	0	0	0	0
Isopropyl Alcohol/2-propanol	0	0	0	0	0	0
Kepone	0	0	0	0	0	0
Mesityl oxide	0	0	0	0	0	0
Octane,2,3,7-Trimethyl	0	0	0	0	0	0
o-Toluenesulfonamide	0	0	0	0	0	0
Phenol,2,6-Bis(1,1-Dimethyl)	0	0	0	0	0	0
p-Toluenesulfonamide	0	0	0	0	0	0
Tributylphosphate	0	0	0	0	0	0
Undecane,4,6-Dimethyl-	0	0	0	0	0	0

Appendix C Model Calculations (2)	Elemental Formula	Kd (mL/g) or (L/kg)	Half-Life in years	Isotope Specific Activity (pCi/g)	mg/kg from non-rads	mg/kg from rads	Total Inventory (kg)	Initial Soil Water Concentration (mg/L)	Initial Soil Concentration (mg/kg)	Initial Contaminant Mass in Soil Water (mg)	Initial Contaminant Mass on Soil (mg)
RADIONUCLIDES											
C 14	C 14	5	5730	4.46023E+12		8.37871E-12		0	0	0	0
Cd113m	Cd113m	6	14.6	2.16875E+14		6.05622E-09		0	0	0	0
H 3	H 3	0	12.3	9.69648E+15		4.14296E-09		0	0	0	0
I129	I129	0	15700000	176665185.4		0.005949247		0.045421645	0	4297565.384	0
Kr81	Kr81	0	210000	21034685479		2.04314E-13		0	0	0	0
Kr85	Kr85	0	10.73	3.92303E+14		2.39392E-06		0	0	0	0
Np236	Np236	8	115000	13183492999		4.26331E-12		0	0	0	0
Np237	Np237	8	2140000	705469458.6		0.000737414		0	0	0	0
Sr 90	Sr 90	12	29.1	1.36617E+14		0.000135559		0	0	0	0
Tc 98	Tc 98	0.2	4200000	869290573.4		1.64811E-10		0	0	0	0
Tc 99	Tc 99	0.2	213000	16967800066		0.000274935		0.0009379	0.00018758	88739.35769	109741.0057
U232	U232	6	69.2	2.22867E+13		1.94501E-11		0	0	0	0
U233	U233	6	159000	9658001997		2.14905E-09		0	0	0	0
U234	U234	6	246000	6215690362		0.000786046		0	0	0	0
U235	U235	6	704000000	2162717.602		0.040563614		0	0	0	0
U236	U236	6	23400000	64790670.72		0.002528763		0	0	0	0
U238	U238	6	4470000000	336322.4484		4.762515583		0.059445397	0.35667238	5624421.495	208666037.5

Appendix C Model Calculations (2)	Remaining ICDF Contaminant Mass (mg) (0 Yr)	Leachate Concentration (mg/L) (1 Yr)	Remaining ICDF Contaminant Mass (mg) (1 Yr)	Leachate Concentration (mg/L) (2 Yr)	Remaining ICDF Contaminant Mass (mg) (2 Yr)	Leachate Concentration (mg/L) (3 Yr)	Remaining ICDF Contaminant Mass (mg) (3 Yr)	Leachate Concentration (mg/L) (4 Yr)
RADIONUCLIDES								
C 14	0	0	0	0	0	0	0	0
Cd113m	0	0	0	0	0	0	0	0
H 3	0	0	0	0	0	0	0	0
I129	4297565.384	0.045421643	4272566.371	0.045157425	4247712.777	0.044894743	4223003.758	0.04463359
Kr81	0	0	0	0	0	0	0	0
Kr85	0	0	0	0	0	0	0	0
Np236	0	0	0	0	0	0	0	0
Np237	0	0	0	0	0	0	0	0
Sr 90	0	0	0	0	0	0	0	0
Tc 98	0	0	0	0	0	0	0	0
Tc 99	198480.3634	0.000937897	197963.5247	0.000935455	197448.0318	0.000933019	196933.8812	0.000930589
U232	0	0	0	0	0	0	0	0
U233	0	0	0	0	0	0	0	0
U234	0	0	0	0	0	0	0	0
U235	0	0	0	0	0	0	0	0
U236	0	0	0	0	0	0	0	0
U238	214290458.9	0.059445397	214257741.8	0.059436321	214225029.7	0.059427246	214192322.5	0.059418173

Appendix C Model Calculations (2)	Remaining ICDF Contaminant Mass (mg) (4 Yr)	Leachate Concentration (mg/L) (5 Yr)	Remaining ICDF Contaminant Mass (mg) (5 Yr)	Leachate Concentration (mg/L) (6 Yr)	Remaining ICDF Contaminant Mass (mg) (6 Yr)	Leachate Concentration (mg/L) (7 Yr)	Remaining ICDF Contaminant Mass (mg) (7 Yr)	Leachate Concentration (mg/L) (8 Yr)	Remaining ICDF Contaminant Mass (mg) (8 Yr)
RADIONUCLIDES									
C 14	0	0	0	0	0	0	0	0	0
Cd113m	0	0	0	0	0	0	0	0	0
H 3	0	0	0	0	0	0	0	0	0
I129	4198438.471	0.044373956	4174016.081	0.044115831	4149735.756	0.043859209	4125596.67	0.043604079	4101598.002
Kr81	0	0	0	0	0	0	0	0	0
Kr85	0	0	0	0	0	0	0	0	0
Np236	0	0	0	0	0	0	0	0	0
Np237	0	0	0	0	0	0	0	0	0
Sr 90	0	0	0	0	0	0	0	0	0
Tc 98	0	0	0	0	0	0	0	0	0
Tc 99	196421.0695	0.000928166	195909.5931	0.000925749	195399.4487	0.000923339	194890.6326	0.000920934	194383.1414
U232	0	0	0	0	0	0	0	0	0
U233	0	0	0	0	0	0	0	0	0
U234	0	0	0	0	0	0	0	0	0
U235	0	0	0	0	0	0	0	0	0
U236	0	0	0	0	0	0	0	0	0
U238	214159620.3	0.059409101	214126923.2	0.059400031	214094231	0.059390962	214061543.8	0.059381894	214028861.6

Appendix C Model Calculations (2)	Leachate Concentration (mg/L) (9 Yr)	Remaining ICDF Contaminant Mass (mg) (9 Yr)	Leachate Concentration (mg/L) (10 Yr)	Remaining ICDF Contaminant Mass (mg) (10 Yr)	Leachate Concentration (mg/L) (11 Yr)	Remaining ICDF Contaminant Mass (mg) (11 Yr)	Leachate Concentration (mg/L) (12 Yr)	Remaining ICDF Contaminant Mass (mg) (12 Yr)
RADIONUCLIDES								
C 14	0	0	0	0	0	0	0	0
Cd113m	0	0	0	0	0	0	0	0
H 3	0	0	0	0	0	0	0	0
I129	0.043350433	4077738.935	0.043098263	4054018.656	0.04284756	4030436.358	0.042598315	4006991.239
Kr81	0	0	0	0	0	0	0	0
Kr85	0	0	0	0	0	0	0	0
Np236	0	0	0	0	0	0	0	0
Np237	0	0	0	0	0	0	0	0
Sr 90	0	0	0	0	0	0	0	0
Tc 98	0	0	0	0	0	0	0	0
Tc 99	0.000918536	193876.9718	0.000916144	193372.1202	0.000913759	192868.5832	0.000911379	192366.3575
U232	0	0	0	0	0	0	0	0
U233	0	0	0	0	0	0	0	0
U234	0	0	0	0	0	0	0	0
U235	0	0	0	0	0	0	0	0
U236	0	0	0	0	0	0	0	0
U238	0.059372828	213996184.4	0.059363763	213963512.2	0.0593547	213930845	0.059345638	213898182.7

Appendix C Model Calculations (2)	Leachate Concentration (mg/L) (13 Yr)	Remaining ICDF Contaminant Mass (mg) (13 Yr)	Leachate Concentration (mg/L) (14 Yr)	Remaining ICDF Contaminant Mass (mg) (14 Yr)	Leachate Concentration (mg/L) (15 Yr)	Remaining ICDF Contaminant Mass (mg) (15 Yr)
RADIONUCLIDES						
C 14	0	0	0	0	0	0
Cd113m	0	0	0	0	0	0
H 3	0	0	0	0	0	0
I129	0.04235052	3983682.501	0.042104166	3960509.35	0.041859245	3937470.997
Kr81	0	0	0	0	0	0
Kr85	0	0	0	0	0	0
Np236	0	0	0	0	0	0
Np237	0	0	0	0	0	0
Sr 90	0	0	0	0	0	0
Tc 98	0	0	0	0	0	0
Tc 99	0.000909006	191865.4395	0.000906639	191365.8259	0.000904278	190867.5133
U232	0	0	0	0	0	0
U233	0	0	0	0	0	0
U234	0	0	0	0	0	0
U235	0	0	0	0	0	0
U236	0	0	0	0	0	0
U238	0.059336577	213865525.5	0.059327518	213832873.2	0.05931846	213800225.9