

Table 1.45. Carcinogenic chronic daily intakes for future industrial worker

----- LOCATION=SWMU 193C MEDIA=McNairy Groundwater -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure
Arsenic	4.27E-05	1.55E-07			
Barium	8.54E-04	3.10E-06			
Beryllium	3.88E-05	1.41E-07			
Cadmium	1.24E-04	4.48E-07			
Chromium	5.01E-04	1.82E-06			
Cobalt	1.86E-04	6.74E-07			
Iron	2.06E-01	7.47E-04			
Lead	8.74E-04	3.17E-06			
Manganese	4.76E-03	1.73E-05			
Mercury	6.99E-07	2.54E-09			
Molybdenum	1.61E-04	5.86E-07			
Nickel	1.88E-04	6.81E-07			
Silica	2.80E-02				
Silver	1.16E-04	4.21E-07			
Tetraoxo-sulfate(1-)	2.30E-02				
Thallium	4.30E-04	1.56E-06			
Uranium	2.24E-05	8.12E-08			
Vanadium	2.92E-03	1.06E-05			
Zinc	7.10E-04	2.58E-06			
1,1,2-Trichloroethane	8.74E-06	2.66E-07		4.77E-06	
1,1-Dichloroethene	8.74E-06	2.82E-07		4.77E-06	
1,2-Dichloroethane	8.74E-06	1.68E-07		4.77E-06	
Benzene	8.74E-06	6.66E-07		4.77E-06	
Bromodichloromethane	8.74E-06	1.84E-07		4.77E-06	
Carbon Tetrachloride	8.74E-06	6.98E-07		4.77E-06	
Chloroform	8.74E-06	2.82E-07		4.77E-06	
Ethylbenzene	8.74E-06	2.35E-06		4.77E-06	
Polychlorinated biphenyl	3.49E-07	4.39E-07			
Tetrachloroethene	8.74E-06	1.17E-05		4.77E-06	
Trichloroethene	4.31E-06	2.50E-07		2.35E-06	
Vinyl Chloride	3.21E-05	8.51E-07		1.75E-05	
Xylene	1.90E-05	6.55E-06		1.04E-05	
cis-1,2-Dichloroethene	1.75E-05	6.34E-07		9.54E-06	
trans-1,2-Dichloroethene	1.75E-05	6.79E-08		9.54E-06	
Radon-222	9.81E+05			6.11E+06	

----- LOCATION=SWMU 193C MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure
1,2-Dichloroethene	1.96E-03	7.63E-06		1.07E-03	
Trichloroethene	5.66E-04	3.29E-05		3.09E-04	

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure
Chromium	9.56E-07	4.11E-06	1.39E-11		
Lead	4.36E-06	1.87E-05	6.33E-11		
Zinc	7.27E-06	3.13E-05	1.06E-10		

Table 1.45. Carcinogenic chronic daily intakes for future industrial worker

----- LOCATION=SWMU 99A MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure
1,1-Dichloroethene	3.64E-05	1.17E-06		1.99E-05	
Carbon Tetrachloride	9.78E-06	7.81E-07		5.34E-06	
Trichloroethene	1.52E-03	8.84E-05		8.31E-04	
cis-1,2-Dichloroethene	4.03E-04	1.46E-05		2.20E-04	

----- LOCATION=SWMU 99A MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure
Aluminum	3.78E-02	1.37E-04			
Arsenic	1.93E-05	6.99E-08			
Barium	1.20E-03	4.36E-06			
Beryllium	3.62E-05	1.31E-07			
Chromium	4.43E-04	1.61E-06			
Cobalt	3.30E-04	1.20E-06			
Copper	2.79E-04	1.01E-06			
Iron	8.10E-02	2.94E-04			
Lead	2.84E-04	1.03E-06			
Lithium	2.60E-04	9.43E-07			
Manganese	5.81E-03	2.11E-05			
Mercury	1.51E-06	5.48E-09			
Nickel	5.36E-04	1.95E-06			
Silica	3.62E-02				
Sulfate	4.14E-02	1.50E-04			
Tetraoxo-sulfate (1-)	3.44E-02				
Vanadium	1.28E-03	4.66E-06			
Zinc	7.87E-04	2.86E-06			
1,1-Dichloroethene	6.25E-05	2.02E-06		3.41E-05	
Trichloroethene	2.36E-03	1.37E-04		1.29E-03	
bis(2-Ethylhexyl)phthalate	3.34E-05	2.84E-06			
cis-1,2-Dichloroethene	2.46E-05	8.93E-07		1.34E-05	
Radon-222	4.14E+06			2.58E+07	
Technetium-99	2.81E+05				

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure
Barium	3.63E-05	1.56E-04	5.28E-10		
Beryllium	1.16E-07	5.01E-07	1.69E-12		
Chromium	1.64E-06	7.07E-06	2.39E-11		
Zinc	1.97E-05	8.48E-05	2.87E-10		
Acenaphthene	5.77E-08	4.96E-07	1.16E-07		
Acenaphthylene	4.57E-08	3.93E-07	6.79E-08		
Anthracene	1.04E-07	8.91E-07	5.85E-08		
Benz(a)anthracene	1.39E-07	1.20E-06	6.49E-09		
Benzo(a)pyrene	8.55E-08	7.35E-07	1.54E-09		
Benzo(b)fluoranthene	2.01E-07	1.73E-06	1.91E-08		
Benzo(ghi)perylene	1.30E-07	1.12E-06	1.89E-12		
Benzo(k)fluoranthene	1.00E-07	8.60E-07	1.12E-09		
Chrysene	2.29E-07	1.97E-06	3.71E-08		
Dibenz(a,h)anthracene	4.38E-08	3.77E-07	1.86E-10		

Table 1.45. Carcinogenic chronic daily intakes for future industrial worker

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure
Dibenzofuran	2.15E-08	1.85E-07	2.34E-08		
Fluoranthene	1.49E-07	1.28E-06	2.15E-08		
Fluorene	3.83E-08	3.29E-07	3.30E-08		
Indeno(1,2,3-cd)pyrene	1.40E-07	1.20E-06	1.08E-09		
PCB-1016	4.16E-08	2.14E-07	3.86E-08		
PCB-1254	1.68E-08	8.66E-08	1.39E-08		
PCB-1260	3.27E-08	1.69E-07	3.22E-08		
Phenanthrene	1.73E-07	1.49E-06	2.52E-12		
Pyrene	1.71E-07	1.47E-06	1.98E-08		
Cesium-137	3.30E+02		4.12E-03		4.83E+00
Neptunium-237	4.00E+03		4.98E-02		5.84E+01
Technetium-99	1.44E+05		1.79E+00		2.10E+03
Thorium-234	6.74E+03		8.40E-02		9.85E+01
Uranium-234	5.13E+03		6.38E-02		7.49E+01
Uranium-238	1.62E+04		2.01E-01		2.36E+02

----- LOCATION=SWMU 99B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure
Barium	1.71E-03	6.22E-06			
Chromium	2.16E-04	7.85E-07			
Iron	7.83E-03	2.84E-05			
Manganese	9.07E-04	3.29E-06			
Silica	3.20E-02				
Sulfate	8.94E-02	3.24E-04			
Tetraxo-sulfate(1-)	5.06E-02				
Zinc	2.04E-04	7.40E-07			
Trichloroethene	7.26E-03	4.22E-04		3.97E-03	
Radon-222	2.58E+06			1.60E+07	

Table 1.46. Noncarcinogenic chronic daily intakes for future adult resident

----- LOCATION-AOC 204 MEDIA-RGA Groundwater -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
1,1-Dichloroethane	1.37E-01	2.21E-03		3.74E-02	4.06E-01	2.07E-01
1,1-Dichloroethene	1.10E-03	1.77E-05		2.99E-04	3.25E-03	1.65E-03
PCB-1254	6.85E-04	4.30E-04				3.56E-04
PCB-1260	6.85E-04	1.32E-03				3.54E-04
Polychlorinated biphenyl	4.66E-03	2.93E-03				2.42E-03
Tetrachloroethene	1.76E-02	1.18E-02		4.80E-03	5.21E-02	1.51E-02
Trichloroethene	1.51E-02	4.39E-04		4.13E-03	4.48E-02	1.45E-02
Vinyl Chloride	2.74E-06	3.63E-08		7.48E-07	8.12E-06	6.05E-06
cis-1,2-Dichloroethene	1.64E-04	2.98E-06		4.49E-05	4.87E-04	2.28E-04
----- LOCATION-SWMU 193A MEDIA-McNairy Groundwater -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Iron	3.62E+00	6.57E-03				1.87E+00
Tetraxo-sulfate(1-)	1.13E+00					
Trichloroethene	1.02E-04	2.96E-06		2.79E-05	3.02E-04	9.81E-05
cis-1,2-Dichloroethene	4.66E-03	8.45E-05		1.27E-03	1.38E-02	6.45E-03
Technetium-99						
Uranium-238						
----- LOCATION-SWMU 193A MEDIA-RGA Groundwater -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Ammonia	8.22E-03	2.24E-05				9.45E-02
Fluoride	1.15E-02	2.09E-05				
Iron	8.28E-01	1.50E-03				4.28E-01
Silica	5.21E-01					
Tetraxo-sulfate(1-)	2.79E+00					
Zinc	2.70E-03	4.91E-06				2.41E-03
1,1-Dichloroethene	5.48E-06	8.85E-08		1.50E-06	1.62E-05	8.27E-06
Pentachlorophenol	2.32E-04	2.74E-04				1.21E-04
Trichloroethene	4.63E-03	1.34E-04		1.26E-03	1.37E-02	4.45E-03
bis(2-Ethylhexyl)phthalate	3.54E-04	1.50E-05				1.88E-04
cis-1,2-Dichloroethene	7.96E-05	1.44E-06		2.17E-05	2.36E-04	1.10E-04
Technetium-99						
----- LOCATION-SWMU 193A MEDIA-Surface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Chromium	1.68E-05	2.93E-05	3.66E-10			3.48E-03
Anthracene	1.59E-07	5.56E-07	1.35E-07			3.57E-05

Table 1.46. Noncarcinogenic chronic daily intakes for future adult resident

----- LOCATION-SWMU 193A MEDIA-Surface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Benz(a)anthracene	2.47E-07	8.63E-07	1.73E-08			5.19E-05
Benzo(a)pyrene	3.42E-07	1.20E-06	9.24E-09			7.17E-05
Benzo(b)fluoranthene	6.99E-08	2.45E-07	9.97E-09			1.46E-05
Benzo(ghi)perylene	2.33E-07	8.15E-07	5.08E-12			4.85E-05
Chrysene	2.33E-07	8.15E-07	5.66E-08			4.90E-05
Di-n-butylphthalate	1.05E-07	3.69E-07	8.63E-09			2.28E-05
Di-n-octylphthalate	1.64E-07	5.75E-07	1.82E-09			3.41E-05
Dibenz(a,h)anthracene	1.78E-07	6.23E-07	1.13E-09			3.71E-05
Fluoranthene	3.74E-07	1.31E-06	8.09E-08			8.09E-05
Indeno(1,2,3-cd)pyrene	2.19E-07	7.67E-07	2.54E-09			4.57E-05
Pyrene	4.04E-07	1.41E-06	7.03E-08			8.74E-05
bis(2-Ethylhexyl)phthalate	2.33E-07	8.15E-07	7.17E-10			5.04E-05

----- LOCATION-SWMU 193B MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Trichloroethene	3.56E-04	1.03E-05		9.73E-05	1.06E-03	3.42E-04
cis-1,2-Dichloroethene	6.30E-04	1.14E-05		1.72E-04	1.87E-03	8.72E-04

----- LOCATION-SWMU 193B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
1,1-Dichloroethene	4.44E-05	7.16E-07		1.21E-05	1.32E-04	6.69E-05
Acetone	9.04E-04	9.34E-07		2.47E-04	2.68E-03	1.41E-02
Carbon Tetrachloride	1.51E-04	6.02E-06		4.11E-05	4.47E-04	1.17E-04
Di-n-butylphthalate	2.78E-04	5.81E-05				1.48E-04
Trichloroethene	1.37E-02	3.98E-04		3.74E-03	4.06E-02	1.32E-02
bis(2-Ethylhexyl)phthalate	2.76E-04	1.17E-05				1.47E-04
cis-1,2-Dichloroethene	2.25E-04	4.09E-06		6.15E-05	6.68E-04	3.12E-04
Technetium-99						

----- LOCATION-SWMU 193B MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Beryllium	2.15E-06	3.76E-06	4.69E-11			4.51E-04
Chromium	1.22E-04	2.13E-04	2.65E-09			2.52E-02
Vanadium	8.90E-05	1.56E-04	1.94E-09			1.86E-02

Table 1.46. Noncarcinogenic chronic daily intakes for future adult resident

----- LOCATION-SWMU 193C MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Aluminum	1.05E+00	1.90E-03				5.42E-01
Antimony	3.13E-01	5.69E-06				1.66E-03
Arsenic	3.34E-04	6.07E-07				1.77E-04
Barium	6.69E-03	1.21E-05				3.48E-03
Beryllium	3.04E-04	5.52E-07				1.58E-04
Cadmium	9.69E-04	1.76E-06				6.90E-04
Chromium	3.92E-03	7.12E-06				2.03E-03
Cobalt	1.46E-03	2.64E-06				8.00E-04
Iron	1.61E+00	2.93E-03				8.33E-01
Lead	6.85E-03	1.24E-05				3.54E-03
Manganese	3.73E-02	6.77E-05				2.29E-02
Mercury	5.48E-06	9.95E-09				5.17E-06
Molybdenum	1.26E-03	2.30E-06				7.97E-04
Nickel	1.47E-03	2.67E-06				8.65E-04
Silica	2.19E-01					
Silver	9.10E-04	1.65E-06				4.70E-04
Tetraxo-sulfate(1-)	1.81E-01					
Thallium	3.37E-03	6.12E-06				1.74E-03
Uranium	1.75E-04	3.18E-07				9.07E-05
Vanadium	2.29E-02	4.16E-05				1.19E-02
Zinc	5.57E-03	1.01E-05				4.97E-03
1,1,2-Trichloroethane	6.85E-05	1.04E-06		1.87E-05	2.03E-04	8.74E-05
1,1-Dichloroethene	6.85E-05	1.11E-06		1.87E-05	2.03E-04	1.03E-04
1,2-Dichloroethane	6.85E-05	6.59E-07		1.87E-05	2.03E-04	1.37E-04
Benzene	6.85E-05	2.61E-06		1.87E-05	2.03E-04	8.09E-05
Bromodichloromethane	6.85E-05	7.21E-07		1.87E-05	2.03E-04	8.09E-05
Carbon Tetrachloride	6.85E-05	2.73E-06		1.87E-05	2.03E-04	5.32E-05
Chloroform	6.85E-05	1.11E-06		1.87E-05	2.03E-04	8.74E-05
Ethylbenzene	6.85E-05	9.20E-06		1.87E-05	2.03E-04	4.73E-05
Polychlorinated biphenyl	2.74E-06	1.72E-06				1.42E-06
Tetrachloroethene	6.85E-05	4.60E-05		1.87E-05	2.03E-04	5.87E-05
Trichloroethene	3.38E-05	9.81E-07		9.22E-06	1.00E-04	3.25E-05
Vinyl Chloride	2.52E-04	3.34E-06		6.88E-05	7.47E-04	5.56E-04
Xylene	1.49E-04	2.57E-05		4.08E-05	4.43E-04	9.70E-05
cis-1,2-Dichloroethene	1.37E-04	2.49E-06		3.74E-05	4.06E-04	1.90E-04
trans-1,2-Dichloroethene	1.37E-04	2.66E-07		3.74E-05	4.06E-04	8.63E-04
Radon-222						

----- LOCATION-SWMU 193C MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
1,2-Dichloroethane	1.54E-02	2.99E-05		4.20E-03	4.57E-02	9.70E-02
Trichloroethene	4.44E-03	1.29E-04		1.21E-03	1.32E-02	4.27E-03

Table 1.46. Noncarcinogenic chronic daily intakes for future adult resident

----- LOCATION-SWMU 193C MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Chromium	7.49E-06	1.31E-05	1.63E-10			1.56E-03
Lead	3.42E-05	5.98E-05	7.45E-10			7.11E-03
Zinc	5.70E-05	9.98E-05	1.24E-09			2.38E-02

----- LOCATION-SWMU 99A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
1,1-Dichloroethene	2.85E-04	4.61E-06		7.79E-05	8.46E-04	4.30E-04
Carbon Tetrachloride	7.67E-05	3.06E-06		2.09E-05	2.27E-04	5.96E-05
Trichloroethene	1.19E-02	3.46E-04		3.26E-03	3.54E-02	1.15E-02
cis-1,2-Dichloroethene	3.16E-03	5.74E-05		8.63E-04	9.38E-03	4.38E-03

----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Aluminum	2.97E-01	5.39E-04				1.54E-01
Arsenic	1.51E-04	2.74E-07				8.01E-05
Barium	9.41E-03	1.71E-05				4.90E-03
Beryllium	2.84E-04	5.15E-07				1.48E-04
Chromium	3.47E-03	6.30E-06				1.79E-03
Cobalt	2.59E-03	4.70E-06				1.42E-03
Copper	2.19E-03	3.97E-06				1.38E-03
Iron	6.35E-01	1.15E-03				3.28E-01
Lead	2.23E-03	4.04E-06				1.15E-03
Lithium	2.04E-03	3.70E-06				1.07E-03
Manganese	4.55E-02	8.27E-05				2.80E-02
Mercury	1.18E-05	2.15E-08				1.12E-05
Nickel	4.21E-03	7.63E-06				2.47E-03
Silica	2.84E-01					
Sulfate	3.25E-01	5.90E-04				
Tetraoxo-sulfate (1-)	2.69E-01					
Vanadium	1.01E-02	1.83E-05				5.21E-03
Zinc	6.17E-03	1.12E-05				5.51E-03
1,1-Dichloroethene	4.90E-04	7.91E-06		1.34E-04	1.45E-03	7.39E-04
Trichloroethene	1.85E-02	5.38E-04		5.06E-03	5.49E-02	1.78E-02
bis (2-Ethylhexyl)phthalate	2.62E-04	1.11E-05				1.39E-04
cis-1,2-Dichloroethene	1.93E-04	3.50E-06		5.27E-05	5.72E-04	2.67E-04
Radon-222						
Technetium-99						

Table 1.46. Noncarcinogenic chronic daily intakes for future adult resident

----- LOCATION-SWMU 99A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Barium	2.85E-04	4.99E-04	6.21E-09			5.98E-02
Beryllium	9.13E-07	1.60E-06	1.99E-11			1.91E-04
Chromium	1.29E-05	2.25E-05	2.81E-10			2.67E-03
Zinc	1.55E-04	2.71E-04	3.37E-09			6.47E-02
Acenaphthene	4.52E-07	1.58E-06	1.37E-06			1.03E-04
Acenaphthylene	3.59E-07	1.26E-06	7.99E-07			9.01E-05
Anthracene	8.12E-07	2.84E-06	6.88E-07			1.82E-04
Benz(a)anthracene	1.09E-06	3.81E-06	7.63E-08			2.29E-04
Benzo(a)pyrene	6.70E-07	2.35E-06	1.81E-08			1.40E-04
Benzo(b)fluoranthene	1.58E-06	5.52E-06	2.25E-07			3.30E-04
Benzo(ghi)perylene	1.02E-06	3.58E-06	2.23E-11			2.13E-04
Benzo(k)fluoranthene	7.84E-07	2.74E-06	1.32E-08			1.63E-04
Chrysene	1.79E-06	6.28E-06	4.36E-07			3.78E-04
Dibenz(a,h)anthracene	3.43E-07	1.20E-06	2.18E-09			7.15E-05
Dibenzo furan	1.68E-07	5.90E-07	2.75E-07			3.55E-05
Fluoranthene	1.17E-06	4.08E-06	2.52E-07			2.52E-04
Fluorene	3.00E-07	1.05E-06	3.88E-07			6.74E-05
Indeno(1,2,3-cd)pyrene	1.10E-06	3.84E-06	1.27E-08			2.29E-04
PCB-1016	3.26E-07	6.84E-07	4.54E-07			6.83E-05
PCB-1254	1.32E-07	2.76E-07	1.64E-07			1.76E-05
PCB-1260	2.56E-07	5.38E-07	3.78E-07			5.33E-05
Phenanthrene	1.36E-06	4.76E-06	2.96E-11			3.00E-04
Pyrene	1.34E-06	4.68E-06	2.33E-07			2.89E-04
Cesium-137						
Neptunium-237						
Technetium-99						
Thorium-234						
Uranium-234						
Uranium-238						

----- LOCATION-SWMU 99B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Barium	1.34E-02	2.44E-05				7.00E-03
Chromium	1.70E-03	3.08E-06				8.76E-04
Iron	6.14E-02	1.11E-04				3.17E-02
Manganese	7.11E-03	1.29E-05				4.37E-03
Silica	2.51E-01					
Sulfate	7.01E-01	1.27E-03				
Tetraoxo-sulfate(1-)	3.97E-01					
Zinc	1.60E-03	2.90E-06				1.43E-03
Trichloroethene	5.69E-02	1.65E-03		1.56E-02	1.69E-01	5.48E-02
Radon-222						

Table 1.47. Noncarcinogenic chronic daily intakes for future child resident

----- LOCATION=AOC 204 MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
1,1-Dichloroethane	3.31E-01	4.24E-03		1.81E-01	1.96E+00	6.50E-01
1,1-Dichloroethene	2.65E-03	3.39E-05		1.44E-03	1.57E-02	5.20E-03
PCB-1254	1.65E-03	8.24E-04				1.12E-03
PCB-1260	1.65E-03	2.54E-03				1.11E-03
Polychlorinated biphenyl	1.12E-02	5.60E-03				7.62E-03
Tetrachloroethene	4.24E-02	2.26E-02		2.32E-02	2.51E-01	4.74E-02
Trichloroethene	3.65E-02	8.40E-04		1.99E-02	2.16E-01	4.57E-02
Vinyl Chloride	6.61E-06	6.95E-08		3.61E-06	3.92E-05	1.90E-05
cis-1,2-Dichloroethene	3.97E-04	5.71E-06		2.17E-04	2.35E-03	7.16E-04

----- LOCATION=SWMU 193A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Iron	8.74E+00	1.26E-02				5.89E+00
Tetraoxo-sulfate (1-)	2.72E+00					
Trichloroethene	2.46E-04	5.67E-06		1.34E-04	1.46E-03	3.09E-04
cis-1,2-Dichloroethene	1.12E-02	1.62E-04		6.14E-03	6.67E-02	2.03E-02
Technetium-99						
Uranium-238						

----- LOCATION=SWMU 193A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Ammonia	1.98E-02	4.28E-05				2.97E-01
Fluoride	2.78E-02	4.00E-05				
Iron	2.00E+00	2.88E-03				1.35E+00
Silica	1.26E+00					
Tetraoxo-sulfate (1-)	6.74E+00					
Zinc	6.53E-03	9.40E-06				7.59E-03
1,1-Dichloroethene	1.32E-05	1.70E-07		7.22E-06	7.84E-05	2.60E-05
Pentachlorophenol	5.60E-04	5.24E-04				3.80E-04
Trichloroethene	1.12E-02	2.57E-04		6.10E-03	6.63E-02	1.40E-02
bis(2-Ethylhexyl)phthalate	8.53E-04	2.88E-05				5.92E-04
cis-1,2-Dichloroethene	1.92E-04	2.77E-06		1.05E-04	1.14E-03	3.47E-04
Technetium-99						

----- LOCATION=SWMU 193A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Chromium	1.62E-04	1.51E-04	3.66E-10			1.09E-02
Anthracene	1.53E-06	2.86E-06	1.35E-07			1.12E-04

Table 1.47. Noncarcinogenic chronic daily intakes for future child resident

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----						
(continued)						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Benz(a)anthracene	2.38E-05	4.44E-06	1.73E-08			1.63E-04
Benzo(a)pyrene	3.31E-05	6.17E-06	9.24E-09			2.25E-04
Benzo(b)fluoranthene	6.75E-07	1.26E-06	9.97E-09			4.60E-05
Benzo(ghi)perylene	2.25E-05	4.19E-06	5.08E-12			1.53E-04
Chrysene	2.25E-05	4.19E-06	5.66E-08			1.54E-04
Di-n-butylphthalate	1.02E-05	1.90E-06	8.63E-09			7.18E-05
Di-n-octylphthalate	1.59E-06	2.96E-06	1.82E-09			1.07E-04
Dibenz(a,h)anthracene	1.72E-06	3.21E-06	1.13E-09			1.17E-04
Fluoranthene	3.61E-06	6.73E-06	8.09E-08			2.54E-04
Indeno(1,2,3-cd)pyrene	2.12E-05	3.95E-06	2.54E-09			1.44E-04
Pyrene	3.90E-05	7.28E-06	7.03E-08			2.75E-04
bis(2-Ethylhexyl)phthalate	2.25E-06	4.19E-06	7.17E-10			1.58E-04

----- LOCATION=SWMU 193B MEDIA=McNairy Groundwater -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Trichloroethene	8.60E-04	1.98E-05		4.70E-04	5.10E-03	1.08E-03
cis-1,2-Dichloroethene	1.52E-03	2.19E-05		8.31E-04	9.02E-03	2.74E-03

----- LOCATION=SWMU 193B MEDIA=RGA Groundwater -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
1,1-Dichloroethene	1.07E-04	1.37E-06		5.85E-05	6.35E-04	2.10E-04
Acetone	2.18E-03	1.79E-06		1.19E-03	1.29E-02	4.45E-02
Carbon Tetrachloride	3.64E-04	1.15E-05		1.99E-04	2.16E-03	3.60E-04
Di-n-butylphthalate	6.72E-04	1.11E-04				4.66E-04
Trichloroethene	3.31E-02	7.62E-04		1.81E-02	1.96E-01	4.14E-02
bis(2-Ethylhexyl)phthalate	6.67E-04	2.25E-05				4.62E-04
cis-1,2-Dichloroethene	5.43E-04	7.83E-06		2.97E-04	3.22E-03	9.81E-04
Technetium-99						

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Beryllium	2.08E-05	1.94E-05	4.69E-11			1.42E-03
Chromium	1.17E-03	1.09E-03	2.65E-09			7.93E-02
Vanadium	8.60E-04	8.02E-04	1.94E-09			5.84E-02

Table 1.47. Noncarcinogenic chronic daily intakes for future child resident

----- LOCATION-SWMU 193C MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Aluminum	2.53E+00	3.64E-03				1.70E+00
Antimony	7.56E-03	1.09E-05				5.23E-03
Arsenic	8.07E-04	1.16E-06				5.58E-04
Barium	1.62E-02	2.33E-05				1.10E-02
Beryllium	7.34E-04	1.06E-06				4.97E-04
Cadmium	2.34E-03	3.37E-06				2.17E-03
Chromium	9.47E-03	1.36E-05				6.37E-03
Cobalt	3.52E-03	5.06E-06				2.52E-03
Iron	3.89E+00	5.61E-03				2.62E+00
Lead	1.65E-02	2.38E-05				1.11E-02
Manganese	9.01E-02	1.30E-04				7.21E-02
Mercury	1.32E-05	1.90E-08				1.63E-05
Molybdenum	3.05E-03	4.40E-06				2.51E-03
Nickel	3.55E-03	5.12E-06				2.72E-03
Silica	5.29E-01					
Silver	2.20E-03	3.16E-06				1.48E-03
Tetraxo-sulfate (1-)	4.36E-01					
Thallium	8.13E-03	1.17E-05				5.49E-03
Uranium	4.23E-04	6.10E-07				2.85E-04
Vanadium	5.53E-02	7.96E-05				3.73E-02
Zinc	1.34E-02	1.94E-05				1.56E-02
1,1,2-Trichloroethane	1.65E-04	2.00E-06		9.03E-05	9.81E-04	2.75E-04
1,1-Dichloroethane	1.65E-04	2.12E-06		9.03E-05	9.81E-04	3.25E-04
1,2-Dichloroethane	1.65E-04	1.26E-06		9.03E-05	9.81E-04	4.30E-04
Benzene	1.65E-04	5.00E-06		9.03E-05	9.81E-04	2.54E-04
Bromodichloromethane	1.65E-04	1.38E-06		9.03E-05	9.81E-04	2.54E-04
Carbon Tetrachloride	1.65E-04	5.24E-06		9.03E-05	9.81E-04	1.67E-04
Chloroform	1.65E-04	2.12E-06		9.03E-05	9.81E-04	2.75E-04
Ethylbenzene	1.65E-04	1.76E-05		9.03E-05	9.81E-04	1.49E-04
Polychlorinated biphenyl	6.61E-06	3.30E-06				4.48E-06
Tetrachloroethene	1.65E-04	8.81E-05		9.03E-05	9.81E-04	1.85E-04
Trichloroethene	8.15E-05	1.88E-06		4.45E-05	4.84E-04	1.02E-04
Vinyl Chloride	6.08E-04	6.39E-06		3.32E-04	3.61E-03	1.75E-03
Xylene	3.60E-04	4.91E-05		1.97E-04	2.14E-03	3.05E-04
cis-1,2-Dichloroethane	3.31E-04	4.76E-06		1.81E-04	1.96E-03	5.97E-04
trans-1,2-Dichloroethane	3.31E-04	5.10E-07		1.81E-04	1.96E-03	2.72E-03
Radon-222						

----- LOCATION-SWMU 193C MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
1,2-Dichloroethane	3.72E-02	5.73E-05		2.03E-02	2.20E-01	3.05E-01
Trichloroethane	1.07E-02	2.47E-04		5.85E-03	6.35E-02	1.34E-02

Table 1.47. Noncarcinogenic chronic daily intakes for future child resident

----- LOCATION-SWMU 193C MEDIA-Surface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Chromium	7.23E-05	6.75E-05	1.63E-10			4.89E-03
Lead	3.30E-04	3.08E-04	7.45E-10			2.24E-02
Zinc	5.50E-04	5.13E-04	1.24E-09			7.50E-02
----- LOCATION-SWMU 99A MEDIA-McNairy Groundwater -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
1,1-Dichloroethene	6.88E-04	8.82E-06		3.76E-04	4.08E-03	1.35E-03
Carbon Tetrachloride	1.85E-04	5.87E-06		1.01E-04	1.10E-03	1.88E-04
Trichloroethene	2.88E-02	6.64E-04		1.57E-02	1.71E-01	3.61E-02
cis-1,2-Dichloroethene	7.63E-03	1.10E-04		4.17E-03	4.53E-02	1.38E-02
----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Aluminum	7.16E-01	1.03E-03				4.83E-01
Arsenic	3.64E-04	5.25E-07				2.52E-04
Barium	2.27E-02	3.27E-05				1.54E-02
Beryllium	6.85E-04	9.87E-07				4.64E-04
Chromium	8.39E-03	1.21E-05				5.64E-03
Cobalt	6.24E-03	8.99E-05				4.47E-03
Copper	5.28E-03	7.60E-06				4.33E-03
Iron	1.53E+00	2.21E-03				1.03E+00
Lead	5.37E-03	7.74E-05				3.62E-03
Lithium	4.92E-03	7.08E-06				3.37E-03
Manganese	1.10E-01	1.58E-04				8.80E-02
Mercury	2.85E-05	4.11E-08				3.51E-05
Nickel	1.02E-02	1.46E-05				7.77E-03
Silica	6.85E-01					
Sulfate	7.84E-01	1.13E-03				
Tetraoxo-sulfate (1-)	6.50E-01					
Vanadium	2.43E-02	3.50E-05				1.64E-02
Zinc	1.49E-02	2.14E-05				1.73E-02
1,1-Dichloroethene	1.18E-03	1.52E-05		6.46E-04	7.01E-03	2.33E-03
Trichloroethene	4.47E-02	1.03E-03		2.44E-02	2.65E-01	5.60E-02
bis(2-Ethylhexyl)phthalate	6.32E-04	2.13E-05				4.38E-04
cis-1,2-Dichloroethene	4.65E-04	6.70E-06		2.54E-04	2.76E-03	8.40E-04
Radon-222						
Technetium-99						

Table 1.47. Noncarcinogenic chronic daily intakes for future child resident

----- LOCATION-SMMU 99A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Barium	2.75E-03	2.57E-03	6.21E-09			1.88E-01
Beryllium	8.82E-06	8.22E-06	1.99E-11			6.02E-04
Chromium	1.24E-04	1.16E-04	2.81E-10			8.41E-03
Zinc	1.49E-03	1.39E-03	3.37E-09			2.03E-01
Acenaphthene	4.36E-06	8.14E-06	1.37E-06			3.23E-04
Acenaphthylene	3.46E-06	6.46E-06	7.99E-07			2.84E-04
Anthracene	7.84E-06	1.46E-05	6.88E-07			5.74E-04
Benz(a)anthracene	1.05E-05	1.96E-05	7.63E-08			7.22E-04
Benzo(a)pyrene	6.47E-06	1.21E-05	1.81E-08			4.41E-04
Benzo(b)fluoranthene	1.52E-05	2.84E-05	2.25E-07			1.04E-03
Benzo(ghi)perylene	9.87E-06	1.84E-05	2.23E-11			6.70E-04
Benzo(k)fluoranthene	7.57E-06	1.41E-05	1.32E-08			5.13E-04
Chrysene	1.73E-05	3.23E-05	4.36E-07			1.19E-03
Dibenz(a,h)anthracene	3.31E-06	6.18E-06	2.18E-09			2.25E-04
Dibenzofuran	1.63E-06	3.03E-06	2.75E-07			1.12E-04
Fluoranthene	1.13E-05	2.10E-05	2.52E-07			7.94E-04
Fluorene	2.90E-06	5.40E-06	3.88E-07			2.12E-04
Indeno(1,2,3-cd)pyrene	1.06E-05	1.97E-05	1.27E-08			7.19E-04
PCB-1016	3.15E-06	3.52E-06	4.54E-07			2.15E-04
PCB-1254	1.27E-06	1.42E-06	1.64E-07			8.67E-05
PCB-1260	2.48E-06	2.77E-06	3.78E-07			1.68E-04
Phenanthrene	1.31E-05	2.45E-05	2.96E-11			9.43E-04
Pyrene	1.29E-05	2.41E-05	2.33E-07			9.10E-04
Cesium-137						
Neptunium-237						
Technetium-99						
Thorium-234						
Uranium-234						
Uranium-238						

----- LOCATION-SMMU 99B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	Ingestion of vegetables
Barium	3.24E-02	4.67E-05				2.20E-02
Chromium	4.09E-03	5.89E-06				2.75E-03
Iron	1.48E-01	2.13E-04				9.98E-02
Manganese	1.72E-02	2.47E-05				1.37E-02
Silica	6.06E-01					
Sulfate	1.69E+00	2.44E-03				
Tetraxoxo-sulfate(1-)	9.57E-01					
Zinc	3.86E-03	5.56E-06				4.49E-03
Trichloroethene	1.37E-01	3.17E-03		7.51E-02	8.15E-01	1.72E-01
Radon-222						

Table 1.48. Carcinogenic chronic daily intakes for future adult resident

----- LOCATION=AOC 204 MEDIA-RGA Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
1,1-Dichloroethane	6.65E-02	1.07E-03		1.82E-02	1.97E-01		1.00E-01
1,1-Dichloroethene	5.32E-04	8.50E-06		1.45E-04	1.58E-03		8.03E-04
PCB-1254	3.33E-04	2.09E-04					1.73E-04
PCB-1260	3.33E-04	6.43E-04					1.72E-04
Polychlorinated biphenyl	2.26E-03	1.42E-03					1.18E-03
Tetrachloroethane	8.53E-03	5.73E-03		2.33E-03	2.53E-02		7.31E-03
Trichloroethane	7.34E-03	2.13E-04		2.00E-03	2.18E-02		7.06E-03
Vinyl Chloride	1.33E-06	1.76E-08		3.63E-07	3.95E-06		2.94E-06
cis-1,2-Dichloroethene	7.98E-05	1.45E-06		2.18E-05	2.37E-04		1.11E-04
----- LOCATION-SWMU 193A MEDIA-McNairy Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Iron	1.76E+00	3.19E-03					9.09E-01
Tetraxo-sulfate(1-)	5.47E-01						
Trichloroethene	4.95E-05	1.44E-06		1.35E-05	1.47E-04		4.76E-05
cis-1,2-Dichloroethene	2.26E-03	4.11E-05		6.18E-04	6.71E-03		3.13E-03
Technetium-99	8.77E+05						2.61E+08
Uranium-238	3.14E+04						1.63E+04
----- LOCATION-SWMU 193A MEDIA-RGA Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Ammonia	3.99E-03	1.09E-05					4.59E-02
Fluoride	5.59E-03	1.01E-05					
Iron	4.02E-01	7.30E-04					2.08E-01
Silica	2.53E-01						
Tetraxo-sulfate(1-)	1.36E+00						
Zinc	1.31E-03	2.38E-06					1.17E-03
1,1-Dichloroethene	2.66E-06	4.30E-08		7.27E-07	7.89E-06		4.02E-06
Pentachlorophenol	1.13E-04	1.33E-04					5.86E-05
Trichloroethane	2.25E-03	6.53E-05		6.14E-04	6.67E-03		2.16E-03
bis(2-Ethylhexyl) phthalate	1.72E-04	7.29E-06					9.14E-05
cis-1,2-Dichloroethene	3.87E-05	7.02E-07		1.06E-05	1.15E-04		5.35E-05
Technetium-99	4.58E+06						1.36E+09
----- LOCATION-SWMU 193A MEDIA-Surface Soil -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Chromium	8.14E-06	1.43E-05	1.78E-10				1.69E-03
Anthracene	7.72E-08	2.70E-07	6.54E-08				1.73E-05

Table 1.48. Carcinogenic chronic daily intakes for future adult resident

----- LOCATION-SWMU 193A MEDIA-Surface Soil -----							
(continued)							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Benz(a)anthracene	1.20E-07	4.19E-07	8.39E-09				2.52E-05
Benzo(a)pyrene	1.66E-07	5.82E-07	4.49E-09				3.48E-05
Benzo(b)fluoranthene	3.39E-08	1.19E-07	4.84E-09				7.10E-06
Benzo(ghi)perylene	1.13E-07	3.96E-07	2.47E-12				2.36E-05
Chrysene	1.13E-07	3.96E-07	2.75E-08				2.38E-05
Di-n-butylphthalate	5.12E-08	1.79E-07	4.19E-09				1.11E-05
Di-n-octylphthalate	7.98E-08	2.79E-07	8.82E-10				1.66E-05
Dibenz(a,h)anthracene	8.65E-08	3.03E-07	5.50E-10				1.80E-05
Fluoranthene	1.82E-07	6.36E-07	3.93E-08				3.93E-05
Indeno(1,2,3-cd)pyrene	1.06E-07	3.73E-07	1.23E-09				2.22E-05
Pyrene	1.96E-07	6.87E-07	3.42E-08				4.25E-05
bis(2-Ethylhexyl)phthalate	1.13E-07	3.96E-07	3.48E-10				2.45E-05
----- LOCATION-SWMU 193B MEDIA-McNairy Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Trichloroethene	1.73E-04	5.02E-06		4.72E-05	5.13E-04		1.66E-04
cis-1,2-Dichloroethane	3.06E-04	5.56E-06		8.36E-05	9.08E-04		4.24E-04
----- LOCATION-SWMU 193B MEDIA-RGA Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
1,1-Dichloroethene	2.15E-05	3.48E-07		5.88E-06	6.39E-05		3.25E-05
Acetone	4.39E-04	4.54E-07		1.20E-04	1.30E-03		6.87E-03
Carbon Tetrachloride	7.32E-05	2.92E-06		2.00E-05	2.17E-04		5.69E-05
Di-n-butylphthalate	1.35E-04	2.82E-05					7.19E-05
Trichloroethene	6.65E-03	1.93E-04		1.82E-03	1.97E-02		6.40E-03
bis(2-Ethylhexyl)phthalate	1.34E-04	5.70E-06					7.14E-05
cis-1,2-Dichloroethane	1.09E-04	1.98E-06		2.99E-05	3.24E-04		1.51E-04
Technatium-99	6.50E+05						1.93E+08
----- LOCATION-SWMU 193B MEDIA-Surface Soil -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Beryllium	1.04E-06	1.83E-06	2.28E-11				2.19E-04
Chromium	5.90E-05	1.03E-04	1.29E-09				1.22E-02
Vanadium	4.32E-05	7.57E-05	9.43E-10				9.02E-03

Table 1.48. Carcinogenic chronic daily intakes for future adult resident

----- LOCATION-SWMU 193C MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Aluminum	5.08E-01	9.23E-04					2.63E-01
Antimony	1.52E-03	2.76E-06					8.07E-04
Arsenic	1.62E-04	2.95E-07					8.62E-05
Barium	3.25E-03	5.90E-06					1.69E-03
Beryllium	1.48E-04	2.68E-07					7.68E-05
Cadmium	4.70E-04	8.54E-07					3.35E-04
Chromium	1.91E-03	3.46E-06					9.84E-04
Cobalt	7.07E-04	1.28E-06					3.89E-04
Iron	7.81E-01	1.42E-03					4.05E-01
Lead	3.33E-03	6.04E-06					1.72E-03
Manganese	1.81E-02	3.29E-05					1.11E-02
Mercury	2.66E-06	4.83E-09					2.51E-06
Molybdenum	6.14E-04	1.11E-06					3.87E-04
Nickel	7.15E-04	1.30E-06					4.20E-04
Silica	1.07E-01						
Silver	4.42E-04	8.02E-07					2.28E-04
Tetraoxo-sulfate(1-)	8.77E-02						
Thallium	1.64E-03	2.97E-06					8.47E-04
Uranium	8.52E-05	1.55E-07					4.40E-05
Vanadium	1.11E-02	2.02E-05					5.76E-03
Zinc	2.70E-03	4.91E-06					2.41E-03
1,1,2-Trichloroethane	3.33E-05	5.07E-07		9.08E-06	9.87E-05		4.24E-05
1,1-Dichloroethane	3.33E-05	5.37E-07		9.08E-06	9.87E-05		5.02E-05
1,2-Dichloroethane	3.33E-05	3.20E-07		9.08E-06	9.87E-05		6.65E-05
Benzene	3.33E-05	1.27E-06		9.08E-06	9.87E-05		3.93E-05
Bromodichloromethane	3.33E-05	3.50E-07		9.08E-06	9.87E-05		3.93E-05
Carbon Tetrachloride	3.33E-05	1.33E-06		9.08E-06	9.87E-05		2.59E-05
Chloroform	3.33E-05	5.37E-07		9.08E-06	9.87E-05		4.24E-05
Ethylbenzene	3.33E-05	4.47E-06		9.08E-06	9.87E-05		2.30E-05
Polychlorinated biphenyl	1.33E-06	8.36E-07					6.92E-07
Tetrachloroethene	3.33E-05	2.23E-05		9.08E-06	9.87E-05		2.85E-05
Trichloroethene	1.64E-05	4.76E-07		4.48E-06	4.87E-05		1.58E-05
Vinyl Chloride	1.22E-04	1.62E-06		3.34E-05	3.63E-04		2.70E-04
Xylene	7.25E-05	1.25E-05		1.98E-05	2.15E-04		4.71E-05
cis-1,2-Dichloroethene	6.65E-05	1.21E-06		1.82E-05	1.97E-04		9.21E-05
trans-1,2-Dichloroethene	6.65E-05	1.29E-07		1.82E-05	1.97E-04		4.19E-04
Radon-222	3.74E+06			1.16E+07	1.24E+06		1.24E+05

----- LOCATION-SWMU 193C MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
1,2-Dichloroethane	7.48E-03	1.45E-05		2.04E-03	2.22E-02		4.71E-02
Trichloroethane	2.16E-03	6.26E-05		5.89E-04	6.39E-03		2.07E-03

Table 1.48. Carcinogenic chronic daily intakes for future adult resident

----- LOCATION-SWMU 193C MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Chromium	3.64E-06	6.37E-06	7.93E-11				7.55E-04
Lead	1.66E-05	2.90E-05	3.62E-10				3.45E-03
Zinc	2.77E-05	4.85E-05	6.04E-10				1.16E-02

----- LOCATION-SWMU 99A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
1,1-Dichloroethane	1.38E-04	2.24E-06		3.78E-05	4.11E-04		2.09E-04
Carbon Tetrachloride	3.73E-05	1.49E-06		1.02E-05	1.10E-04		2.90E-05
Trichloroethane	5.80E-03	1.68E-04		1.58E-03	1.72E-02		5.57E-03
cis-1,2-Dichloroethane	1.54E-03	1.79E-05		4.19E-04	4.55E-03		2.13E-03

----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Aluminum	1.44E-01	2.62E-04					7.46E-02
Arsenic	7.33E-05	1.33E-07					3.89E-05
Barium	4.57E-03	8.29E-06					2.38E-03
Beryllium	1.38E-04	2.50E-07					7.17E-05
Chromium	1.69E-03	3.06E-06					8.71E-04
Cobalt	1.26E-03	2.28E-06					6.90E-04
Copper	1.06E-03	1.93E-06					6.69E-04
Iron	3.09E-01	5.60E-04					1.59E-01
Lead	1.08E-03	1.96E-06					5.59E-04
Lithium	9.90E-04	1.80E-06					5.20E-04
Manganese	2.21E-02	4.01E-05					1.36E-02
Mercury	5.74E-06	1.04E-08					5.42E-06
Nickel	2.04E-03	3.71E-06					1.20E-03
Silica	1.38E-01						
Sulfate	1.58E-01	2.86E-04					
Tetraoxo-sulfate(1-)	1.31E-01						
Vanadium	4.89E-03	8.87E-06					2.53E-03
Zinc	3.00E-03	5.44E-06					2.68E-03
1,1-Dichloroethane	2.38E-04	3.84E-06		6.50E-05	7.06E-04		3.59E-04
Trichloroethane	8.99E-03	2.61E-04		2.46E-03	2.67E-02		8.65E-03
bis(2-Ethylhexyl)phthalate	1.27E-04	5.40E-06					6.77E-05
cis-1,2-Dichloroethane	9.37E-05	1.70E-06		2.56E-05	2.78E-04		1.30E-04
Radon-222	1.58E+07			4.91E+07	5.25E+06		5.21E+05
Technetium-99	1.07E+06						3.18E+08

Table 1.48. Carcinogenic chronic daily intakes for future adult resident

----- LOCATION-SWMU 99A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Barium	1.38E-04	2.42E-04	3.02E-09				2.90E-02
Beryllium	4.44E-07	7.76E-07	9.67E-12				9.29E-05
Chromium	6.26E-06	1.09E-05	1.36E-10				1.30E-03
Zinc	7.51E-05	1.11E-04	1.64E-09				3.14E-02
Acenaphthene	2.20E-07	7.68E-07	6.65E-07				4.99E-05
Acanaphthylene	1.74E-07	6.10E-07	3.88E-07				4.38E-05
Anthracene	3.94E-07	1.38E-06	3.34E-07				8.86E-05
Benz(a)anthracene	5.29E-07	1.85E-06	3.71E-08				1.11E-04
Benzo(a)pyrene	3.25E-07	1.14E-06	8.78E-09				6.81E-05
Benzo(b)fluoranthene	7.66E-07	2.68E-06	1.09E-07				1.60E-04
Benzo(ghi)perylene	4.96E-07	1.74E-06	1.08E-11				1.03E-04
Benzo(k)fluoranthene	3.81E-07	1.33E-06	6.40E-09				7.93E-05
Chrysene	8.71E-07	3.05E-06	2.12E-07				1.83E-04
Dibenz(a,h)anthracene	1.67E-07	5.84E-07	1.06E-09				3.47E-05
Dibenzofuran	8.18E-08	2.86E-07	1.34E-07				1.72E-05
Fluoranthene	5.66E-07	1.98E-06	1.23E-07				1.23E-04
Fluorene	1.46E-07	5.10E-07	1.89E-07				3.27E-05
Indeno(1,2,3-cd)pyrene	5.33E-07	1.86E-06	6.18E-09				1.11E-04
PCB-1016	1.58E-07	3.32E-07	2.21E-07				3.32E-05
PCB-1254	6.39E-08	1.34E-07	7.95E-08				1.34E-05
PCB-1260	1.25E-07	2.62E-07	1.84E-07				2.59E-05
Phenanthrene	6.60E-07	2.31E-06	1.44E-11				1.46E-04
Pyrene	6.49E-07	2.27E-06	1.13E-07				1.40E-04
Cesium-137	1.26E+03		7.83E-03			2.76E+01	2.78E+05
Neptunium-237	1.52E+04		9.48E-02			3.34E+02	3.20E+06
Technetium-99	5.48E+05		3.41E+00			1.20E+04	9.11E+10
Thorium-234	2.57E+04		1.60E-01			5.62E+02	5.33E+06
Uranium-234	1.95E+04		1.22E-01			4.28E+02	4.06E+06
Uranium-238	6.15E+04		3.83E-01			1.35E+03	1.29E+07

----- LOCATION-SWMU 99B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Barium	6.53E-03	1.19E-05					3.40E-03
Chromium	8.24E-04	1.50E-06					4.25E-04
Iron	2.98E-02	5.41E-05					1.54E-02
Manganese	3.45E-03	6.27E-06					2.12E-03
Silica	1.22E-01						
Sulfate	3.40E-01	6.18E-04					
Tetraoxo-sulfate(1-)	1.93E-01						
Zinc	7.76E-04	1.41E-06					6.93E-04
Trichloroethene	2.77E-02	8.03E-04		7.55E-03	8.20E-02		2.66E-02
Radon-222	9.81E+06			3.05E+07	3.26E+06		3.24E+05

Table 1.49. Carcinogenic chronic daily intakes for future child resident

----- LOCATION=AOC 204 MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
1,1-Dichloroethane	2.83E-02	3.63E-04		1.55E-02	1.68E-01		5.57E-02
1,1-Dichloroethane	2.27E-04	2.91E-06		1.24E-04	1.34E-03		4.46E-04
PCB-1254	1.42E-04	7.06E-05					9.60E-05
PCB-1260	1.42E-04	2.17E-04					9.55E-05
Polychlorinated biphenyl	9.64E-04	4.80E-04					6.53E-04
Tetrachloroethene	3.63E-03	1.94E-03		1.98E-03	2.16E-02		4.06E-03
Trichloroethene	3.13E-03	7.20E-05		1.71E-03	1.85E-02		3.92E-03
Vinyl Chloride	5.67E-07	5.96E-09		3.10E-07	3.36E-06		1.63E-06
cis-1,2-Dichloroethene	3.40E-05	4.90E-07		1.86E-05	2.02E-04		6.14E-05

----- LOCATION=SNMU 193A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Iron	7.49E-01	1.08E-03					5.05E-01
Tetraoxo-sulfate(1-)	2.33E-01						
Trichloroethene	2.11E-05	4.86E-07		1.15E-05	1.25E-04		2.64E-05
cis-1,2-Dichloroethene	9.64E-04	1.39E-05		5.26E-04	5.72E-03		1.74E-03
Technetium-99	7.74E+04						3.00E+07
Uranium-238	2.77E+03						1.88E+03

----- LOCATION=SNMU 193A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Ammonia	1.70E-03	3.67E-06					2.55E-02
Fluoride	2.38E-03	3.43E-06					
Iron	1.71E-01	2.47E-04					1.15E-01
Silica	1.08E-01						
Tetraoxo-sulfate(1-)	5.78E-01						
Zinc	5.59E-04	8.05E-07					6.51E-04
1,1-Dichloroethene	1.13E-06	1.45E-08		6.19E-07	6.72E-06		2.23E-06
Pentachlorophenol	4.80E-05	4.49E-05					3.26E-05
Trichloroethene	9.58E-04	2.21E-05		5.23E-04	5.68E-03		1.20E-03
bis(2-Ethylhexyl) phthalate	7.32E-05	2.47E-06					5.07E-05
cis-1,2-Dichloroethene	1.65E-05	2.37E-07		8.99E-06	9.77E-05		2.97E-05
Technetium-99	4.04E+05						1.57E+08

----- LOCATION=SNMU 193A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Chromium	1.39E-05	1.29E-05	3.13E-11				9.38E-04
Anthracene	1.32E-07	2.45E-07	1.15E-08				9.63E-06

Table 1.49. Carcinogenic chronic daily intakes for future child resident

----- LOCATION-SWMU 193A MEDIA-Surface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Benz(a)anthracene	2.04E-07	3.81E-07	1.48E-09				1.40E-05
Benzo(a)pyrene	2.83E-07	5.29E-07	7.92E-10				1.93E-05
Benzo(b)fluoranthene	5.78E-08	1.08E-07	8.55E-10				3.94E-06
Benzo(ghi)perylene	1.93E-07	3.59E-07	4.35E-13				1.31E-05
Chrysene	1.93E-07	3.59E-07	4.85E-09				1.32E-05
Di-n-butylphthalate	8.73E-08	1.63E-07	7.40E-10				6.15E-06
Di-n-octylphthalate	1.36E-07	2.54E-07	1.56E-10				9.20E-06
Dibenz(a,b)anthracene	1.47E-07	2.75E-07	9.70E-11				1.00E-05
Fluoranthene	3.09E-07	5.77E-07	6.93E-09				2.18E-05
Indeno(1,2,3-cd)pyrene	1.81E-07	3.38E-07	2.18E-10				1.23E-05
Pyrene	3.34E-07	6.24E-07	6.03E-09				2.36E-05
bis(2-Ethylhexyl)phthalate	1.93E-07	3.59E-07	6.15E-11				1.36E-05

----- LOCATION-SWMU 193B MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Trichloroethene	7.37E-05	1.70E-06		4.02E-05	4.37E-04		9.23E-05
cis-1,2-Dichloroethene	1.30E-04	1.88E-06		7.12E-05	7.73E-04		2.35E-04

----- LOCATION-SWMU 193B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
1,1-Dichloroethene	9.18E-06	1.18E-07		5.01E-06	5.44E-05		1.80E-05
Acetone	1.87E-04	1.53E-07		1.02E-04	1.11E-03		3.81E-03
Carbon Tetrachloride	3.12E-05	9.88E-07		1.70E-05	1.85E-04		3.16E-05
Di-n-butylphthalate	5.76E-05	9.53E-06					3.99E-05
Trichloroethene	2.83E-03	6.53E-05		1.55E-03	1.68E-02		3.55E-03
bis(2-Ethylhexyl)phthalate	5.72E-05	1.93E-06					3.96E-05
cis-1,2-Dichloroethene	4.66E-05	6.71E-07		2.54E-05	2.76E-04		8.41E-05
Technetium-99	5.74E+04						2.22E+07

----- LOCATION-SWMU 193B MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Beryllium	1.78E-06	1.66E-06	4.02E-12				1.21E-04
Chromium	1.01E-04	9.38E-05	2.27E-10				6.80E-03
Vanadium	7.37E-05	6.87E-05	1.66E-10				5.01E-03

Table 1.49. Carcinogenic chronic daily intakes for future child resident

----- LOCATION-SNMU 193C MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Aluminum	2.17E-01	3.12E-04					
Antimony	6.48E-04	9.33E-07					1.46E-01
Arsenic	6.92E-05	9.97E-08					4.48E-04
Barium	1.38E-03	1.99E-06					4.78E-05
Beryllium	6.29E-05	9.06E-08					9.39E-04
Cadmium	2.00E-04	2.89E-07					4.26E-05
Chromium	8.12E-04	1.17E-06					1.86E-04
Cobalt	3.01E-04	4.34E-07					5.46E-04
Iron	3.34E-01	4.80E-04					2.16E-04
Lead	1.42E-03	2.04E-06					2.25E-01
Manganese	7.72E-03	1.11E-05					9.55E-04
Mercury	1.13E-06	1.63E-09					6.18E-03
Molybdenum	2.62E-04	3.77E-07					1.39E-06
Nickel	3.04E-04	4.38E-07					2.15E-04
Silica	4.54E-02						2.33E-04
Silver	1.88E-04	2.71E-07					
Tetraxoxo-sulfate(1-)	3.74E-02						1.27E-04
Thallium	6.97E-04	1.00E-06					
Uranium	3.63E-05	5.23E-08					4.70E-04
Vanadium	4.74E-03	6.82E-06					2.45E-05
Zinc	1.35E-03	1.66E-06					3.20E-03
1,1,2-Trichloroethane	1.42E-05	1.71E-07		7.74E-06	8.40E-05		1.34E-03
1,1-Dichloroethane	1.42E-05	1.82E-07		7.74E-06	8.40E-05		2.36E-05
1,2-Dichloroethane	1.42E-05	1.08E-07		7.74E-06	8.40E-05		2.79E-05
Benzene	1.42E-05	4.29E-07		7.74E-06	8.40E-05		3.69E-05
Bromodichloromethane	1.42E-05	1.18E-07		7.74E-06	8.40E-05		2.18E-05
Carbon Tetrachloride	1.42E-05	4.49E-07		7.74E-06	8.40E-05		2.18E-05
Chloroform	1.42E-05	1.82E-07		7.74E-06	8.40E-05		1.44E-05
Ethylbenzene	1.42E-05	1.51E-06		7.74E-06	8.40E-05		2.36E-05
Polychlorinated biphenyl	5.67E-07	2.83E-07					1.28E-05
Tetrachloroethane	1.42E-05	7.55E-06		7.74E-06	8.40E-05		3.84E-07
Trichloroethane	6.99E-06	1.61E-07		3.82E-06	4.15E-05		1.58E-05
Vinyl Chloride	5.21E-05	5.48E-07		2.85E-05	3.09E-04		8.76E-06
Xylene	3.09E-05	4.21E-06		1.69E-05	1.83E-04		1.50E-04
cis-1,2-Dichloroethane	2.83E-05	4.08E-07		1.55E-05	1.68E-04		2.62E-05
trans-1,2-Dichloroethane	2.83E-05	4.37E-08		1.55E-05	1.68E-04		5.11E-05
Radon-222	3.30E+05			2.05E+06	2.20E+05		2.33E-04
							1.42E+04

----- LOCATION-SNMU 193C MEDIA-BGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
1,2-Dichloroethane	3.19E-03	4.91E-06		1.74E-03	1.89E-02		2.62E-02
Trichloroethane	9.18E-04	2.12E-05		5.02E-04	5.45E-03		1.15E-03

Table 1.49. Carcinogenic chronic daily intakes for future child resident

----- LOCATION-SWMU 193C MEDIA-Surface Soil -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Chromium	6.20E-06	5.78E-06	1.40E-11				4.19E-04
Lead	2.83E-05	2.64E-05	6.18E-11				1.92E-03
Zinc	4.72E-05	4.40E-05	1.07E-10				6.43E-03
----- LOCATION-SWMU 99A MEDIA-McNairy Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
1,1-Dichloroethane	5.90E-05	7.56E-07		3.22E-05	3.50E-04		1.16E-04
Carbon Tetrachloride	1.59E-05	5.03E-07		8.67E-06	9.41E-05		1.61E-05
Trichloroethane	2.47E-03	5.69E-05		1.35E-03	1.46E-02		3.09E-03
cis-1,2-Dichloroethane	6.54E-04	9.42E-06		3.57E-04	3.88E-03		1.18E-03
----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Aluminum	6.14E-01	8.84E-05					4.14E-02
Arsenic	3.12E-05	4.50E-08					2.16E-05
Barium	1.95E-03	2.80E-06					1.32E-03
Beryllium	5.87E-05	8.46E-08					3.98E-05
Chromium	7.19E-04	1.03E-06					4.84E-04
Cobalt	5.35E-04	7.71E-07					3.83E-04
Copper	4.52E-04	6.51E-07					3.71E-04
Iron	1.31E-01	1.89E-04					8.85E-02
Lead	4.61E-04	6.63E-07					3.11E-04
Lithium	4.22E-04	6.07E-07					2.88E-04
Manganese	9.42E-03	1.36E-05					7.54E-03
Mercury	2.45E-06	3.52E-09					3.01E-06
Nickel	8.70E-04	1.25E-06					6.66E-04
Silica	5.87E-02						
Sulfate	6.72E-01	9.68E-05					
Tetraxo-sulfate (1-)	5.58E-02						
Vanadium	2.08E-03	3.00E-06					1.41E-03
Zinc	1.28E-03	1.84E-06					1.49E-03
1,1-Dichloroethane	1.01E-04	1.30E-06		5.54E-05	6.01E-04		1.99E-04
Trichloroethane	3.83E-03	8.83E-05		2.09E-03	2.27E-02		4.80E-03
bis(2-Ethylhexyl)phthalate	5.42E-05	1.83E-06					3.76E-05
cis-1,2-Dichloroethane	3.99E-05	5.74E-07		2.18E-05	2.37E-04		7.20E-05
Radon-222	1.39E+06			8.66E+06	9.26E+05		5.99E+04
Technetium-99	9.45E+04						3.66E+07

Table 1.49. Carcinogenic chronic daily intakes for future child resident

----- LOCATION-SWMU 99A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Barium	2.36E-04	2.20E-04	5.32E-10				1.61E-02
Beryllium	7.56E-07	7.05E-07	1.71E-12				5.16E-05
Chromium	1.07E-05	9.94E-06	2.41E-11				7.21E-04
Zinc	1.28E-04	1.19E-04	2.89E-10				1.74E-02
Acenaphthene	3.74E-07	6.98E-07	1.17E-07				2.77E-05
Acenaphthylene	2.97E-07	5.53E-07	6.85E-08				2.43E-05
Anthracene	6.72E-07	1.25E-06	5.89E-08				4.92E-05
Benz(a)anthracene	9.02E-07	1.68E-06	6.54E-09				6.19E-05
Benzo(a)pyrene	5.55E-07	1.03E-06	1.55E-09				3.78E-05
Benzo(b)fluoranthene	1.30E-06	2.43E-06	1.93E-08				8.90E-05
Benzo(ghi)perylene	8.46E-07	1.58E-06	1.91E-12				5.74E-05
Benzo(k)fluoranthene	6.49E-07	1.21E-06	1.13E-09				4.40E-05
Chrysene	1.48E-06	2.77E-06	3.74E-08				1.02E-04
Dibenz(a,h)anthracene	2.84E-07	5.30E-07	1.87E-10				1.93E-05
Dibenzofuran	1.39E-07	2.60E-07	2.36E-08				9.57E-06
Fluoranthene	9.65E-07	1.80E-06	2.16E-08				6.80E-05
Fluorene	2.48E-07	4.63E-07	3.33E-08				1.82E-05
Indeno(1,2,3-cd)pyrene	9.08E-07	1.69E-06	1.09E-09				6.16E-05
PCB-1016	2.70E-07	3.02E-07	3.89E-08				1.84E-05
PCB-1254	1.09E-07	1.22E-07	1.40E-08				7.43E-06
PCB-1260	2.12E-07	2.37E-07	3.24E-08				1.44E-05
Phenanthrene	1.12E-06	2.10E-06	2.54E-12				8.09E-05
Pyrene	1.11E-06	2.06E-06	1.99E-08				7.80E-05
Cesium-137	4.44E+02		1.38E-03			4.87E+00	3.19E+04
Neptunium-237	5.38E+03		1.67E-02			5.89E+01	3.68E+05
Technetium-99	1.94E+05		6.02E-01			2.12E+03	1.05E+10
Thorium-234	9.06E+03		2.82E-02			9.93E+01	6.13E+05
Uranium-234	6.89E+03		2.14E-02			7.55E+01	4.67E+05
Uranium-238	2.17E+04		6.76E-02			2.38E+02	1.48E+06

----- LOCATION-SWMU 99B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles during household use	External exposure	Ingestion of vegetables
Barium	2.78E-03	4.01E-06					1.89E-03
Chromium	3.51E-04	5.05E-07					2.36E-04
Iron	1.27E-02	1.83E-05					8.56E-03
Manganese	1.47E-03	2.12E-06					1.18E-03
Silica	5.20E-02						
Sulfate	1.45E-01	2.09E-04					
Tetraoxo-sulfate(1-)	8.21E-02						
Zinc	3.31E-04	4.76E-07					3.85E-04
Trichloroethene	1.18E-02	2.71E-04		6.43E-03	6.99E-02		1.48E-02
Radon-222	8.65E+05			5.39E+06	5.76E+05		3.73E+04

Table 1.50. Noncarcinogenic chronic daily intakes for future adult recreational user

----- LOCATION-SWMU 193A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	9.16E-07	2.08E-06	2.94E-08
Anthracene	7.36E-10	1.64E-09	
Benz(a)anthracene	1.75E-08	4.01E-08	
Benzo(a)pyrene	5.93E-08	1.37E-07	1.06E-07
Benzo(b)fluoranthene	1.21E-08	2.78E-08	
Benzo(ghi)perylene	1.25E-07	2.89E-07	
Chrysene	1.65E-08	3.78E-08	
Di-n-butylphthalate	1.33E-09	3.01E-09	
Di-n-octylphthalate	3.45E-05	7.97E-05	
Dibenz(a,h)anthracene	1.51E-07	3.48E-07	
Fluoranthene	4.72E-09	1.07E-08	
Indeno(1,2,3-cd)pyrene	1.18E-07	2.72E-07	
Pyrene	5.10E-09	1.15E-08	
bis(2-Ethylhexyl)phthalate	2.94E-09	6.65E-09	

----- LOCATION-SWMU 193B MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Beryllium	2.91E-09	1.52E-08	1.15E-10
Chromium	1.64E-06	8.43E-06	5.27E-08
Vanadium	2.97E-07	1.55E-06	9.78E-09

----- LOCATION-SWMU 193C MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	2.05E-06	9.31E-07	1.93E-08
Lead	4.82E-07	2.15E-07	4.38E-09
Zinc	7.04E-04	2.90E-04	

----- LOCATION-SWMU 99A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Barium	5.70E-08	2.87E-07	7.88E-08
Beryllium	6.91E-10	3.59E-09	2.72E-11
Chromium	9.71E-08	4.99E-07	3.12E-09
Zinc	5.27E-05	2.46E-04	
Acenaphthene	2.39E-10	1.19E-09	
Acenaphthylene	6.58E-11	3.20E-10	
Anthracene	5.19E-10	2.61E-09	
Benz(a)anthracene	1.07E-08	5.52E-08	
Benzo(a)pyrene	1.60E-08	8.33E-08	2.87E-08
Benzo(b)fluoranthene	3.77E-08	1.96E-07	
Benzo(ghi)perylene	7.57E-08	3.95E-07	
Benzo(k)fluoranthene	9.16E-08	4.78E-07	
Chrysene	1.75E-08	9.09E-08	
Dibenz(a,h)anthracene	4.01E-08	2.09E-07	
Dibenzofuran	1.63E-09	8.45E-09	
Fluoranthene	2.03E-09	1.04E-08	
Fluorene	1.92E-10	9.63E-10	
Indeno(1,2,3-cd)pyrene	8.12E-08	4.24E-07	
PCB-1016	4.97E-09	2.58E-08	2.81E-08
PCB-1254	2.51E-09	1.30E-08	1.13E-08
PCB-1260	5.95E-08	3.11E-07	2.16E-08

Table 1.50. Noncarcinogenic chronic daily intakes for future adult recreational user

----- LOCATION-SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Phenanthrene	1.28E-09	6.50E-09	1.06E-08
Pyrene	2.33E-09	1.19E-08	
Cesium-137			
Neptunium-237			
Technetium-99			
Thorium-234			
Uranium-234			
Uranium-238			

Table 1.51. Carcinogenic chronic daily intakes for future adult recreational user

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	2.88E-07	6.54E-07	9.25E-09
Anthracene	2.31E-10	5.14E-10	
Benz (a) anthracene	5.49E-09	1.26E-08	
Benzo (a) pyrene	1.86E-08	4.29E-08	3.35E-08
Benzo (b) fluoranthene	3.80E-09	8.75E-09	
Benzo (ghi) perylene	3.93E-08	9.07E-08	
Chrysene	5.19E-09	1.19E-08	
Di-n-butylphthalate	4.19E-10	9.46E-10	
Di-n-octylphthalate	1.08E-05	2.51E-05	
Dibenz (a, h) anthracene	4.74E-08	1.10E-07	
Fluoranthene	1.48E-09	3.35E-09	
Indeno (1, 2, 3-cd) pyrene	3.70E-08	8.54E-08	
Pyrene	1.60E-09	3.62E-09	
bis (2-Ethylhexyl) phthalate	9.24E-10	2.09E-09	

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Beryllium	9.16E-10	4.77E-09	3.61E-11
Chromium	5.16E-07	2.65E-06	1.66E-08
Vanadium	9.33E-08	4.86E-07	3.07E-09

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	6.43E-07	2.92E-07	6.06E-09
Lead	1.51E-07	6.77E-08	1.38E-09
Zinc	2.21E-04	9.13E-05	

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Barium	1.79E-08	9.01E-08	2.48E-08
Beryllium	2.17E-10	1.13E-09	8.55E-12
Chromium	3.05E-08	1.57E-07	9.81E-10
Zinc	1.66E-05	7.72E-05	
Acenaphthene	7.50E-11	3.75E-10	
Acenaphthylene	2.07E-11	1.01E-10	
Anthracene	1.63E-10	8.19E-10	
Benz (a) anthracene	3.35E-09	1.73E-08	
Benzo (a) pyrene	5.03E-09	2.62E-08	9.03E-09
Benzo (b) fluoranthene	1.18E-08	6.16E-08	
Benzo (ghi) perylene	2.38E-08	1.24E-07	
Benzo (k) fluoranthene	2.88E-08	1.50E-07	
Chrysene	5.51E-09	2.86E-08	
Dibenz (a, h) anthracene	1.26E-08	6.58E-08	
Dibenzofuran	5.13E-10	2.66E-09	
Fluoranthene	6.38E-10	3.26E-09	
Fluorene	6.02E-11	3.03E-10	
Indeno (1, 2, 3-cd) pyrene	2.55E-08	1.33E-07	
PCB-1016	1.56E-09	8.11E-09	8.82E-09
PCB-1254	7.89E-10	4.10E-09	3.55E-09
PCB-1260	1.87E-08	9.76E-08	6.80E-09

Table 1.51. Carcinogenic chronic daily intakes for future adult recreational user

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Phenanthrene	4.04E-10	2.04E-09	3.34E-09
Pyrene	7.32E-10	3.74E-09	
Cesium-137	5.30E+01	2.60E+02	
Neptunium-237	9.18E+00	4.66E+01	3.70E-01
Technetium-99	7.32E+03	3.30E+04	
Thorium-234	1.26E+00	6.55E+00	5.51E-02
Uranium-234	3.00E+00	1.55E+01	3.27E+02
Uranium-238	1.40E+01	7.17E+01	1.07E+03

Table 1.52. Noncarcinogenic chronic daily intakes for future teen recreational user

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	1.49E-06	1.68E-06	2.45E-08
Anthracene	1.20E-09	1.32E-09	
Benz (a) anthracene	2.84E-08	3.24E-08	
Benzo (a) pyrene	9.65E-08	1.10E-07	8.85E-08
Benzo (b) fluoranthene	1.97E-08	2.25E-08	
Benzo (ghi) perylene	2.04E-07	2.34E-07	
Chrysene	2.69E-08	3.06E-08	
Di-n-butylphthalate	2.17E-09	2.44E-09	
Di-n-octylphthalate	5.61E-05	6.45E-05	
Dibenz (a, h) anthracene	2.46E-07	2.82E-07	
Fluoranthene	7.69E-09	8.63E-09	
Indeno (1, 2, 3-cd) pyrene	1.92E-07	2.20E-07	
Pyrene	8.31E-09	9.33E-09	
bis-(2-Ethylhexyl)phthalate	4.79E-09	5.38E-09	

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Beryllium	4.74E-09	1.23E-08	9.55E-11
Chromium	2.67E-06	6.82E-06	4.38E-08
Vanadium	4.83E-07	1.25E-06	8.13E-09

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	3.33E-06	7.53E-07	1.60E-08
Lead	7.84E-07	1.74E-07	3.64E-09
Zinc	1.15E-03	2.35E-04	

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Barium	9.27E-08	2.32E-07	6.55E-08
Beryllium	1.12E-09	2.91E-09	2.26E-11
Chromium	1.58E-07	4.03E-07	2.59E-09
Zinc	8.58E-05	1.99E-04	
Acenaphthene	3.89E-10	9.67E-10	
Acenaphthylene	1.07E-10	2.59E-10	
Anthracene	8.44E-10	2.11E-09	
Benz (a) anthracene	1.73E-08	4.47E-08	
Benzo (a) pyrene	2.61E-08	6.74E-08	2.39E-08
Benzo (b) fluoranthene	6.13E-08	1.58E-07	
Benzo (ghi) perylene	1.23E-07	3.19E-07	
Benzo (k) fluoranthene	1.49E-07	3.87E-07	
Chrysene	2.85E-08	7.35E-08	
Dibenz (a, h) anthracene	6.53E-08	1.69E-07	
Dibenzofuran	2.66E-09	6.84E-09	
Fluoranthene	3.31E-09	8.39E-09	
Fluorene	3.12E-10	7.79E-10	
Indeno (1, 2, 3-cd) pyrene	1.32E-07	3.43E-07	
PCB-1016	8.09E-09	2.09E-08	2.33E-08
PCB-1254	4.08E-09	1.06E-08	9.39E-09
PCB-1260	9.68E-08	2.51E-07	1.80E-08

Table 1.52. Noncarcinogenic chronic daily intakes for future teen recreational user

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Phenanthrene	2.09E-09	5.26E-09	8.83E-09
Pyrene	3.79E-09	9.62E-09	
Cesium-137			
Neptunium-237			
Technetium-99			
Thorium-234			
Uranium-234			
Uranium-238			

Table 1.53. Carcinogenic chronic daily intakes for future teen recreational user

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	2.56E-07	2.89E-07	4.20E-09
Anthracene	2.05E-10	2.27E-10	
Benz(a)anthracene	4.88E-09	5.56E-09	
Benzo(a)pyrene	1.66E-08	1.89E-08	1.52E-08
Benzo(b)fluoranthene	3.38E-09	3.86E-09	
Benzo(ghi)perylene	3.49E-08	4.00E-08	
Chrysene	4.60E-09	5.25E-09	
Di-n-butylphthalate	3.72E-10	4.18E-10	
Di-n-octylphthalate	9.61E-06	1.11E-05	
Dibenz(a,h)anthracene	4.21E-08	4.83E-08	
Fluoranthene	1.32E-09	1.48E-09	
Indeno(1,2,3-cd)pyrene	3.29E-08	3.77E-08	
Pyrene	1.42E-09	1.60E-09	
bis(2-Ethylhexyl)phthalate	8.21E-10	9.22E-10	

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Beryllium	8.13E-10	2.10E-09	1.64E-11
Chromium	4.58E-07	1.17E-06	7.51E-09
Vanadium	8.28E-08	2.15E-07	1.39E-09

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	5.71E-07	1.29E-07	2.75E-09
Lead	1.34E-07	2.99E-08	6.24E-10
Zinc	1.96E-04	4.03E-05	

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Barium	1.59E-08	3.98E-08	1.12E-08
Beryllium	1.93E-10	4.98E-10	3.88E-12
Chromium	2.71E-08	6.92E-08	4.45E-10
Zinc	1.47E-05	3.41E-05	
Acenaphthene	6.66E-11	1.66E-10	
Acenaphthylene	1.84E-11	4.44E-11	
Anthracene	1.45E-10	3.61E-10	
Benz(a)anthracene	2.97E-09	7.66E-09	
Benzo(a)pyrene	4.47E-09	1.15E-08	4.09E-09
Benzo(b)fluoranthene	1.05E-08	2.72E-08	
Benzo(ghi)perylene	2.11E-08	5.48E-08	
Benzo(k)fluoranthene	2.56E-08	6.63E-08	
Chrysene	4.89E-09	1.26E-08	
Dibenz(a,h)anthracene	1.12E-08	2.90E-08	
Dibenzofuran	4.55E-10	1.17E-09	
Fluoranthene	5.67E-10	1.44E-09	
Fluorene	5.35E-11	1.34E-10	
Indeno(1,2,3-cd)pyrene	2.27E-08	5.88E-08	
PCB-1016	1.39E-09	3.58E-09	4.00E-09
PCB-1254	7.00E-10	1.81E-09	1.61E-09
PCB-1260	1.66E-08	4.31E-08	3.08E-09

Table 1.53. Carcinogenic chronic daily intakes for future teen recreational user

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
(continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Phenanthrene	3.59E-10	9.02E-10	1.51E-09
Pyrene	6.50E-10	1.65E-09	
Cesium-137	2.89E+01	7.06E+01	
Neptunium-237	5.01E+00	1.26E+01	1.03E-01
Technetium-99	3.99E+03	8.95E+03	
Thorium-234	6.87E-01	1.78E+00	1.53E-02
Uranium-234	1.64E+00	4.20E+00	9.11E+01
Uranium-238	7.61E+00	1.94E+01	2.99E+02

Table 1.54. Noncarcinogenic chronic daily intakes for future child recreational user

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	9.67E-07	2.01E-06	2.84E-08
Anthracene	7.77E-10	1.58E-09	
Benz(a)anthracene	1.84E-08	3.87E-08	
Benzo(a)pyrene	6.26E-08	1.32E-07	1.03E-07
Benzo(b)fluoranthene	1.28E-08	2.69E-08	
Benzo(ghi)perylene	1.32E-07	2.79E-07	
Chrysene	1.74E-08	3.65E-08	
Di-n-butylphthalate	1.41E-09	2.91E-09	
Di-n-octylphthalate	3.64E-05	7.70E-05	
Dibenz(a,h)anthracene	1.59E-07	3.36E-07	
Fluoranthene	4.99E-09	1.03E-08	
Indeno(1,2,3-cd)pyrene	1.24E-07	2.62E-07	
Pyrene	5.39E-09	1.11E-08	
bis(2-Ethylhexyl)phthalate	3.11E-09	6.42E-09	

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Beryllium	3.08E-09	1.46E-08	1.11E-10
Chromium	1.73E-06	8.14E-06	5.09E-08
Vanadium	3.13E-07	1.49E-06	9.44E-09

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	2.16E-06	8.99E-07	1.86E-08
Lead	5.09E-07	2.08E-07	4.23E-09
Zinc	7.43E-04	2.80E-04	

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Barium	6.02E-08	2.77E-07	7.60E-08
Beryllium	7.29E-10	3.47E-09	2.63E-11
Chromium	1.03E-07	4.81E-07	3.01E-09
Zinc	5.56E-05	2.37E-04	
Acenaphthene	2.52E-10	1.15E-09	
Acenaphthylene	6.94E-11	3.09E-10	
Anthracene	5.48E-10	2.52E-09	
Benz(a)anthracene	1.12E-08	5.33E-08	
Benzo(a)pyrene	1.69E-08	8.04E-08	2.77E-08
Benzo(b)fluoranthene	3.98E-08	1.89E-07	
Benzo(ghi)perylene	8.00E-08	3.81E-07	
Benzo(k)fluoranthene	9.68E-08	4.62E-07	
Chrysene	1.85E-08	8.77E-08	
Dibenz(a,h)anthracene	4.24E-08	2.02E-07	
Dibenzo(furan)	1.72E-09	8.16E-09	
Fluoranthene	2.15E-09	1.00E-08	
Fluorene	2.02E-10	9.30E-10	
Indeno(1,2,3-cd)pyrene	8.58E-08	4.09E-07	
PCB-1016	5.25E-09	2.49E-08	2.71E-08
PCB-1254	2.65E-09	1.26E-08	1.09E-08
PCB-1260	6.28E-08	3.00E-07	2.09E-08

Table 1.54. Noncarcinogenic chronic daily intakes for future child recreational user

----- LOCATION=SWMU 99A MEDIA-Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Phenanthrene	1.36E-09	6.28E-09	1.03E-08
Pyrene	2.46E-09	1.15E-08	
Cesium-137			
Neptunium-237			
Technetium-99			
Thorium-234			
Uranium-234			
Uranium-238			

Table 1.55. Carcinogenic chronic daily intakes for future child recreational user

----- LOCATION-SWMU 193A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	8.29E-08	1.72E-07	2.44E-09
Anthracene	6.66E-11	1.35E-10	
Benz(a)anthracene	1.58E-09	3.32E-09	
Benzo(a)pyrene	5.37E-09	1.13E-08	8.81E-09
Benzo(b)fluoranthene	1.10E-09	2.30E-09	
Benzo(ghi)perylene	1.13E-08	2.39E-08	
Chrysene	1.49E-09	3.13E-09	
Di-n-butylphthalate	1.21E-10	2.49E-10	
Di-n-octylphthalate	3.12E-06	6.60E-06	
Dibenz(a,h)anthracene	1.37E-08	2.88E-08	
Fluoranthene	4.27E-10	8.83E-10	
Indeno(1,2,3-cd)pyrene	1.07E-08	2.25E-08	
Pyrene	4.62E-10	9.55E-10	
bis(2-Ethylhexyl)phthalate	2.66E-10	5.50E-10	

----- LOCATION-SWMU 193B MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Beryllium	2.64E-10	1.25E-09	9.50E-12
Chromium	1.49E-07	6.97E-07	4.36E-09
Vanadium	2.69E-08	1.28E-07	8.10E-10

----- LOCATION-SWMU 193C MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Chromium	1.85E-07	7.70E-08	1.60E-09
Lead	4.36E-08	1.78E-08	3.63E-10
Zinc	6.37E-05	2.40E-05	

----- LOCATION-SWMU 99A MEDIA=Surface Soil -----			
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Barium	5.16E-09	2.37E-08	6.52E-09
Beryllium	6.25E-11	2.97E-10	2.25E-12
Chromium	8.79E-09	4.13E-08	2.58E-10
Zinc	4.77E-06	2.03E-05	
Acenaphthene	2.16E-11	9.89E-11	
Acenaphthylene	5.95E-12	2.65E-11	
Anthracene	4.70E-11	2.16E-10	
Benz(a)anthracene	9.64E-10	4.57E-09	
Benzo(a)pyrene	1.45E-09	6.89E-09	2.38E-09
Benzo(b)fluoranthene	3.41E-09	1.62E-08	
Benzo(ghi)perylene	6.85E-09	3.27E-08	
Benzo(k)fluoranthene	8.29E-09	3.96E-08	
Chrysene	1.59E-09	7.52E-09	
Dibenz(a,h)anthracene	3.63E-09	1.73E-08	
Dibenzofuran	1.48E-10	7.00E-10	
Fluoranthene	1.84E-10	8.59E-10	
Fluorene	1.74E-11	7.97E-11	
Indeno(1,2,3-cd)pyrene	7.35E-09	3.51E-08	
PCB-1016	4.50E-10	2.14E-09	2.32E-09
PCB-1254	2.27E-10	1.08E-09	9.35E-10
PCB-1260	5.38E-09	2.57E-08	1.79E-09

Table 1.55. Carcinogenic chronic daily intakes for future child recreational user

----- LOCATION-SWMU 99A MEDIA-Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail
Phenanthrene	1.16E-10	5.38E-10	8.79E-10
Pyrene	2.11E-10	9.84E-10	
Cesium-137	3.16E+00	1.42E+01	
Neptunium-237	5.48E-01	2.54E+00	2.02E-02
Technetium-99	4.37E+02	1.80E+03	
Thorium-234	7.52E-02	3.58E-01	3.00E-03
Uranium-234	1.79E-01	8.46E-01	1.78E+01
Uranium-238	8.33E-01	3.91E+00	5.86E+01

Table 1.56. Noncarcinogenic chronic daily intakes for future excavation worker

----- LOCATION=AOC 204 MEDIA=Subsurface Soil -----			
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates
1,1-Dichloroethene	1.39E-07	3.11E-07	4.46E-06
PCB-1254	8.69E-08	4.67E-08	7.51E-09
PCB-1260	8.69E-08	4.67E-08	8.91E-09
Polychlorinated biphenyl	3.48E-07	1.87E-07	1.68E-08
Tetrachloroethene	2.81E-06	6.30E-06	5.07E-05
Trichloroethene	1.45E-06	3.24E-06	2.04E-05

----- LOCATION=SWMU 193A MEDIA=Subsurface Soil -----			
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates
Aluminum	2.14E-02	9.56E-03	3.23E-08
Beryllium	2.22E-06	9.93E-07	3.36E-12
Chromium	3.88E-05	1.74E-05	5.87E-11
Anthracene	4.03E-07	3.61E-07	2.37E-08
Benz(a)anthracene	6.26E-07	5.60E-07	3.04E-09
Benzo(a)pyrene	8.69E-07	7.78E-07	1.63E-09
Benzo(b)fluoranthene	1.77E-07	1.59E-07	1.76E-09
Benzo(ghi)perylene	5.91E-07	5.29E-07	8.95E-13
Chrysene	5.91E-07	5.29E-07	9.97E-09
Di-n-butylphthalate	2.68E-07	2.40E-07	1.52E-09
Di-n-octylphthalate	4.17E-07	3.74E-07	3.20E-10
Dibenz(a,h)anthracene	4.52E-07	4.05E-07	1.99E-10
Fluoranthene	1.08E-06	9.65E-07	1.62E-08
Indeno(1,2,3-cd)pyrene	5.56E-07	4.98E-07	4.48E-10
Pyrene	9.23E-07	8.27E-07	1.12E-08
bis(2-Ethylhexyl)phthalate	5.91E-07	5.29E-07	1.26E-10

----- LOCATION=SWMU 193B MEDIA=Subsurface Soil -----			
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates
Beryllium	2.44E-06	1.09E-06	3.69E-12
Chromium	1.33E-04	5.98E-05	2.02E-10
Vanadium	1.00E-04	4.50E-05	1.52E-10

----- LOCATION=SWMU 193C MEDIA=Subsurface Soil -----			
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates
Aluminum	1.79E-02	8.03E-03	2.72E-08
Beryllium	2.37E-06	1.06E-06	3.59E-12
Cadmium	7.12E-06	6.38E-07	1.08E-11
Chromium	7.47E-05	3.35E-05	1.13E-10
Cobalt	3.52E-05	1.58E-05	5.33E-11
Iron	4.83E-02	2.16E-02	4.29E+01
Lead	4.72E-05	2.12E-05	7.15E-11
Manganese	1.32E-03	5.93E-04	2.00E-09

Table 1.56. Noncarcinogenic chronic daily intakes for future excavation worker

----- LOCATION=SWMU 193C MEDIA=Subsurface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates
Vanadium	4.43E-05	1.98E-05	6.70E-11
Zinc	2.07E-04	9.27E-05	3.13E-10
Xylene	9.87E-09	2.21E-08	6.64E-08

----- LOCATION=SWMU 194 MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates
Aluminum	1.88E-02	8.42E-03	2.85E-08
Beryllium	4.45E-06	1.99E-06	6.74E-12
Cadmium	7.89E-06	7.07E-07	1.19E-11
Chromium	3.65E-05	1.63E-05	5.52E-11
Lead	5.49E-05	2.46E-05	8.32E-11
Zinc	1.77E-04	7.92E-05	2.68E-10
Ethylbenzene	1.12E-08	2.51E-08	9.53E-08

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates
Aluminum	1.56E-02	7.00E-03	2.37E-08
Antimony	8.76E-06	3.93E-06	1.33E-11
Arsenic	1.04E-05	4.68E-06	1.58E-11
Barium	4.03E-04	1.81E-04	6.10E-10
Beryllium	1.06E-06	4.75E-07	1.61E-12
Cadmium	2.88E-06	2.58E-07	4.37E-12
Chromium	2.92E-05	1.31E-05	4.42E-11
Lead	6.28E-05	2.81E-05	9.51E-11
Manganese	7.53E-04	3.37E-04	1.14E-09
Thallium	2.05E-06	9.18E-07	3.10E-12
Zinc	3.16E-04	1.42E-04	4.79E-10
1,1-Dichloroethene	2.09E-08	4.67E-08	6.69E-07
1,2,4-Trichlorobenzene	1.42E-06	1.28E-06	1.52E-06
1,2-Dichlorobenzene	1.42E-06	3.19E-06	4.48E-06
1,3-Dichlorobenzene	1.42E-06	3.19E-06	2.16E-12
1,4-Dichlorobenzene	1.42E-06	3.19E-06	5.06E-06
2,4,5-Trichlorophenol	1.86E-06	1.67E-06	1.23E-07
2,4,6-Trichlorophenol	1.42E-06	1.28E-06	2.55E-07
2,4-Dinitrotoluene	1.42E-06	1.28E-06	1.85E-07
2,6-Dinitrotoluene	1.42E-06	1.28E-06	2.27E-07
2-Chloronaphthalene	1.42E-06	1.28E-06	2.33E-06
2-Hexanone	2.05E-08	4.59E-08	3.10E-14
2-Methyl-4,6-dinitrophenol	1.86E-06	1.67E-06	1.25E-07
2-Methylnaphthalene	1.42E-06	1.28E-06	1.54E-07
2-Nitroaniline	1.86E-06	1.67E-06	7.24E-06
2-Nitrophenol	1.42E-06	1.28E-06	2.16E-12
3,3'-Dichlorobenzidine	1.06E-06	9.53E-07	3.79E-08
3-Nitroaniline	1.86E-06	1.67E-06	2.81E-12
4,4'-DDD	1.22E-07	1.09E-07	2.40E-10
4,4'-DDE	1.22E-07	1.09E-07	2.25E-10
4,4'-DDT	1.22E-07	1.09E-07	1.84E-10

Table 1.56. Noncarcinogenic chronic daily intakes for future excavation worker

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates
4-Bromophenyl phenyl ether	1.42E-06	1.28E-06	2.16E-12
4-Chloro-3-methylphenol	1.42E-06		2.16E-12
4-Chlorophenyl phenyl ether	1.42E-06		2.16E-12
4-Nitroaniline	1.86E-06	1.67E-06	2.81E-12
Acenaphthene	8.39E-07	7.52E-07	1.77E-07
Acenaphthylene	8.70E-07	7.80E-07	1.35E-07
Aldrin	5.91E-08	5.29E-08	3.93E-10
Anthracene	1.70E-06	1.52E-06	9.97E-08
Benz(a)anthracene	2.04E-06	1.83E-06	9.93E-09
Benzo(a)pyrene	2.21E-06	1.98E-06	4.15E-09
Benzo(b)fluoranthene	2.68E-06	2.40E-06	2.65E-08
Benzo(ghi)perylene	1.82E-06	1.63E-06	2.76E-12
Benzo(k)fluoranthene	1.73E-06	1.55E-06	2.02E-09
Butyl benzyl phthalate	7.66E-07	6.86E-07	4.19E-09
Chrysene	2.16E-06	1.93E-06	3.64E-08
Di-n-butylphthalate	1.42E-06	1.28E-06	8.10E-09
Di-n-octylphthalate	1.42E-06	1.28E-06	1.09E-09
Dibenz(a,h)anthracene	1.55E-06	1.39E-06	6.83E-10
Dibenzofuran	8.53E-07	7.64E-07	9.67E-08
Dieldrin	1.22E-07	1.09E-07	2.59E-09
Endosulfan I	5.91E-08		8.95E-14
Endosulfan II	1.22E-07		1.84E-13
Endosulfan Sulfate	1.22E-07		1.84E-13
Endrin	1.22E-07	1.09E-07	2.49E-09
Endrin Ketone	1.22E-07		1.84E-13
Ethylbenzene	1.54E-08	3.46E-08	1.32E-07
Fluoranthene	2.21E-06	1.98E-06	3.33E-08
Fluorene	8.50E-07	7.62E-07	7.65E-08
Heptachlor	5.91E-08	5.29E-08	1.20E-09
Heptachlor Epoxide	5.91E-08	5.29E-08	5.26E-10
Hexachlorobenzene	1.42E-06	1.28E-06	3.56E-07
Hexachlorobutadiene	1.42E-06	1.28E-06	9.09E-07
Hexachlorocyclopentadiene	1.42E-06	1.28E-06	4.60E-07
Hexachloroethane	1.42E-06	1.28E-06	7.24E-07
Indeno(1,2,3-cd)pyrene	1.86E-06	1.66E-06	1.50E-09
Methoxychlor	5.91E-07	5.29E-07	6.66E-09
N-Nitroso-di-n-propylamine	1.42E-06	1.28E-06	5.92E-07
N-Nitrosodiphenylamine	1.42E-06	1.28E-06	1.14E-07
Naphthalene	1.42E-06	1.28E-06	1.17E-06
PCB-1016	5.88E-07	3.16E-07	5.69E-08
PCB-1221	4.28E-07	2.30E-07	6.48E-13
PCB-1232	4.28E-07	2.30E-07	6.48E-13
PCB-1242	4.28E-07	2.30E-07	5.44E-08
PCB-1248	4.28E-07	2.30E-07	6.48E-13
PCB-1254	4.88E-07	2.62E-07	4.22E-08
PCB-1260	6.09E-07	3.27E-07	6.24E-08
Pentachlorophenol	1.86E-06	1.67E-06	7.21E-08
Phenanthrene	1.98E-06	1.78E-06	3.00E-12
Pyrene	2.27E-06	2.04E-06	2.75E-08
Toxaphene	1.22E-06	1.09E-06	4.76E-09
Vinyl Chloride	4.17E-08	9.34E-08	1.84E-06
Xylene	1.12E-08	2.51E-08	7.54E-08
alpha-BHC	5.91E-08	5.29E-08	4.80E-09
alpha-Chlordane	5.91E-07		8.95E-13
beta-BHC	5.91E-08	5.29E-08	2.04E-09
bis(2-Chloroethoxy)methane	1.42E-06	1.28E-06	2.16E-12
bis(2-Chloroethyl)ether	1.42E-06	1.28E-06	1.96E-06
bis(2-Chloroisopropyl)ether	1.42E-06	1.28E-06	2.26E-06
bis(2-Ethylhexyl)phthalate	8.37E-07	7.50E-07	1.79E-10

Table 1.56. Noncarcinogenic chronic daily intakes for future excavation worker

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates
cis-1,3-Dichloropropene	1.54E-08		2.34E-14
delta-BHC	5.91E-08	5.29E-08	8.95E-14
gamma-BHC (Lindane)	5.91E-08	5.29E-08	5.82E-09
gamma-Chlordane	5.91E-07		8.95E-13
trans-1,3-Dichloropropene	1.54E-08		2.34E-14
Cesium-137			
Neptunium-237			
Technetium-99			
Thorium-234			
Uranium-234			
Uranium-238			

----- LOCATION=SWMU 99B MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates
Aluminum	2.45E-02	1.10E-02	3.70E-08
Arsenic	1.20E-05	5.38E-06	1.82E-11
Beryllium	2.74E-06	1.23E-06	4.15E-12
Chromium	3.70E-05	1.66E-05	5.60E-11
Methylene Chloride	2.09E-06	4.67E-06	3.84E-05

Table 1.57. Carcinogenic chronic daily intakes for future excavation worker

----- LOCATION=AOC 204 MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
1,1-Dichloroethene	4.97E-08	1.11E-07	1.59E-06	
PCB-1254	3.10E-08	1.67E-08	2.68E-09	
PCB-1260	3.10E-08	1.67E-08	3.18E-09	
Polychlorinated biphenyl	1.24E-07	6.67E-08	6.01E-09	
Tetrachloroethene	1.01E-06	2.25E-06	1.81E-05	
Trichloroethene	5.17E-07	1.16E-06	7.29E-06	

----- LOCATION=SWMU 193A MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	7.63E-03	3.42E-03	1.15E-08	
Beryllium	7.92E-07	3.55E-07	1.20E-12	
Chromium	1.38E-05	6.20E-06	2.10E-11	
Anthracene	1.44E-07	1.29E-07	8.47E-09	
Benz (a)anthracene	2.23E-07	2.00E-07	1.09E-09	
Benzo (a)pyrene	3.10E-07	2.78E-07	5.82E-10	
Benzo (b)fluoranthene	6.33E-08	5.67E-08	6.28E-10	
Benzo (ghi)perylene	2.11E-07	1.89E-07	3.19E-13	
Chrysene	2.11E-07	1.89E-07	3.56E-09	
Di-n-butylphthalate	9.56E-08	8.56E-08	5.43E-10	
Di-n-octylphthalate	1.49E-07	1.33E-07	1.14E-10	
Dibenz (a,h)anthracene	1.61E-07	1.45E-07	7.12E-11	
Fluoranthene	3.85E-07	3.45E-07	5.78E-09	
Indeno (1,2,3-cd)pyrene	1.99E-07	1.78E-07	1.60E-10	
Pyrene	3.30E-07	2.95E-07	3.98E-09	
bis (2-Ethylhexyl)phthalate	2.11E-07	1.89E-07	4.51E-11	

----- LOCATION=SWMU 193B MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Beryllium	8.71E-07	3.90E-07	1.32E-12	
Chromium	4.77E-05	2.13E-05	7.22E-11	
Vanadium	3.58E-05	1.61E-05	5.43E-11	

----- LOCATION=SWMU 193C MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	6.41E-03	2.87E-03	9.70E-09	
Beryllium	8.47E-07	3.80E-07	1.28E-12	
Cadmium	2.54E-06	2.28E-07	3.85E-12	
Chromium	2.67E-05	1.20E-05	4.04E-11	
Cobalt	1.26E-05	5.63E-06	1.90E-11	
Iron	1.72E-02	7.72E-03	1.53E+01	
Lead	1.69E-05	7.56E-06	2.55E-11	
Manganese	4.72E-04	2.12E-04	7.15E-10	

Table 1.57. Carcinogenic chronic daily intakes for future excavation worker

----- LOCATION=SWMU 193C MEDIA=Subsurface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Vanadium	1.58E-05	7.08E-06	2.39E-11	
Zinc	7.39E-05	3.31E-05	1.12E-10	
Xylene	3.53E-09	7.90E-09	2.37E-08	

----- LOCATION=SWMU 194 MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	6.72E-03	3.01E-03	1.02E-08	
Beryllium	1.59E-06	7.12E-07	2.41E-12	
Cadmium	2.82E-06	2.52E-07	4.27E-12	
Chromium	1.30E-05	5.84E-06	1.97E-11	
Lead	1.96E-05	8.79E-06	2.97E-11	
Zinc	6.31E-05	2.83E-05	9.56E-11	
Ethylbenzene	4.00E-09	8.95E-09	3.40E-08	

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	5.58E-03	2.50E-03	8.45E-09	
Antimony	3.13E-06	1.40E-06	4.74E-12	
Arsenic	3.73E-06	1.67E-06	5.65E-12	
Barium	1.44E-04	6.45E-05	2.18E-10	
Beryllium	3.79E-07	1.70E-07	5.74E-13	
Cadmium	1.03E-06	9.23E-08	1.56E-12	
Chromium	1.04E-05	4.68E-06	1.58E-11	
Lead	2.24E-05	1.00E-05	3.40E-11	
Manganese	2.69E-04	1.20E-04	4.07E-10	
Thallium	7.32E-07	3.28E-07	1.11E-12	
Zinc	1.13E-04	5.06E-05	1.71E-10	
1,1-Dichloroethene	7.45E-09	1.67E-08	2.39E-07	
1,2,4-Trichlorobenzene	5.09E-07	4.56E-07	5.42E-07	
1,2-Dichlorobenzene	5.09E-07	1.14E-06	1.60E-06	
1,3-Dichlorobenzene	5.09E-07	1.14E-06	7.71E-13	
1,4-Dichlorobenzene	5.09E-07	1.14E-06	1.81E-06	
2,4,5-Trichlorophenol	6.64E-07	5.95E-07	4.38E-08	
2,4,6-Trichlorophenol	5.09E-07	4.56E-07	9.10E-08	
2,4-Dinitrotoluene	5.09E-07	4.56E-07	6.59E-08	
2,6-Dinitrotoluene	5.09E-07	4.56E-07	8.11E-08	
2-Chloronaphthalene	5.09E-07	4.56E-07	8.34E-07	
2-Hexanone	7.32E-09	1.64E-08	1.11E-14	
2-Methyl-4,6-dinitrophenol	6.64E-07	5.95E-07	4.46E-08	
2-Methylnaphthalene	5.09E-07	4.56E-07	5.49E-08	
2-Nitroaniline	6.64E-07	5.95E-07	2.59E-06	
2-Nitrophenol	5.09E-07		7.71E-13	
3,3'-Dichlorobenzidine	3.80E-07	3.40E-07	1.35E-08	
3-Nitroaniline	6.64E-07	5.95E-07	1.01E-12	
4,4'-DDD	4.34E-08	3.89E-08	8.58E-11	
4,4'-DDE	4.34E-08	3.89E-08	8.04E-11	
4,4'-DDT	4.34E-08	3.89E-08	6.57E-11	

Table 1.57. Carcinogenic chronic daily intakes for future excavation worker

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
4-Bromophenyl phenyl ether	5.09E-07	4.56E-07	7.71E-13	
4-Chloro-3-methylphenol	5.09E-07		7.71E-13	
4-Chlorophenyl phenyl ether	5.09E-07		7.71E-13	
4-Nitroaniline	6.64E-07	5.95E-07	1.01E-12	
Acenaphthene	3.00E-07	2.69E-07	6.30E-08	
Acenaphthylene	3.11E-07	2.78E-07	4.81E-08	
Aldrin	2.11E-08	1.89E-08	1.40E-10	
Anthracene	6.05E-07	5.42E-07	3.56E-08	
Benz (a) anthracene	7.29E-07	6.53E-07	3.54E-09	
Benzo (a) pyrene	7.90E-07	7.08E-07	1.48E-09	
Benzo (b) fluoranthene	9.55E-07	8.56E-07	9.47E-09	
Benzo (ghi) perylene	6.51E-07	5.83E-07	9.85E-13	
Benzo (k) fluoranthene	6.18E-07	5.54E-07	7.21E-10	
Butyl benzyl phthalate	2.73E-07	2.45E-07	1.50E-09	
Chrysene	7.70E-07	6.90E-07	1.30E-08	
Di-n-butylphthalate	5.09E-07	4.56E-07	2.89E-09	
Di-n-octylphthalate	5.09E-07	4.56E-07	3.91E-10	
Dibenz (a,h) anthracene	5.53E-07	4.95E-07	2.44E-10	
Dibenzofuran	3.05E-07	2.73E-07	3.45E-08	
Dieldrin	4.34E-08	3.89E-08	9.24E-10	
Endosulfan I	2.11E-08		3.19E-14	
Endosulfan II	4.34E-08		6.58E-14	
Endosulfan Sulfate	4.34E-08		6.58E-14	
Endrin	4.34E-08	3.89E-08	8.89E-10	
Endrin Ketone	4.34E-08		6.58E-14	
Ethylbenzene	5.52E-09	1.24E-08	4.70E-08	
Fluoranthene	7.91E-07	7.09E-07	1.19E-08	
Fluorene	3.04E-07	2.72E-07	2.73E-08	
Heptachlor	2.11E-08	1.89E-08	4.30E-10	
Heptachlor Epoxide	2.11E-08	1.89E-08	1.88E-10	
Hexachlorobenzene	5.09E-07	4.56E-07	1.27E-07	
Hexachlorobutadiene	5.09E-07	4.56E-07	3.25E-07	
Hexachlorocyclopentadiene	5.09E-07	4.56E-07	1.64E-07	
Hexachloroethane	5.09E-07	4.56E-07	2.59E-07	
Indeno(1,2,3-cd)pyrene	6.63E-07	5.94E-07	5.34E-10	
Methoxychlor	2.11E-07	1.89E-07	2.38E-09	
N-Nitroso-di-n-propylamine	5.09E-07	4.56E-07	2.11E-07	
N-Nitrosodiphenylamine	5.09E-07	4.56E-07	4.07E-08	
Naphthalene	5.09E-07	4.56E-07	4.19E-07	
PCB-1016	2.10E-07	1.13E-07	2.03E-08	
PCB-1221	1.53E-07	8.22E-08	2.32E-13	
PCB-1232	1.53E-07	8.22E-08	2.32E-13	
PCB-1242	1.53E-07	8.22E-08	1.94E-08	
PCB-1248	1.53E-07	8.22E-08	2.32E-13	
PCB-1254	1.74E-07	9.37E-08	1.51E-08	
PCB-1260	2.18E-07	1.17E-07	2.23E-08	
Pentachlorophenol	6.64E-07	5.95E-07	2.57E-08	
Phenanthrene	7.08E-07	6.35E-07	1.07E-12	
Pyrene	8.11E-07	7.27E-07	9.81E-09	
Toxaphene	4.34E-07	3.89E-07	1.70E-09	
Vinyl Chloride	1.49E-08	3.34E-08	6.59E-07	
Xylene	4.00E-09	8.97E-09	2.69E-08	
alpha-BHC	2.11E-08	1.89E-08	1.71E-09	
alpha-Chlordane	2.11E-07		3.19E-13	
beta-BHC	2.11E-08	1.89E-08	7.30E-10	
bis (2-Chloroethoxy) methane	5.09E-07	4.56E-07	7.71E-13	
bis (2-Chloroethyl) ether	5.09E-07	4.56E-07	6.99E-07	
bis (2-Chloroisopropyl) ether	5.09E-07	4.56E-07	8.06E-07	
bis (2-Ethylhexyl) phthalate	2.99E-07	2.68E-07	6.39E-11	

Table 1.57. Carcinogenic chronic daily intakes for future excavation worker

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
cis-1,3-Dichloropropene	5.52E-09		8.35E-15	
delta-BHC	2.11E-08	1.89E-08	3.19E-14	
gamma-BHC(Lindane)	2.11E-08	1.89E-08	2.08E-09	
gamma-Chlordane	2.11E-07		3.19E-13	
trans-1,3-Dichloropropene	5.52E-09		8.35E-15	
Cesium-137	2.11E+03		2.74E-03	3.21E+00
Neptunium-237	2.38E+04		3.09E-02	3.63E+01
Technetium-99	7.03E+05		9.12E-01	1.07E+03
Thorium-234	4.34E+04		5.63E-02	6.60E+01
Uranium-234	3.07E+04		3.98E-02	4.67E+01
Uranium-238	9.66E+04		1.25E-01	1.47E+02

----- LOCATION=SWMU 99B MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	8.74E-03	3.91E-03	1.32E-08	
Arsenic	4.29E-06	1.92E-06	6.50E-12	
Beryllium	9.79E-07	4.39E-07	1.48E-12	
Chromium	1.32E-05	5.92E-06	2.00E-11	
Methylene Chloride	7.45E-07	1.67E-06	1.37E-05	

Table 1.58. Chronic toxicity values for the ingestion and inhalation exposure pathways (carcinogenic effects)

Analyte	Class (J)	Oral slope factor ^a	Oral slope factor source	Oral unit risk ^b	Inhalation slope factor ^c	Inhalation slope factor source	Inhalation unit risk ^d	Types of cancers
Inorganics								
Aluminum	NA							
Ammonia	NA							
Antimony (metallic)	NA							
Arsenic, inorganic	A	1.50E+00	A	5.00E-05	5.00E+01	B	4.30E-03	Respiratory system tumors
Barium	D							
Beryllium and compounds	B1	4.30E+00	W	1.20E-04	8.40E+00	B	2.40E-03	Breast, uterus, lung, and bone tumors
Cadmium (diet)	B1				6.10E+00	W	1.80E-03	Respiratory track and lung tumors
Cadmium (water)	B1				6.10E+00	W	1.80E-03	Respiratory track and lung tumors
Chromium (III) (insoluble salts)	NA							
Chromium (VI)	A				4.10E+01	B	1.20E-02	Lung tumors
Cobalt	NA							
Copper	D							
Fluorine (soluble fluoride)	NA							
Iron	NA							
Lead and compounds	B2							
Lithium	NA							
Manganese (diet)	D							
Manganese (water)	D							
Mercury (elemental)	D							
Mercury (inorganic salts)	C							
Molybdenum	NA							
Nickel	NA							
Silica	NA							
Silver	D							
Sulfate	NA							
Tetraoxo-sulfate (1-)	NA							
Thallium (soluble salts)	NA							
Uranium (soluble salts)	NA							
Vanadium (metallic)	NA							
Zinc (metallic)	D							

Table 1.58. (Continued)

Analyte	Class (J)	Oral slope factor ^a	Oral slope factor source	Oral unit risk ^b	Inhalation slope factor ^c	Inhalation slope factor source	Inhalation unit risk ^d	Types of cancers
Organics								
Acenaphthene	NA							
Acenaphthylene	NA							
Acetone	D							
Aldrin	B2	1.70E+01	A	4.90E-04	1.70E+01	B	4.90E-03	
Anthracene	D							
Aroclor-1016	B2	2.00E+00	D		2.00E+00	D	5.71E-04	Hepatocellular and hemangiosarcoma tumors
Aroclor-1221	B2	2.00E+00	D		2.00E+00	D	5.71E-04	Hepatocellular and hemangiosarcoma tumors
Aroclor-1232	B2	2.00E+00	D		2.00E+00	D	5.71E-04	Hepatocellular and hemangiosarcoma tumors
Aroclor-1242	B2	2.00E+00	D		2.00E+00	D	5.71E-04	Hepatocellular and hemangiosarcoma tumors
Aroclor-1248	B2	2.00E+00	D		2.00E+00	D	5.71E-04	Hepatocellular and hemangiosarcoma tumors
Aroclor-1254	B2	2.00E+00	D		2.00E+00	D	5.71E-04	Liver hepatocellular, adenomas, carcinomas, and cholangiomas
Aroclor-1260	B2	2.00E+00	D		2.00E+00	D	5.71E-04	Trabecular carcinoma, adenocarcinoma, and neoplastic nodule
Benz(a)anthracene	B2	7.30E-01	E		3.10E-01	E	8.80E-05	Stomach tumors
Benzene	A	2.90E-02	A	8.30E-07	2.90E-02	B	8.30E-03	
Benzo(a)pyrene	B2	7.30E+00	A	2.10E-04	3.10E+00	H	8.80E-01	Stomach, nasal, larynx, and trachea tumors
Benzo(b)fluoranthene	B2	7.30E-01	E		3.10E-01	E	8.80E-02	Tumors
Benzo(g,h,i)perylene	D							
Benzo(k)fluoranthene	B2	7.30E-02	E		3.10E-02	E	8.80E-03	Skin and lung tumors
bis(2-Chloroethoxy)methane	D							
bis(2-Chloroethyl)ether	B2	1.10E+00	A	3.30E-05	1.10E+00	B	3.30E-04	

Table 1.58. (Continued)

Analyte	Class (J)	Oral slope factor ^a	Oral slope factor source	Oral unit risk ^b	Inhalation slope factor ^c	Inhalation slope factor source	Inhalation unit risk ^d	Types of cancers
bis(2-Chloroisopropyl)ether	NA	7.00E-02						
bis(2-Ethylhexyl)phthalate	B2	1.40E-02	A	4.00E-07				Hepatocellular carcinoma and liver neoplastic nodule
Bromodichloromethane	B2	6.20E-02	A	1.80E-06				
Bromophenyl phenyl ether, 4-	D							
Butyl benzyl phthalate	C							
Butylphthalate, Di-n-	D							
Carbon tetrachloride	B2	1.30E-01	A	3.70E-06	5.30E-02	B	1.50E-05	Liver tumors
Chlordane (alpha and gamma)	B2	3.50E-01	A	1.00E-05	1.30E+00	B	1.00E-04	
Chloro-3-methylphenol, 4-	NA							
Chloroform	B2	6.10E-03	A	1.70E-07	8.10E-02	B	2.30E-05	Colon, bladder, rectum, and liver carcinoma
Chloronaphthalene, beta-	NA							
Chlorophenyl phenyl ether, 4-	NA							
Chrysene	B2	7.30E-03	E		3.10E-03	E	8.80E-07	Carcinomas
DDD	B2	2.40E-01	A	6.90E-06				
DDE	B2	3.40E-01	A	9.70E-06				
DDT	B2	3.40E-01	A	9.70E-06	3.40E-01	B	9.70E-05	
Dibenz(a,h)anthracene	B2	7.30E+00	E		3.10E+00	E	8.80E-04	Immunodepressive effects
Dibenzofuran	NA							
Dichlorobenzene, 1,2-	D							
Dichlorobenzene, 1,3-	D							
Dichlorobenzene, 1,4-	C	2.40E-02	B	6.80E-07				
Dichlorobenzidine, 3,3'-	B2	4.50E-01	A	1.30E-05				
Dichloroethane, 1,1-	C							
Dichloroethane, 1,2-	B2	9.10E-02	A	2.60E-02	9.10E-02	B	2.60E-05	
Dichloroethylene, 1,1-	C	6.00E-01	A	1.70E-05	1.20E+00	B	5.00E-05	Kidney adenocarcinoma
Dichloroethylene, 1,2- (Mixed Isomers)	NA							
Dichloroethylene, 1,2- <i>cis</i> -	D							
Dichloroethylene, 1,2- <i>trans</i> -	D							
Dichloropropene, 1,3-	B2	1.80E-01	B	5.00E-06	1.30E-01	B	3.70E-05	
Dieldrin	B2	1.60E+01	A	4.60E-04	1.60E+01	B	4.60E-03	
Dinitrophenol, 2-Methyl-4,6-	NA							
Dinitrotoluene, 2,4-	B2	6.80E-01	A,C	1.90E-05				
Dinitrotoluene, 2,6-	B2	6.80E-01	A,C	1.90E-05				

Table 1.58. (Continued)

Analyte	Class (J)	Oral slope factor ^a	Oral slope factor source	Oral unit risk ^b	Inhalation slope factor ^c	Inhalation slope factor source	Inhalation unit risk ^d	Types of cancers
Endosulfan	NA							
Endrin	D							
Ethylbenzene	D							
Fluoranthene	D							
Fluorene	D							
Heptachlor	B2	4.50E+00	A	1.30E-04	4.50E+00	B	1.30E-03	
Heptachlor epoxide	B2	9.10E+00	A	2.60E-04	9.10E+00	B	2.60E-03	
Hexachlorobenzene	B2	1.60E+00	A	4.60E-05	1.60E+00	B	4.60E-04	
Hexachlorobutadiene	C	7.80E-02	A	2.20E-06	7.80E-02	B	2.20E-05	
Hexachlorocyclohexane, alpha	B2	6.30E+00	A	1.80E-04	6.30E+00	B	1.80E-03	
Hexachlorocyclohexane, beta	C	1.80E+00	A	5.30E-05	1.80E+00	B	5.30E-04	
Hexachlorocyclohexane, delta	D							
Hexachlorocyclohexane, gamma	B2	1.30E+00	B	3.70E-05				
Hexachlorocyclopentadiene	D							
Hexachloroethane	C	1.40E-02	A	4.00E-07	1.40E-02	B	4.00E-06	
Hexanone, 2-	NA							
Indeno(1,2,3-cd)pyrene	B2	7.30E-01	E		3.10E-01	E	8.80E-05	Tumors
Methoxychlor	D							
Methylene chloride	B2	7.50E-03	A	2.10E-07	1.65E-03	F	4.70E-07	Liver hepatocellular carcinoma and neoplastic nodule
Methylnaphthalene, 2-	NA							
Naphthalene	C							
Nitroaniline, 2-	NA							
Nitroaniline, 3-	NA							
Nitroaniline, 4-	NA							
Nitrophenol, 2-	NA							
Nitroso-di-N-propylamine, N-	B2	7.00E+00	A	2.00E-04				Hepatocellular carcinomas
Nitrosodiphenylamine, N-	B2	4.90E-03	A	1.40E-07				Transitional cell carcinoma of the bladder
Octyl phthalate, di-N-	NA							
Pentachlorophenol	B2	1.20E-01	A	3.00E-06				
Phenanthrene	D							
Pyrene	D							
Tetrachloroethylene	NA	5.20E-02	G	1.50E-06	2.00E-03	G	5.80E-7	Leukemia and liver cancer
Toxaphene	B2	1.10E+00	A	3.20E-05	1.10E+00	B	3.20E-04	

Table 1.58. (Continued)

Analyte	Class (J)	Oral slope factor ^a	Oral slope factor source	Oral unit risk ^b	Inhalation slope factor ^c	Inhalation slope factor source	Inhalation unit risk ^d	Types of cancers
Trichlorobenzene, 1,2,4-	D							
Trichloroethane, 1,1,2-	C	5.70E-02	A	1.60E-06	5.70E-02	B	1.60E-05	
Trichloroethylene	NA	1.10E-02	G	3.20E-07	6.00E-03	G	1.70E-06	Liver and lung cancer
Trichlorophenol, 2,4,5-	NA							
Trichlorophenol, 2,4,6-	B2	1.10E-02	A	3.10E-07	1.00E-02	B	3.10E-06	
Vinyl chloride	A	1.90E+00	B	5.40E-05	3.00E-01	B	8.40E-05	Liver, lung, digestive, track, and brain tumors
Xylene (Mixture)	D							

Analyte	ICRP Lung Class (I)	Oral Slope Factor ^a	Oral Slope Factor Source	Inhalation Slope Factor ^c	Inhalation Slope Factor Source	Types of Cancers
Radionuclides						
Cs-137+D	D	3.16E-11	B	1.91E-11	B	Various
Np-237+D	W	3.00E-10	B	3.45E-08	B	Various
Rn-222	*			7.57E-12	L	Various
Tc-99	W	1.40E-12	B	2.89E-12	B	Various
Th-234	Y	1.93E-11	B	1.90E-11	B	Various
U-234	Y	4.44E-11	B	1.40E-08	B	Various
U-238+D	Y	6.20E-11	B	1.24E-08	B	Various

^a The units for these oral slope factors are (mg/kg-d)⁻¹ for nonradionuclides and (risk/pCi) for radionuclides.

^b The units for these oral unit risks are L/μg.

^c The units for these inhalation slope factors are (mg/kg-d)⁻¹ for nonradionuclides and (risk/pCi) for radionuclides.

^d The units for these inhalation unit risks are m³/μg.

A = Source: Integrated Risk Information System (IRIS)

B = Source: Health Effects and Environmental Affects Summary Table (HEAST) 1995

C = Listed as "Dinitrotoluene mixture, 2,4-/2,6-" in IRIS. The value is based on a study using technical grade DNT.

D = The cancer potency of PCB mixtures is determined using a three-tiered approach that depends on the information available. Criteria for use of the High Risk and Persistence Tier include: food chain exposure; sediment or soil ingestion; dust or aerosol inhalation; dermal exposure if an absorption factor has been applied; any early-life exposure; and the presence of dioxin-like, tumor-promoting, or persistent congeners. This value, 2.00E+00 per (mg/kg)/day, is the upperbound slope factor for the High Risk and Persistence Tier. The central-estimate slope factor for this tier is 1.00+00 per (mg/kg)/day.

E = Region 4 has adopted a Toxicity Equivalency Factor (TEF) methodology for carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and dioxins and furans on the Target Compound List as described in *Supplemental Guidance from RAGS: Region 4 Bulletins, Human Health Risk Assessment (Interim Guidance)* (EPA November 1995). These TEFs are based on the potency of each compound relative to that of benzo(a)pyrene (BaP) and 2,3,7,8-TCDD. The following TEFs were used to convert each PAH concentration to an equivalent concentration of BaP: (1) benzo(a)pyrene, TEF=1.0; (2) benz(a)anthracene, TEF=0.1; (3) benzo(b)fluoranthene, TEF=0.1; (4) benzo(k)fluoranthene, TEF=0.01; (5) chrysene, TEF=0.001; (6) dibenz(a,h)anthracene, TEF=1.0; (7) indeno(1,2,3-cd)pyrene, TEF=0.1. The following TEFs were used to convert each dioxin and furan concentration to an equivalent concentration of TCDD: (1) 2,3,7,8-TCDD, TEF=1.0; (2) 2,3,7,8-PeCDD, TEF=0.5; (3) 2,3,7,8-HxCDD, TEF=0.1; (4) 2,3,7,8-HpCDD, TEF=0.01; (5) OCDD, TEF=0.001; (6) 2,3,7,8-TCDF, TEF=0.1; (7) 1,2,3,7,8-PeCDF, TEF=0.5; (8) 2,3,4,7,8-PeCDF, TEF=0.05; (9) 2,3,7,8-HxCDF, TEF=0.1; (10) 2,3,7,8-HpCDF, TEF=0.01; and (11) OCDF, TEF=0.001.

F = The Inhalation Slope Factor was calculated from inhalation unit risk as described in *Supplemental Guidance from RAGS: Region 4 Bulletins, Human Health Risk Assessment (Interim Guidance)* (EPA November 1995).

Table 1.58. (Continued)

G = The Risk Assessment Program has contacted Superfund and been given provisional values that should be used for DOE-ORR projects. This value should be clearly documented as provisional. For other projects, Superfund Health Risk Technical Support Center should be contacted directly at (513) 569-7300.

H = Provisional inhalation toxicity values have been developed by the National Center for Environmental Assessment (NCEA). RAGS: Region 4 Bulletins, Human Health Risk Assessment (Interim Guidance) (November 1995).

I = Lung clearance classification recommended by the International Commission on Radiological Protection (ICRP): Y = Year, W = Week, D = Day, * = Gas.

J = Codes used for classification weight-of-evidence assigned by EPA are as follows: A = known human carcinogen; B1 = probable human carcinogen based on limited human data; B2 = probable human carcinogen based on animal data. Human data inadequate or limited; C = possible human carcinogen; D = cannot be classified because of inadequate data; and E = evidence that analyte is not carcinogenic.

K = The carcinogenic toxicity factors are obtained from the EPA Region 9 Preliminary Remediation Goal tables.

L = To derive the inhalation slope factor for Rn-222+D, EPA's Office of Radiation and Indoor Air (ORIA) uses a risk model based on radon decay product exposure and the following exposure assumptions: inhalation rate of 2.2E+04 L/day; 50% equilibrium for decay products; and a risk coefficient of 2.36E-4 cases per working level month (WLM). A more detailed description of ORIA's radon risk assessment methodology is provided in the EPA CRAVE Summary Sheet, *Inhaled Rn-222 and its Short Half-Life Decay Products*.

W = Withdrawn.

NA = No Information available.

Note: Blank cells indicate that data are not available or are not appropriate.

Table 1.59. Chronic toxicity values for the ingestion and inhalation exposure pathways (noncarcinogenic effects)

Analyte	Oral reference dose (mg/kg-day)	Oral reference dose Source	Inhalation reference dose (mg/kg-day)	Inhalation reference dose source	RfD basis (vehicle)	Target Organ critical effect	Confidence level	Uncertainty factor/modifying factor
Inorganics								
Aluminum	1.00E+00	I						
Ammonia			2.86E-02	A				
Antimony (metallic)	4.00E-04	A			Or - water	Liver, heart, and developmental toxicity	Low	(O)UF=1000
Arsenic (inorganic)	3.00E-04	A			Or - water	Skin	Medium	(O)UF=3
Barium	7.00E-02	A	1.34E-04	B,C	Or, Inh	Increased blood pressure, baritosis	(O)Medium (I)NA	(O)UF=3, (I)UF=1000
Beryllium and compounds	2.00E-03	A	2.00E-02	A	Or	Weight loss	Low	(O)UF=100
Cadmium (diet)	1.00E-03	A	5.71E-05	K	Or	Rental toxicity, bone	High	(O)UF=10 (I)UF=NA
Cadmium (water)	5.00E-04	A	5.71E-05	K	Or - water	Rental toxicity, bone	High	(O)UF=10 (I)UF=NA
Chromium (III) (insoluble salts)	1.50E+00	A						
Chromium (VI)	3.00E-03	A	2.86E-05	A	Or	GI, lungs	Low	(O)UF=500
Cobalt	6.00E-02	K	5.70E-06	K				
Copper	4.00E-02	E						
Fluorine (soluble fluoride)	6.00E-02	A						
Iron	3.00E-01	K						
Lead and compounds	1.00E-07	J	2.86E-04	J	Or	Changes in levels of blood enzymes	(O)Low (I)NA	(O)UF=NA (I)UF=NA
Lithium	2.00E-02	K						
Manganese (diet)	1.40E-01	A,D	1.43E-05	A	Or, Inh	CNS, lungs	Medium	(O)UF=1, (I)UF=1000
Manganese (water)	4.60E-02	A,D	1.43E-05	A	Or, Inh	CNS, lungs	Medium	(O)UF=1, (O)MF=3, (I)UF=1000
Mercury (inorganic salts)	3.00E-04	A,G	8.57E-05	I	Or, Inh	Kidney, CNS, autoimmune effects	(O)High (I)NA	(O)UF=1000, (I)UF=NA
Molybdenum	5.00E-03	A						
Nickel	2.00E-02	A,L						
Silica								
Silver	5.00E-03	A			Or	Argyria	Low	(O)UF=3
Sulfate								
Tetraoxo-sulfate (1-)								
Thallium (soluble salts)								
Uranium (soluble salts)	3.00E-03	A			Or	Weight loss and nephrotoxicity	Medium	(O)UF=1000
Vanadium (metallic)	7.00E-03	B			Or - water	Kidney, blood	NA	(O)UF=100
Zinc (metallic)	3.00E-01	A			Or	Lung, GI, and hypochromic microcytic anemia	Medium (O)UF=10	

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Table 1.59. (Continued)

Analyte	Oral reference dose (mg/kg-day)	Oral reference dose Source	Inhalation reference dose (mg/kg-day)	Inhalation reference dose source	RfD basis (vehicle)	Target Organ critical effect	Confidence level	Uncertainty factor/modifying factor
Organics								
Accenaphthene	6.00E-02	A	6.00E-02	K	Or	Hepatotoxicity	(O)Low	(O)UF=3000
Acenaphthylene								
Acetone	1.00E-01	A	1.00E-01	K				
Aldrin	3.00E-01	A	3.00E-05	K				
Anthracene	3.00E-01	A	3.00E-01	K	Or	No observed effects	(O)Low	(O)UF=3000
Aroclor-1016	7.00E-05	A	7.00E-05	K				
Aroclor-1221								
Aroclor-1232								
Aroclor -242								
Aroclor -248								
Aroclor-1254	2.00E-05	A	2.00E-05	K	Or	Immune system toxicity	NA	(O)UF=300
Aroclor-1260								
Benz(a)anthracene								
Benzene			1.71E-03	K				
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(g,h,i)perylene								
Benzo(k)fluoranthene								
bis(2-Chloroethoxy)methane								
bis(2-Chloroethyl)ether								
bis(2-Chloroisopropyl)ether	4.00E-02	A	4.00E-02	K				
bis(2-Ethylhexyl)phthalate	2.00E-02	A	2.00E-02	K	Or	Liver	Medium	(O)UF=1000
Bromodichloromethane	2.00E-02	A	2.00E-02	K				
Bromophenyl phenyl ether, 4-								
Butyl benzyl phthalate	2.00E-01	A	2.00E-01	K	Or	Weight loss in liver and brain	Low	(O)UF=1000
Butylphthalate, Di-n-	1.00E-01	A	1.00E-01	K				
Carbon tetrachloride	7.00E-04	A	5.71E-04	H,K	Or	Liver	Medium	(O)UF=1000 (I)UF=NA
Chlordane (alpha and gamma)	5.00E-04	A	2.00E-04	A				
Chloro-3-methylphenol, 4-								
Chloroform	1.00E-02	A	1.00E-02	K	Or	Liver	Medium	(O)UF=1000
Chloronaphthalene, beta-	8.00E-02	A	8.00E-02	K				
Chlorophenyl phenyl ether, 4-								
Chrysene								
DDD								
DDE								
DDT	5.00E-04	A	5.00E-04	K				
Dibenz(a,h)anthracene								
Dibenzofuran	4.00E-03	K	4.00E-03	K				
Dichlorobenzene, 1,2-	9.00E-02	A	5.71E-02	B,C				

Table 1.59. (Continued)

Analyte	Oral reference dose (mg/kg-day)	Oral reference dose Source	Inhalation reference dose (mg/kg-day)	Inhalation reference dose source	RfD basis (vehicle)	Target Organ critical effect	Confidence level	Uncertainty factor/modifying factor
Dichlorobenzene, 1,3-	3.00E-02	K	2.30E-03	K				
Dichlorobenzene, 1,4-			2.29E-01	A				
Dichlorobenzidine, 3,3'-								
Dichloroethane, 1,1-	1.00E-01	B	1.43E-01	B,C				
Dichloroethane, 1,2-			2.86E-03	K				
Dichloroethylene, 1,1-	9.00E-03	A	9.00E-03	K	Or, Inh	Kidney, Liver	Medium	(O)UF=1000
Dichloroethylene, 1,2- (mixed isomers)	9.00E-03	B	9.00E-03	K				
Dichloroethylene, 1,2- <i>cis</i> -	1.00E-02	B	9.00E-03	K	Or - water	Decreased hematocrit, liver	NA	(O)UF=NA
Dichloroethylene, 1,2- <i>trans</i> -	2.00E-02	A	2.00E-02	K	Or - water	Increased serum alkaline phosphatase	Low	(O)UF=1000
Dichloropropene, 1,3-	3.00E-04	A	5.71E-03	A				
Dieldrin	5.00E-05	A	5.00E-05	K				
Dinitrophenol, 2-methyl-4,6-								
Dinitrotoluene, 2,4-	2.00E-03	A	2.00E-03	K				
Dinitrotoluene, 2,6-	1.00E-03	B	1.00E-03	K				
Endosulfan	6.00E-03	A	6.00E-03	K				
Endrin	3.00E-04	A	3.00E-04	K				
Ethylbenzene	1.00E-01	A	2.86E-01	A				
Fluoranthene	4.00E-02	A	4.00E-02	K	Or	Nephropathy, liver, blood	Low	(O)UF=3000
Fluorene	4.00E-02	A	4.00E-02	K	Or	Decreased RBC, blood	Low	(O)UF=3000
Heptachlor	5.00E-04	A	5.00E-04	K				
Heptachlor epoxide	1.30E-05	A	1.30E-05	K				
Hexachlorobenzene	8.00E-04	A	8.00E-04	K				
Hexachlorobutadiene	2.00E-04	B	2.00E-04	K				
Hexachlorocyclohexane, alpha								
Hexachlorocyclohexane, beta								
Hexachlorocyclohexane, delta								
Hexachlorocyclohexane, gamma	3.00E-04	A	3.00E-04	K				
Hexachlorocyclopentadiene	7.00E-03	A	7.00E-05	B				
Hexachloroethane	1.00E-03	A	1.00E-03	K				
Hexanone, 2-								
Indeno(1,2,3-cd)pyrene								
Methoxychlor	5.00E-03	A	5.00E-03	K				
Methylene chloride	6.00E-02	A	8.57E-01	B	Or - water, Inh	Liver	(O)Medium (I)NA	(O)UF=100 (I)UF=100
Methylnaphthalene, 2-								
Naphthalene	2.00E-02	A,H	8.57E-04	A				
Nitroaniline, 2-	6.00E-05	K	5.71E-05	B				
Nitroaniline, 3-								
Nitroaniline, 4-								
Nitrophenol, 2-								

Table 1.59. (Continued)

Analyte	Oral reference dose (mg/kg-day)	Oral reference dose Source	Inhalation reference dose (mg/kg-day)	Inhalation reference dose source	RfD basis (vehicle)	Target Organ critical effect	Confidence level	Uncertainty factor/modifying factor
Nitroso-di-N-propylamine, N-Nitrosodiphenylamine, N-Octyl phthalate, di-N-Pentachlorophenol	2.00E-02	B	2.00E-02	K				
Phenanthrene	3.00E-02	A	3.00E-02	K	Or	Kidney Hepatotoxicity, weight gain	Low	(O)UF=3000
Pyrene	1.00E-02	A	1.71E-01	H	Or		Medium	(O)UF=1000
Tetrachloroethylene								
Toxaphene								
Trichlorobenzene, 1,2,4-	1.00E-02	A	5.71E-01	B				
Trichloroethane, 1,1,2-	4.00E-03	A	4.00E-03	K				
Trichloroethylene	6.00E-03	H	6.00E-03	K	Or - water	Liver toxicity	NA	NA
Trichlorophenol, 2,4,5-	1.00E-01	A	1.00E-01	K				
Trichlorophenol, 2,4,6-								
Vinyl chloride								
Xylene (mixture)	2.00E+00	A	2.00E+00	K				

Notes: Blank cells indicate that data are not available or are not appropriate; NA = information not readily available at this time; RfD = reference dose; CNS = central nervous system; UF = uncertainty factor; the default value for MF (modifying factor) is one (1); and codes used for RfD basis are InH = inhalation and Or = oral.

A = Source: Integrated Risk Information System (IRIS) 1998.

B = Source: Health Effects and Environmental Affects Summary Table (HEAST) 1995.

C = This value was derived from methodology that is not current with the interim inhalation methodology used by the RfD/RfC Work Group (see HEAST Table 2 for details). Table 2 lists subchronic and chronic noncancer toxicity values that are found in Agency document methods that are not currently practiced by the RfD/RfC Work Group. These values are considered to be adequate provisional values for risk assessment purposes at Superfund and RCRA sites, but are subject to being reviewed by the RfD/RfC Work Group and revised when necessary to reflect current work group practices.

D = IRIS no longer separates manganese values for chronic oral RfDs into water and diet RfDs. The chronic oral RfD is now for the total oral intake of manganese. HEAST manganese values remain separated into subchronic oral RfD (water) and subchronic oral RfD (diet). Since it was necessary to keep the RfD categories for both diet and water on the table to list HEAST values, the IRIS chronic oral RfD for water was changed from 5.00E-03 to 1.40E-01 (the new manganese value for total oral intake) and footnoted "m". The oral toxicity values for "Manganese (Diet)" are to be used for food uses only while the oral toxicity values for "Manganese (Water)" are to be used for water and soil uses.

E = HEAST concluded that toxicity data were inadequate for calculation of oral RfDs for copper and substituted the current drinking water standard (MCLG) of 1.3 mg/L.

G = This value was withdrawn from IRIS or HEAST. If this chemical is identified as a risk driver, the risk assessor should consult Region 4 Office of Health Assessment personnel. All withdrawn values should be clearly documented when used in any risk assessment activity.

H = The Risk Assessment Program contacted Superfund and has been given provisional values that should be used for DOE-ORR projects. This value should be clearly documented as provisional. For other projects, contact Superfund Health Risk Technical Support Center.

I = Value taken from EPA Region III Risk-Based Concentration Table (EPA 1996).

J = Value used based on guidance from the Kentucky Department of Environmental Protection.

K = The carcinogenic toxicity factors are obtained from the EPA Region 9 Preliminary Remediation Goal tables.

L = This entry was formerly listed as Nickel (metallic) with the CAS number 7440-02-0. The chemical name was changed so that it more accurately indicates the chemicals used in the studies from which the values were derived. Several different nickel salts were used, so the listing of one CAS number is not appropriate and has been replaced with the word VARIOUS. The values remain unchanged. Risk Assessment Program assigns these values to Nickel (metallic), although they are no longer listed with that chemical name.

All withdrawn values should be clearly documented when used in any risk assessment activity.

Table 1.60. Chronic toxicity values for the dermal and external exposure pathways
(carcinogenic effects)

Analyte	Oral slope factor ^a	GI absorption factor	Absorbed slope factor ^b
Inorganics			
Aluminum		0.1	
Ammonia		0.2	
Antimony (metallic)		0.02	
Arsenic (inorganic)	1.50E+00	0.41	3.66E+00
Barium		0.07	
Beryllium and compounds	4.30E+00	0.01	4.30E+02
Cadmium (diet)		0.01	
Cadmium (water)		0.01	
Chromium (III) (insoluble salts)		0.005	
Chromium (VI)		0.02	
Cobalt		0.8	
Copper		0.3	
Fluorine (soluble fluoride)		0.97	
Iron		0.15	
Lead and compounds		0.15	
Lithium		0.8	
Manganese (diet)		0.04	
Manganese (water)		0.04	
Mercury (elemental)		0.0001	
Mercury (inorganic salts)		0.07	
Molybdenum		0.38	
Nickel		0.27	
Silica			
Silver		0.18	
Sulfate			
Tetraoxo-sulfate (1-)			
Thallium (soluble salts)		0.15	
Uranium (soluble salts)		0.85	
Vanadium (metallic)		0.01	
Zinc (metallic)		0.2	
Organics			
Acenaphthene		0.31	
Acenaphthylene		0.31	
Acetone		0.83	
Aldrin	1.70E+01	0.5	3.40E+01
Anthracene		0.76	
Aroclor-1016	2.00E+00	0.9	2.22E+00
Aroclor-1221	2.00E+00	0.9	2.22E+00
Aroclor-1232	2.00E+00	0.9	2.22E+00
Aroclor-1242	2.00E+00	0.9	2.22E+00
Aroclor-1248	2.00E+00	0.9	2.22E+00
Aroclor-1254	2.00E+00	0.9	2.22E+00
Aroclor-1260	2.00E+00	0.9	2.22E+00
Benz(a)anthracene	7.30E-01	0.31	2.35E+00
Benzene	2.90E-02	0.97	2.99E-02
Benzo(a)pyrene	7.30E+00	0.31	2.35E+01
Benzo(b)fluoranthene	7.30E-01	0.31	2.35E+00
Benzo(g,h,i)perylene		0.31	
Benzo(k)fluoranthene	7.30E-02	0.31	2.35E-01
bis(2-Chloroethoxy)methane		0.5	
bis(2-Chloroethyl)ether	1.10E+00	0.5	2.20E+00

Table 1.60. (Continued)

Analyte	Oral slope factor ^a	GI absorption factor	Absorbed slope factor ^b
bis(2-Chloroisopropyl)ether	7.00E-02	0.5	1.40E-01
bis(2-Ethylhexyl)phthalate	1.40E-02	0.19	7.35E-02
Bromodichloromethane	6.20E-02	0.98	6.33E-02
Bromophenyl phenyl ether, 4-		0.5	
Butyl benzyl phthalate		0.61	
Butylphthalate, di-n-		1	
Carbon tetrachloride	1.30E-01	0.65	2.00E-01
Chlordane	3.50E-01	0.5	7.00E-01
Chloro-3-methylphenol, 4-			
Chloroform	6.10E-03	0.2	3.05E-02
Chloronaphthalene, beta-		0.5	
Chlorophenyl phenyl ether, 4-			
Chrysene	7.30E-03	0.31	2.35E-02
DDD	2.40E-01	0.7	3.43E-01
DDE	3.40E-01	0.7	4.86E-01
DDT	3.40E-01	0.7	4.86E-01
Dibenz(a,h)anthracene	7.30E+00	0.31	2.35E+01
Dibenzofuran		0.5	
Dichlorobenzene, 1,2-		0.8	
Dichlorobenzene, 1,3-		0.8	
Dichlorobenzene, 1,4-	2.40E-02	0.9	2.67E-02
Dichlorobenzidine, 3,3'-	4.50E-01	0.5	9.00E-01
Dichloroethane, 1,1-		1	
Dichloroethane, 1,2-	9.10E-02	1	9.10E-02
Dichloroethylene, 1,1-	6.00E-01	1	6.00E-01
Dichloroethylene, 1,2- (mixed isomers)		0.8	
Dichloroethylene, 1,2- <i>cis</i> -		1	
Dichloroethylene, 1,2- <i>trans</i> -		1	
Dichloropropene, 1,3-	1.80E-01	0.55	3.27E-01
Dieldrin	1.60E-01	0.5	3.20E+01
Dinitrophenol, 2-methyl-4,6-		1	
Dinitrotoluene, 2,4-	6.80E-01	0.85	8.00E-01
Dinitrotoluene, 2,6-	6.80E-01	0.85	8.00E-01
Endosulfan		0.5	
Endrin		0.02	
Ethylbenzene		0.97	
Fluoranthene		0.31	
Fluorene		0.5	
Heptachlor	4.50E+00	0.72	6.25E+00
Heptachlor epoxide	9.10E+00	0.72	1.26E+01
Hexachlorobenzene	1.60E+00	0.5	3.20E+00
Hexachlorobutadiene	7.80E-02	0.5	1.56E-01
Hexachlorocyclohexane, alpha	6.30E+00	0.97	6.49E+00
Hexachlorocyclohexane, beta	1.80E+00	0.91	1.98E+00
Hexachlorocyclohexane, delta		0.5	
Hexachlorocyclohexane, gamma	1.30E+00	0.97	1.34E+00
Hexachlorocyclopentadiene		0.5	
Hexachloroethane	1.40E-02	0.5	2.80E-02
Hexanone, 2-		0.66	
Indeno(1,2,3-cd)pyrene	7.30E-01	0.31	2.35E+00
Methoxychlor		0.5	
Methylene chloride	7.50E-03	0.95	7.89E-03
Methylnaphthalene, 2-		0.8	
Naphthalene		0.8	

Table 1.60. (Continued)

Analyte	Oral slope factor ^a	GI absorption factor	Absorbed slope factor ^b
Nitroaniline, 2-		0.5	
Nitroaniline, 3-		0.5	
Nitroaniline, 4-		0.5	
Nitrophenol, 2-			
Nitroso-di-N-propylamine, N-	7.00E+00	0.25	2.80E+01
Nitrosodiphenylamine, N-	4.90E-03	0.25	1.96E-02
Octyl phthalate, di-N-		0.9	
Pentachlorophenol	1.20E-01	1	1.20E-01
Phenanthrene		0.73	
Pyrene		0.31	
Tetrachloroethylene	5.20E-02	1	5.20E-02
Toxaphene	1.10E+00	0.5	2.20E+00
Trichlorobenzene, 1,2,4-		0.97	
Trichloroethane, 1,1,2-	5.70E-02	0.81	7.04E-02
Trichloroethylene	1.10E-02	0.15	7.33E-02
Trichlorophenol, 2,4,5-		0.5	
Trichlorophenol, 2,4,6-	1.10E-02	0.5	2.20E-02
Vinyl chloride	1.90E+00	1	1.90E+00
Xylene (mixture)		0.92	

Analyte	Oral slope factor ^a	GI absorption factor	External exposure slope factor ^c
Radionuclides			
Cs-137+D	3.16E-11	0.95	2.09E-06
Np-237+D	3.00E-10	0.001	4.62E-07
Rn-222			
Tc-99	1.40E-12	0.8	6.19E-13
Th-234	1.93E-11	0.0002	3.50E-09
U-234	4.44E-11	0.05	2.14E-11
U-238+D	6.20E-11	0.05	6.57E-08

^a The units for these oral slope factors are (mg/kg-d)⁻¹ for nonradionuclides and (risk/pCi) for radionuclides. See Table 1.58 for the source of the oral slope factors.

^b The units for these absorbed dose slope factors are (mg/kg-d)⁻¹ for nonradionuclides. Absorbed cancer slope factors calculated by dividing the administered cancer slope factor by GI absorption factor; this value is used in the BHHH to calculate contribution to cancer risk from dermal exposure.

^c The units for these external exposure slope factors are [(Risk G)/(pCi·yr)] for radionuclides.

Note: Blank cells indicate that data are not available or are not appropriate.

Table 1.61. Chronic toxicity values for the dermal pathways (noncarcinogenic effects)

Analyte	Oral reference dose ^a (mg/kg-day)	GI absorption factor (%)	Absorbed reference dose ^b (mg/kg-day)
Inorganics			
Aluminum	1.00E+00	0.1	1.00E-01
Ammonia		0.2	
Antimony (metallic)	4.00E-04	0.02	8.00E-06
Arsenic (norganic)	3.00E-04	0.41	1.23E-04
Barium	7.00E-02	0.07	4.90E-03
Beryllium and compounds	2.00E-03	0.01	2.00E-05
Cadmium (diet)	1.00E-03	0.01	1.00E-05
Cadmium (water)	5.00E-04	0.01	5.00E-06
Chromium (III) (insoluble salts)	1.50E+00	0.005	7.50E-03
Chromium (VI)	3.00E-03	0.02	6.00E-05
Cobalt	6.00E-02	0.8	4.80E-02
Copper	4.00E-02	0.3	1.20E-02
Fluorine (soluble fluoride)	6.00E-02	0.97	5.82E-02
Iron	3.00E-01	0.15	4.50E-02
Lead and compounds	1.00E-07	0.15	1.50E-08
Lithium	2.00E-02	0.8	1.60E-02
Manganese (diet)	1.40E-01	0.04	5.60E-03
Manganese (water)	4.60E-02	0.04	1.84E-03
Mercury (inorganic salts)	3.00E-04	0.07	2.10E-05
Molybdenum	5.00E-03	0.38	1.90E-03
Nickel	2.00E-02	0.27	5.40E-03
Silica			
Silver	5.00E-03	0.18	9.00E-04
Sulfate		0.2	
Tetraoxo-sulfate (1-)			
Thallium (soluble salts)		0.15	
Uranium (soluble salts)	3.00E-03	0.85	2.55E-03
Vanadium (metallic)	7.00E-03	0.01	7.00E-05
Zinc (metallic)	3.00E-01	0.2	6.00E-02
Organics			
Acenaphthene	6.00E-02	0.31	1.86E-02
Acenaphthylene		0.31	
Acetone	1.00E-01	0.83	8.30E-02
Aldrin	3.00E-05	0.5	1.50E-05
Anthracene	3.00E-01	0.76	2.28E-01
Aroclor-1016	7.00E-05	0.9	6.30E-05
Aroclor-1221		0.9	
Aroclor-1232		0.9	
Aroclor-1242		0.9	
Aroclor-1248		0.9	
Aroclor-1254	2.00E-05	0.9	1.80E-05
Aroclor-1260		0.9	
Benz(a)anthracene		0.31	
Benzene		0.97	
Benzo(a)pyrene		0.31	
Benzo(b)fluoranthene		0.31	
Benzo(g,h,i)perylene		0.31	
Benzo(k)fluoranthene		0.31	
bis(2-Chloroethoxy)methane		0.5	
bis(2-Chloroethyl)ether		0.5	
bis(2-Chloroisopropyl)ether	4.00E-02	0.5	2.00E-02
bis(2-Ethylhexyl)phthalate	2.00E-02	0.19	3.80E-03
Bromodichloromethane	2.00E-02	0.98	1.96E-02
Bromophenyl phenyl ether, 4-		0.5	
Butyl benzyl phthalate	2.00E-01	0.61	1.22E-01
Butylphthalate, di-n-	1.00E-01	1	1.00E-01

Table 1.61. (Continued)

Analyte	Oral reference dose ^a (mg/kg-day)	GI absorption factor (%)	Absorbed reference dose ^b (mg/kg-day)
Carbon tetrachloride	7.00E-04	0.65	4.55E-04
Chlordane	5.00E-04	0.5	2.50E-04
Chloro-3-methylphenol, 4-			
Chloroform	1.00E-02	0.2	2.00E-03
Chloronaphthalene, beta-	8.00E-02	0.5	4.00E-02
Chlorophenyl phenyl ether, 4-			
Chrysene		0.31	
DDD		0.7	
DDE		0.7	
DDT	5.00E-04	0.7	3.50E-04
Dibenz(a,h)anthracene		0.31	
Dibenzofuran	4.00E-03	0.5	2.00E-03
Dichlorobenzene, 1,2-	9.00E-02	0.8	7.20E-02
Dichlorobenzene, 1,3-	3.00E-02	0.8	2.40E-02
Dichlorobenzene, 1,4-		0.9	
Dichlorobenzidine, 3,3'-		0.5	
Dichloroethane, 1,1-	1.00E-01	1	1.00E-01
Dichloroethane, 1,2-		1	
Dichloroethylene, 1,1-	9.00E-03	1	9.00E-03
Dichloroethylene, 1,2- (mixed isomers)	9.00E-03	0.8	7.20E-03
Dichloroethylene, 1,2- <i>cis</i> -	1.00E-02	1	1.00E-02
Dichloroethylene, 1,2- <i>trans</i> -	2.00E-02	1	2.00E-02
Dichloropropene, 1,3-	3.00E-04	0.55	1.65E-04
Dieldrin	5.00E-05	0.5	2.50E-05
Dinitrophenol, 2-methyl-4,6-		1	
Dinitrotoluene, 2,4-	2.00E-03	0.85	1.70E-03
Dinitrotoluene, 2,6-	1.00E-03	0.85	8.50E-04
Endosulfan	6.00E-03	0.5	3.00E-03
Endrin	3.00E-04	0.02	6.00E-06
Ethylbenzene	1.00E-01	0.97	9.70E-02
Fluoranthene	4.00E-02	0.31	1.24E-02
Fluorene	4.00E-02	0.5	2.00E-02
Heptachlor	5.00E-04	0.72	3.60E-04
Heptachlor epoxide	1.30E-05	0.72	9.36E-06
Hexachlorobenzene	8.00E-04	0.5	4.00E-04
Hexachlorobutadiene	2.00E-04	0.5	1.00E-04
Hexachlorocyclohexane, alpha		0.97	
Hexachlorocyclohexane, beta		0.91	
Hexachlorocyclohexane, delta		0.5	
Hexachlorocyclohexane, gamma	3.00E-04	0.97	2.91E-04
Hexachlorocyclopentadiene	7.00E-03	0.5	3.50E-03
Hexachloroethane	1.00E-03	0.5	5.00E-04
Hexanone, 2-		0.66	
Indeno(1,2,3-cd)pyrene		0.31	
Methoxychlor	5.00E-03	0.5	2.50E-03
Methylene chloride	6.00E-02	0.95	5.70E-02
Methylnaphthalene, 2-		0.8	
Naphthalene	2.00E-02	0.8	1.60E-02
Nitroaniline, 2-	6.00E-05	0.5	3.00E-05
Nitroaniline, 3-		0.5	
Nitroaniline, 4-		0.5	
Nitrophenol, 2-			
Nitroso-di-N-propylamine, N-		0.25	
Nitrosodiphenylamine, N-		0.25	
Octyl phthalate, di-N-	2.00E-02	0.9	1.80E-02
Pentachlorophenol	3.00E-02	1	3.00E-02

Table 1.61. (Continued)

Analyte	Oral reference dose ^a (mg/kg-day)	GI absorption factor (%)	Absorbed reference dose ^b (mg/kg-day)
Phenanthrene		0.73	
Pyrene	3.00E-02	0.34	9.30E-03
Tetrachloroethylene	1.00E-02		1.00E-02
Toxaphene		0.5	
Trichlorobenzene, 1,2,4-	1.00E-02	0.97	9.70E-03
Trichloroethane, 1,1,2-	4.00E-03	0.8	3.24E-03
Trichloroethylene	6.00E-03	0.15	9.00E-04
Trichlorophenol, 2,4,5-	1.00E-01	0.5	5.00E-02
Trichlorophenol, 2,4,6-		0.5	
Vinyl chloride			
Xylene (mixture)	2.00E+00	0.92	1.84E+00

^a See Table 1.59 for the source of the administered reference dose; this value is equivalent to the reference dose for the oral route of exposure in Table 1.59.

^b Absorbed reference doses are calculated by multiplying the administered reference dose by the GI absorption factor; this value is used in the BHHR to calculate contribution to systemic toxicity from dermal exposure.

Note: Blank cells indicate that data are not available or are not appropriate.

Table 1.62. Systemic toxicity for the current industrial worker

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Chromium	2.00E-03	4.29E-01	8.70E-07	4.31E-01	99.89
Anthracene	1.89E-07	2.14E-06	3.05E-08	2.36E-06	0.00
Benz (a)anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Chrysene					
Di-n-butylphthalate	3.77E-07	3.24E-06	5.87E-09	3.62E-06	0.00
Di-n-octylphthalate	2.94E-06	2.80E-05	6.18E-09	3.10E-05	0.01
Dibenz (a, h) anthracene					
Fluoranthene	3.34E-06	9.26E-05	1.38E-07	9.61E-05	0.02
Indeno (1, 2, 3-cd) pyrene					
Pyrene	4.81E-06	1.33E-04	1.59E-07	1.38E-04	0.03
bis (2-Ethylhexyl) phthalate	4.16E-06	1.88E-04	2.44E-09	1.92E-04	0.04
Pathway Total	2.01E-03	4.30E-01	1.21E-06	4.32E-01	
Fraction of Total	4.66E-03	9.95E-01	2.81E-06		

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Beryllium	3.84E-04	1.65E-01	5.58E-07	1.66E-01	3.15
Chromium	1.45E-02	3.11E+00	6.31E-06	3.12E+00	59.54
Vanadium	4.54E-03	1.95E+00		1.96E+00	37.31
Pathway Total	1.94E-02	5.23E+00	6.87E-06	5.25E+00	
Fraction of Total	3.70E-03	9.96E-01	1.31E-06		

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Chromium	8.92E-04	1.92E-01	3.89E-07	1.93E-01	0.01
Lead	1.22E+02	3.50E+03	1.77E-07	3.62E+03	99.99
Zinc	6.79E-05	1.46E-03		1.53E-03	0.00
Pathway Total	1.22E+02	3.50E+03	5.66E-07	3.62E+03	
Fraction of Total	3.37E-02	9.66E-01	1.56E-10		

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Barium	1.45E-03	8.93E-02	2.96E-06	9.08E-02	17.27
Beryllium	1.63E-04	7.01E-02	2.37E-07	7.03E-02	13.37
Chromium	1.53E-03	3.30E-01	6.69E-07	3.31E-01	63.02
Zinc	1.84E-04	3.96E-03		4.14E-03	0.79
Acenaphthene	2.69E-06	7.46E-05	1.55E-06	7.89E-05	0.02
Acenaphthylene					
Anthracene	9.66E-07	1.09E-05	1.56E-07	1.21E-05	0.00

Table 1.62. Systemic toxicity for the current industrial worker

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenz(a,h)anthracene					
Dibenzofuran	1.50E-05	2.59E-04	4.68E-06	2.78E-04	0.05
Fluoranthene	1.04E-05	2.89E-04	4.29E-07	3.00E-04	0.06
Fluorene	2.68E-06	4.61E-05	6.61E-07	4.94E-05	0.01
Indeno(1,2,3-cd)pyrene					
PCB-1016	1.66E-03	9.53E-03	4.41E-04	1.16E-02	2.21
PCB-1254	2.35E-03	1.35E-02	5.57E-04	1.64E-02	3.11
PCB-1260					
Phenanthrene					
Pyrene	1.59E-05	4.42E-04	5.28E-07	4.58E-04	0.09
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total	7.39E-03	5.17E-01	1.01E-03	5.26E-01	
Fraction of Total	1.41E-02	9.84E-01	1.92E-03		

Table 1.62. Systemic toxicity for the current industrial worker without lead

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Chromium	2.00E-03	4.29E-01	8.70E-07	4.31E-01	99.89
Anthracene	1.89E-07	2.14E-06	3.05E-08	2.36E-06	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Chrysene					
Di-n-butylphthalate	3.77E-07	3.24E-06	5.87E-09	3.62E-06	0.00
Di-n-octylphthalate	2.94E-06	2.80E-05	6.18E-09	3.10E-05	0.01
Dibenz(a,h)anthracene					
Fluoranthene	3.34E-06	9.26E-05	1.38E-07	9.61E-05	0.02
Indeno(1,2,3-cd)pyrene					
Pyrene	4.81E-06	1.33E-04	1.59E-07	1.38E-04	0.03
bis(2-Ethylhexyl)phthalate	4.16E-06	1.88E-04	2.44E-09	1.92E-04	0.04
Pathway Total	2.01E-03	4.30E-01	1.21E-06	4.32E-01	
Fraction of Total	4.66E-03	9.95E-01	2.81E-06		

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Beryllium	3.84E-04	1.65E-01	5.58E-07	1.66E-01	3.15
Chromium	1.45E-02	3.11E+00	6.31E-06	3.12E+00	59.54
Vanadium	4.54E-03	1.95E+00		1.96E+00	37.31
Pathway Total	1.94E-02	5.23E+00	6.87E-06	5.25E+00	
Fraction of Total	3.70E-03	9.96E-01	1.31E-06		

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Chromium	8.92E-04	1.92E-01	3.89E-07	1.93E-01	99.21
Zinc	6.79E-05	1.46E-03		1.53E-03	0.79
Pathway Total	9.60E-04	1.93E-01	3.89E-07	1.94E-01	
Fraction of Total	4.94E-03	9.95E-01	2.00E-06		

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Barium	1.45E-03	8.93E-02	2.96E-06	9.08E-02	17.27
Beryllium	1.63E-04	7.01E-02	2.37E-07	7.03E-02	13.37
Chromium	1.53E-03	3.30E-01	6.69E-07	3.31E-01	63.02
Zinc	1.84E-04	3.96E-03		4.14E-03	0.79
Acenaphthene	2.69E-06	7.46E-05	1.55E-06	7.89E-05	0.02
Acenaphthylene					
Anthracene	9.66E-07	1.09E-05	1.56E-07	1.21E-05	0.00
Benz(a)anthracene					

Table 1.62. Systemic toxicity for the current industrial worker without lead

----- LOCATION-SWMU 99A MEDIA-Surface Soil -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenz(a,h)anthracene					
Dibenzofuran	1.50E-05	2.59E-04	4.68E-06	2.78E-04	0.05
Fluoranthene	1.04E-05	2.89E-04	4.29E-07	3.00E-04	0.06
Fluorene	2.68E-06	4.61E-05	6.61E-07	4.94E-05	0.01
Indeno(1,2,3-cd)pyrene					
PCB-1016	1.66E-03	9.53E-03	4.41E-04	1.16E-02	2.21
PCB-1254	2.35E-03	1.35E-02	5.57E-04	1.64E-02	3.11
PCB-1260					
Phenanthrene					
Pyrene	1.59E-05	4.42E-04	5.28E-07	4.58E-04	0.09
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total	7.39E-03	5.17E-01	1.01E-03	5.26E-01	
Fraction of Total	1.41E-02	9.84E-01	1.92E-03		

Table 1.63 Excess lifetime cancer risks for the current industrial worker

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Chromium			3.7E-10		3.7E-10	0.00
Anthracene						
Benz (a) anthracene	2.3E-08	6.4E-07	1.3E-10		6.6E-07	4.29
Benzo (a) pyrene	3.2E-07	8.8E-06	6.9E-10		9.2E-06	59.55
Benzo (b) fluoranthene	6.5E-09	1.8E-07	7.5E-11		1.9E-07	1.22
Benzo (ghi) perylene						
Chrysene	2.2E-10	6.0E-09	4.2E-12		6.2E-09	0.04
Di-n-butylphthalate						
Di-n-octylphthalate						
Dibenz (a, h) anthracene	1.7E-07	4.6E-06	8.5E-11		4.8E-06	30.97
Fluoranthene						
Indeno (1,2,3-cd) pyrene	2.0E-08	5.7E-07	1.9E-11		5.9E-07	3.81
Pyrene						
bis (2-Ethylhexyl) phthalate	4.2E-10	1.9E-08			1.9E-08	0.12
Pathway Total	5.4E-07	1.5E-05	1.4E-09		1.5E-05	
Fraction of Total	3.5E-02	9.7E-01	8.9E-05			

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Beryllium	1.2E-06	5.1E-04	9.6E-12		5.1E-04	100.0
Chromium			2.7E-09		2.7E-09	0.00
Vanadium						
Pathway Total	1.2E-06	5.1E-04	2.7E-09		5.1E-04	
Fraction of Total	2.3E-03	1.0E+00	5.3E-06			

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Chromium			1.7E-10		1.7E-10	100.0
Lead						
Zinc						
Pathway Total			1.7E-10		1.7E-10	
Fraction of Total			1.0E+00			

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Barium						
Beryllium	5.0E-07	2.2E-04	4.1E-12		2.2E-04	69.57
Chromium			2.9E-10		2.9E-10	0.00
Zinc						
Acenaphthene						
Acenaphthylene						
Anthracene						

Table 1.63 Excess lifetime cancer risks for the current industrial worker

LOCATION=SWMU 99A MEDIA=Surface Soil
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Benz(a)anthracene	1.0E-07	2.8E-06	5.7E-10		2.9E-06	0.94
Benzo(a)pyrene	6.2E-07	1.7E-05	1.4E-09		1.8E-05	5.78
Benzo(b)fluoranthene	1.5E-07	4.1E-06	1.7E-09		4.2E-06	1.36
Benzo(ghi)perylene						
Benzo(k)fluoranthene	7.3E-09	2.0E-07	9.9E-12		2.1E-07	0.07
Chrysene	1.7E-09	4.6E-08	3.3E-11		4.8E-08	0.02
Dibenz(a,h)anthracene	3.2E-07	8.9E-06	1.6E-10		9.2E-06	2.96
Dibenzofuran						
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	1.0E-07	2.8E-06	9.5E-11		2.9E-06	0.95
PCB-1016	8.3E-08	4.8E-07	2.2E-08		5.8E-07	0.19
PCB-1254	3.4E-08	1.9E-07	8.0E-09		2.3E-07	0.08
PCB-1260	6.5E-08	3.7E-07	1.8E-08		4.6E-07	0.15
Phenanthrene						
Pyrene						
Cesium-137	1.0E-08		7.9E-14	1.0E-05	1.0E-05	3.25
Neptunium-237	1.2E-06		1.7E-09	2.7E-05	2.8E-05	9.09
Technetium-99	2.0E-07		5.2E-12	1.3E-09	2.0E-07	0.07
Thorium-234	1.3E-07		1.6E-12	3.4E-07	4.7E-07	0.15
Uranium-234	2.3E-07		8.9E-10	1.6E-09	2.3E-07	0.07
Uranium-238	1.0E-06		2.5E-09	1.6E-05	1.7E-05	5.32
Pathway Total	4.8E-06	2.5E-04	5.8E-08	5.3E-05	3.1E-04	
Fraction of Total	1.5E-02	8.1E-01	1.9E-04	1.7E-01		

Table 1.64. Systemic toxicity for the future industrial worker

----- LOCATION=AOC 204 MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
1,1-Dichloroethane	4.89E-01	1.58E-02		1.87E-01	6.92E-01	2.08
1,1-Dichloroethene	4.35E-02	1.40E-03		2.38E-02	6.86E-02	0.21
PCB-1254	1.22E+01	1.71E+01			2.93E+01	87.99
PCB-1260						
Polychlorinated biphenyl						
Tetrachloroethene	6.27E-01	8.42E-01		2.00E-02	1.49E+00	4.47
Trichloroethene	8.99E-01	3.48E-01		4.91E-01	1.74E+00	5.22
Vinyl Chloride						
cis-1,2-Dichloroethene	5.87E-03	2.13E-04		3.21E-03	9.29E-03	0.03
Pathway Total	1.43E+01	1.83E+01		7.25E-01	3.33E+01	
Fraction of Total	4.29E-01	5.49E-01		2.18E-02		

----- LOCATION=SWMU 193A MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Iron	4.31E+00	1.04E-01			4.42E+00	94.14
Tetraoxo-sulfata(1-)						
Trichloroethene	6.07E-03	2.35E-03		3.32E-03	1.17E-02	0.25
cis-1,2-Dichloroethene	1.66E-01	6.04E-03		9.08E-02	2.63E-01	5.61
Technetium-99						
Uranium-238						
Pathway Total	4.48E+00	1.13E-01		9.42E-02	4.69E+00	
Fraction of Total	9.56E-01	2.40E-02		2.01E-02		

----- LOCATION=SWMU 193A MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Ammonia						
Fluoride	6.85E-02	2.56E-04			6.87E-02	4.20
Iron	9.86E-01	2.39E-02			1.01E+00	61.65
Silica						
Tetraoxo-sulfate(1-)						
Zinc	3.22E-03	5.84E-05			3.28E-03	0.20
1,1-Dichloroethene	2.17E-04	7.02E-06		1.19E-04	3.43E-04	0.02
Pentachlorophenol	2.76E-03	6.52E-03			9.28E-03	0.57
Trichloroethene	2.76E-01	1.07E-01		1.51E-01	5.33E-01	32.53
bis(2-Ethylhexyl)phthalate	6.31E-03	2.82E-03			9.14E-03	0.56
cis-1,2-Dichloroethene	2.84E-03	1.03E-04		1.55E-03	4.50E-03	0.27
Technetium-99						
Pathway Total	1.35E+00	1.40E-01		1.52E-01	1.64E+00	
Fraction of Total	8.21E-01	8.57E-02		9.29E-02		

Table 1.64. Systemic toxicity for the future industrial worker

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Chromium	2.00E-03	4.29E-01	8.70E-07		4.31E-01	99.89
Anthracene	1.89E-07	2.14E-06	3.05E-08		2.36E-06	0.00
Benz (a)anthracene						
Benzo (a)pyrene						
Benzo (b)fluoranthene						
Benzo (ghi)perylene						
Chrysene						
Di-n-butylphthalate	3.77E-07	3.24E-06	5.87E-09		3.62E-06	0.00
Di-n-octylphthalate	2.94E-06	2.80E-05	6.18E-09		3.10E-05	0.01
Dibenz (a, h)anthracene						
Fluoranthene	3.34E-06	9.26E-05	1.38E-07		9.61E-05	0.02
Indeno (1, 2, 3-cd)pyrene						
Pyrene	4.81E-06	1.33E-04	1.59E-07		1.38E-04	0.03
bis (2-Ethylhexyl)phthalate	4.16E-06	1.88E-04	2.44E-09		1.92E-04	0.04
Pathway Total	2.01E-03	4.30E-01	1.21E-06		4.32E-01	
Fraction of Total	4.66E-03	9.95E-01	2.81E-06			

----- LOCATION=SWMU 193B MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Trichloroethene	2.12E-02	8.21E-03		1.16E-02	4.10E-02	53.51
cis-1,2-Dichloroethene	2.25E-02	8.17E-04		1.23E-02	3.56E-02	46.49
Pathway Total	4.37E-02	9.03E-03		2.39E-02	7.66E-02	
Fraction of Total	5.71E-01	1.18E-01		3.12E-01		

----- LOCATION=SWMU 193B MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
1,1-Dichloroethene	1.76E-03	5.69E-05		9.61E-04	2.78E-03	0.16
Acetone	3.23E-03	8.04E-06		1.76E-03	5.00E-03	0.29
Carbon Tetrachloride	7.69E-02	9.45E-03		5.15E-02	1.38E-01	7.90
Di-n-butylphthalate	9.94E-04	4.15E-04			1.41E-03	0.08
Trichloroethene	8.15E-01	3.16E-01		4.45E-01	1.58E+00	90.43
bis (2-Ethylhexyl)phthalate	4.93E-03	2.21E-03			7.14E-03	0.41
cis-1,2-Dichloroethene	8.04E-03	2.92E-04		4.39E-03	1.27E-02	0.73
Technetium-99						
Pathway Total	9.11E-01	3.28E-01		5.04E-01	1.74E+00	
Fraction of Total	5.23E-01	1.88E-01		2.89E-01		

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Beryllium	3.84E-04	1.65E-01	5.58E-07		1.66E-01	3.1
Chromium	1.45E-02	3.11E+00	6.31E-06		3.12E+00	59.5
Vanadium	4.54E-03	1.95E+00			1.96E+00	37.31

Table 1.64. Systemic toxicity for the future industrial worker

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Pathway Total	1.94E-02	5.23E+00	6.87E-06		5.25E+00	
Fraction of Total	3.70E-03	9.96E-01	1.31E-06			

----- LOCATION=SWMU 193C MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Aluminum	3.74E-01	1.36E-02			3.87E-01	0.00
Antimony	2.80E+00	5.08E-01			3.30E+00	0.01
Arsenic	3.98E-01	3.53E-03			4.02E-01	0.00
Barium	3.42E-02	1.77E-03			3.59E-02	0.00
Beryllium	5.43E-02	1.97E-02			7.40E-02	0.00
Cadmium	6.92E-01	2.51E-01			9.43E-01	0.00
Chromium	4.67E-01	8.48E-02			5.52E-01	0.00
Cobalt	8.67E-03	3.93E-05			8.71E-03	0.00
Iron	1.92E+00	4.65E-02			1.97E+00	0.01
Lead	2.45E+04	5.92E+02			2.51E+04	99.96
Manganese	2.90E-01	2.63E-02			3.16E-01	0.00
Mercury	6.52E-03	3.38E-04			6.86E-03	0.00
Molybdenum	9.03E-02	8.63E-04			9.12E-02	0.00
Nickel	2.63E-02	3.53E-04			2.66E-02	0.00
Silica						
Silver	6.50E-02	1.31E-03			6.63E-02	0.00
Tetraoxo-sulfate(1-)						
Thallium						
Uranium	2.09E-02	8.92E-05			2.10E-02	0.00
Vanadium	1.17E+00	4.24E-01			1.59E+00	0.01
Zinc	6.63E-03	1.20E-04			6.75E-03	0.00
1,1,2-Trichloroethane	6.12E-03	2.30E-04		3.34E-03	9.69E-03	0.00
1,1-Dichloroethene	2.72E-03	8.78E-05		1.48E-03	4.29E-03	0.00
1,2-Dichloroethane				4.67E-03	4.67E-03	0.00
Benzene				7.81E-03	7.81E-03	0.00
Bromodichloromethane	1.22E-03	2.63E-05		6.68E-04	1.92E-03	0.00
Carbon Tetrachloride	3.49E-02	4.29E-03		2.34E-02	6.26E-02	0.00
Chloroform	2.45E-03	3.95E-04		1.34E-03	4.18E-03	0.00
Ethylbenzene	2.45E-04	6.77E-05		4.68E-05	3.59E-04	0.00
Polychlorinated biphenyl						
Tetrachloroethene	2.45E-03	3.29E-03		7.79E-05	5.81E-03	0.00
Trichloroethene	2.01E-03	7.79E-04		1.10E-03	3.89E-03	0.00
Vinyl Chloride						
Xylene	2.67E-05	9.96E-06		1.46E-05	5.12E-05	0.00
cis-1,2-Dichloroethene	4.89E-03	1.78E-04		2.67E-03	7.74E-03	0.00
trans-1,2-Dichloroethene	2.45E-03	9.51E-06		1.34E-03	3.79E-03	0.00
Radon-222						
Pathway Total	2.45E+04	5.93E+02		4.80E-02	2.51E+04	
Fraction of Total	9.76E-01	2.37E-02		1.91E-06		

Table 1.64. Systemic toxicity for the future industrial worker

----- LOCATION=SWMU 193C MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
1,2-Dichloroethene	6.11E-01	2.97E-03		3.34E-01	9.48E-01	64.98
Trichloroethene	2.64E-01	1.02E-01		1.44E-01	5.11E-01	35.02
Pathway Total	8.75E-01	1.05E-01		4.78E-01	1.46E+00	
Fraction of Total	6.00E-01	7.22E-02		3.28E-01		

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Chromium	8.92E-04	1.92E-01	3.89E-07		1.93E-01	0.01
Lead	1.22E+02	3.50E+03	1.77E-07		3.62E+03	99.99
Zinc	6.79E-05	1.46E-03			1.53E-03	0.00
Pathway Total	1.22E+02	3.50E+03	5.66E-07		3.62E+03	
Fraction of Total	3.37E-02	9.66E-01	1.56E-10			

----- LOCATION=SWMU 99A MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
1,1-Dichloroethene	1.13E-02	3.66E-04		6.18E-03	1.79E-02	1.09
Carbon Tetrachloride	3.91E-02	4.81E-03		2.62E-02	7.02E-02	4.28
Trichloroethene	7.10E-01	2.75E-01		3.88E-01	1.37E+00	83.74
cis-1,2-Dichloroethene	1.13E-01	4.10E-03		6.17E-02	1.79E-01	10.90
Pathway Total	8.74E-01	2.84E-01		4.82E-01	1.64E+00	
Fraction of Total	5.33E-01	1.73E-01		2.94E-01		

----- LOCATION=SWMU 99A MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Aluminum	1.06E-01	3.85E-03			1.10E-01	0.00
Arsenic	1.80E-01	1.59E-03			1.81E-01	0.00
Barium	4.80E-02	2.49E-03			5.05E-02	0.00
Beryllium	5.07E-02	1.84E-02			6.91E-02	0.00
Chromium	4.14E-01	7.51E-02			4.89E-01	0.01
Cobalt	1.54E-02	6.99E-05			1.55E-02	0.00
Copper	1.95E-02	2.36E-04			1.98E-02	0.00
Iron	7.56E-01	1.83E-02			7.74E-01	0.01
Lead	7.95E+03	1.92E+02			8.14E+03	99.94
Lithium	3.64E-02	1.65E-04			3.65E-02	0.00
Manganese	3.54E-01	3.21E-02			3.86E-01	0.00
Mercury	1.41E-02	7.30E-04			1.48E-02	0.00
Nickel	7.51E-02	1.01E-03			7.61E-02	0.00
Silica						
Sulfate						
Tetraoxo-sulfate(1-)						
Vanadium	5.13E-01	1.86E-01			7.00E-01	0.01
Zinc	7.34E-03	1.33E-04			7.48E-03	0.00

Table 1.64. Systemic toxicity for the future industrial worker

----- LOCATION=SWMU 99A MEDIA=RGA Groundwater -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
1,1-Dichloroethene	1.94E-02	6.28E-04		1.06E-02	3.07E-02	0.00
Trichloroethene	1.10E+00	4.27E-01		6.02E-01	2.13E+00	0.03
bis(2-Ethylhexyl)phthalate	4.68E-03	2.09E-03			6.77E-03	0.00
cis-1,2-Dichloroethene	6.89E-03	2.50E-04		3.76E-03	1.09E-02	0.00
Radon-222						
Technetium-99						
Pathway Total	7.96E+03	1.93E+02		6.16E-01	8.15E+03	
Fraction of Total	9.76E-01	2.37E-02		7.56E-05		

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Barium	1.45E-03	8.93E-02	2.96E-06		9.08E-02	17.27
Beryllium	1.63E-04	7.01E-02	2.37E-07		7.03E-02	13.37
Chromium	1.53E-03	3.30E-01	6.69E-07		3.31E-01	63.02
Zinc	1.84E-04	3.96E-03			4.14E-03	0.79
Acenaphthene	2.69E-06	7.46E-05	1.55E-06		7.89E-05	0.02
Acenaphthylene						
Anthracene	9.66E-07	1.09E-05	1.56E-07		1.21E-05	0.00
Benz (a) anthracene						
Benzo (a) pyrene						
Benzo (b) fluoranthene						
Benzo (ghi) perylene						
Benzo (k) fluoranthene						
Chrysene						
Dibenz (a, h) anthracene						
Dibenzofuran	1.50E-05	2.59E-04	4.68E-06		2.78E-04	0.05
Fluoranthene	1.04E-05	2.89E-04	4.29E-07		3.00E-04	0.06
Fluorene	2.68E-06	4.61E-05	6.61E-07		4.94E-05	0.01
Indeno (1, 2, 3-cd) pyrene						
PCB-1016	1.66E-03	9.53E-03	4.41E-04		1.16E-02	2.21
PCB-1254	2.35E-03	1.35E-02	5.57E-04		1.64E-02	3.11
PCB-1260						
Phenanthrene						
Pyrene	1.59E-05	4.42E-04	5.28E-07		4.58E-04	0.09
Cesium-137						
Neptunium-237						
Technetium-99						
Thorium-234						
Uranium-234						
Uranium-238						
Pathway Total	7.39E-03	5.17E-01	1.01E-03		5.26E-01	
Fraction of Total	1.41E-02	9.84E-01	1.92E-03			

----- LOCATION=SWMU 99B MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Barium	6.86E-02	3.56E-03			7.21E-02	1.03
Chromium	2.02E-01	3.66E-02			2.39E-01	3.41

Table 1.64. Systemic toxicity for the future industrial worker

----- LOCATION=SWMU 99B MEDIA-RGA Groundwater -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Iron	7.31E-02	1.77E-03			7.49E-02	1.07
Manganese	5.52E-02	5.01E-03			6.02E-02	0.86
Silica						
Sulfate						
Tetraoxo-sulfate(1-)						
Zinc	1.90E-03	3.45E-05			1.94E-03	0.03
Trichloroethene	3.39E+00	1.31E+00		1.85E+00	6.55E+00	93.61
Radon-222						
Pathway Total	3.79E+00	1.36E+00		1.85E+00	7.00E+00	
Fraction of Total	5.41E-01	1.94E-01		2.64E-01		

Table 1.64. Systemic toxicity for the future industrial worker without lead

----- LOCATION=AOC 204 MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
1,1-Dichloroethane	4.89E-01	1.58E-02		1.87E-01	6.92E-01	2.08
1,1-Dichloroethene	4.35E-02	1.40E-03		2.38E-02	6.86E-02	0.21
PCB-1254	1.22E+01	1.71E+01			2.93E+01	87.99
PCB-1260						
Polychlorinated biphenyl						
Tetrachloroethene	6.27E-01	8.42E-01		2.00E-02	1.49E+00	4.47
Trichloroethene	8.99E-01	3.48E-01		4.91E-01	1.74E+00	5.22
Vinyl Chloride						
cis-1,2-Dichloroethene	5.87E-03	2.13E-04		3.21E-03	9.29E-03	0.03
Pathway Total	1.43E+01	1.83E+01		7.25E-01	3.33E+01	
Fraction of Total	4.29E-01	5.49E-01		2.18E-02		

----- LOCATION=SWMU 193A MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Iron	4.31E+00	1.04E-01			4.42E+00	94.14
Tetraoxo-sulfate(1-)						
Trichloroethene	6.07E-03	2.35E-03		3.32E-03	1.17E-02	0.25
cis-1,2-Dichloroethene	1.66E-01	6.04E-03		9.08E-02	2.63E-01	5.61
Technetium-99						
Uranium-238						
Pathway Total	4.48E+00	1.13E-01		9.42E-02	4.69E+00	
Fraction of Total	9.56E-01	2.40E-02		2.01E-02		

----- LOCATION=SWMU 193A MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Ammonia						
Fluoride	6.85E-02	2.56E-04			6.87E-02	4.20
Iron	9.86E-01	2.39E-02			1.01E+00	61.65
Silica						
Tetraoxo-sulfate(1-)						
Zinc	3.22E-03	5.84E-05			3.28E-03	0.20
1,1-Dichloroethene	2.17E-04	7.02E-06		1.19E-04	3.43E-04	0.02
Pentachlorophenol	2.76E-03	6.52E-03			9.28E-03	0.57
Trichloroethene	2.76E-01	1.07E-01		1.51E-01	5.33E-01	32.53
bis(2-Ethylhexyl)phthalate	6.31E-03	2.82E-03			9.14E-03	0.56
cis-1,2-Dichloroethene	2.84E-03	1.03E-04		1.55E-03	4.50E-03	0.27
Technetium-99						
Pathway Total	1.35E+00	1.40E-01		1.52E-01	1.64E+00	
Fraction of Total	8.21E-01	8.57E-02		9.29E-02		

Table 1.64. Systemic toxicity for the future industrial worker without lead

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Chromium	2.00E-03	4.29E-01	8.70E-07		4.31E-01	99.89
Anthracene	1.89E-07	2.14E-06	3.05E-08		2.36E-06	0.00
Benz(a)anthracene						
Benzo(a)pyrene						
Benzo(b)fluoranthene						
Benzo(ghi)perylene						
Chrysene						
Di-n-butylphthalate	3.77E-07	3.24E-06	5.87E-09		3.62E-06	0.00
Di-n-octylphthalate	2.94E-06	2.80E-05	6.18E-09		3.10E-05	0.01
Dibenz(a,h)anthracene						
Fluoranthene	3.34E-06	9.26E-05	1.38E-07		9.61E-05	0.02
Indeno(1,2,3-cd)pyrene						
Pyrene	4.81E-06	1.33E-04	1.59E-07		1.38E-04	0.03
bis(2-Ethylhexyl)phthalate	4.16E-06	1.88E-04	2.44E-09		1.92E-04	0.04
Pathway Total	2.01E-03	4.30E-01	1.21E-06		4.32E-01	
Fraction of Total	4.66E-03	9.95E-01	2.81E-06			

----- LOCATION=SWMU 193B MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Trichloroethene	2.12E-02	8.21E-03		1.16E-02	4.10E-02	53.51
cis-1,2-Dichloroethene	2.25E-02	8.17E-04		1.23E-02	3.56E-02	46.49
Pathway Total	4.37E-02	9.03E-03		2.39E-02	7.66E-02	
Fraction of Total	5.71E-01	1.18E-01		3.12E-01		

----- LOCATION=SWMU 193B MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
1,1-Dichloroethene	1.76E-03	5.69E-05		9.61E-04	2.78E-03	0.16
Acetone	3.23E-03	8.04E-06		1.76E-03	5.00E-03	0.29
Carbon Tetrachloride	7.69E-02	9.45E-03		5.15E-02	1.38E-01	7.90
Di-n-butylphthalate	9.94E-04	4.15E-04			1.41E-03	0.08
Trichloroethene	8.15E-01	3.16E-01		4.45E-01	1.58E+00	90.43
bis(2-Ethylhexyl)phthalate	4.93E-03	2.21E-03			7.14E-03	0.41
cis-1,2-Dichloroethene	8.04E-03	2.92E-04		4.39E-03	1.27E-02	0.73
Technetium-99						
Pathway Total	9.11E-01	3.28E-01		5.04E-01	1.74E+00	
Fraction of Total	5.23E-01	1.88E-01		2.89E-01		

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Beryllium	3.84E-04	1.65E-01	5.58E-07		1.66E-01	3.1
Chromium	1.45E-02	3.11E+00	6.31E-06		3.12E+00	59.5
Vanadium	4.54E-03	1.95E+00			1.96E+00	37.31

Table 1.64. Systemic toxicity for the future industrial worker without lead

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Pathway Total	1.94E-02	5.23E+00	6.87E-06		5.25E+00	
Fraction of Total	3.70E-03	9.96E-01	1.31E-06			

----- LOCATION=SWMU 193C MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Aluminum	3.74E-01	1.36E-02			3.87E-01	3.91
Antimony	2.80E+00	5.08E-01			3.30E+00	33.32
Arsenic	3.98E-01	3.53E-03			4.02E-01	4.05
Barium	3.42E-02	1.77E-03			3.59E-02	0.36
Beryllium	5.43E-02	1.97E-02			7.40E-02	0.75
Cadmium	6.92E-01	2.51E-01			9.43E-01	9.51
Chromium	4.67E-01	8.48E-02			5.52E-01	5.57
Cobalt	8.67E-03	3.93E-05			8.71E-03	0.09
Iron	1.92E+00	4.65E-02			1.97E+00	19.83
Manganese	2.90E-01	2.63E-02			3.16E-01	3.19
Mercury	6.52E-03	3.38E-04			6.86E-03	0.07
Molybdenum	9.03E-02	8.63E-04			9.12E-02	0.92
Nickel	2.63E-02	3.53E-04			2.66E-02	0.27
Silica						
Silver	6.50E-02	1.31E-03			6.63E-02	0.67
Tetraoxo-sulfate (1-)						
Thallium						
Uranium	2.09E-02	8.92E-05			2.10E-02	0.21
Vanadium	1.17E+00	4.24E-01			1.59E+00	16.06
Zinc	6.63E-03	1.20E-04			6.75E-03	0.07
1,1,2-Trichloroethane	6.12E-03	2.30E-04		3.34E-03	9.69E-03	0.10
1,1-Dichloroethene	2.72E-03	8.78E-05		1.48E-03	4.29E-03	0.04
1,2-Dichloroethane				4.67E-03	4.67E-03	0.05
Benzene				7.81E-03	7.81E-03	0.08
Bromodichloromethane	1.22E-03	2.63E-05		6.68E-04	1.92E-03	0.02
Carbon Tetrachloride	3.49E-02	4.29E-03		2.34E-02	6.26E-02	0.63
Chloroform	2.45E-03	3.95E-04		1.34E-03	4.18E-03	0.04
Ethylbenzene	2.45E-04	6.77E-05		4.68E-05	3.59E-04	0.00
Polychlorinated biphenyl						
Tetrachloroethene	2.45E-03	3.29E-03		7.79E-05	5.81E-03	0.06
Trichloroethene	2.01E-03	7.79E-04		1.10E-03	3.89E-03	0.04
Vinyl Chloride						
Xylene	2.67E-05	9.96E-06		1.46E-05	5.12E-05	0.00
cis-1,2-Dichloroethene	4.89E-03	1.78E-04		2.67E-03	7.74E-03	0.08
trans-1,2-Dichloroethene	2.45E-03	9.51E-06		1.34E-03	3.79E-03	0.04
Radon-222						
Pathway Total	8.48E+00	1.39E+00		4.80E-02	9.92E+00	
Fraction of Total	8.55E-01	1.40E-01		4.84E-03		

----- LOCATION=SWMU 193C MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
1,2-Dichloroethene	6.11E-01	2.97E-03		3.34E-01	9.48E-01	64.98

Table 1.64. Systemic toxicity for the future industrial worker without lead

----- LOCATION=SWMU 193C MEDIA=RGa Groundwater -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Trichloroethene	2.64E-01	1.02E-01		1.44E-01	5.11E-01	35.02
Pathway Total	8.75E-01	1.05E-01		4.78E-01	1.46E+00	
Fraction of Total	6.00E-01	7.22E-02		3.28E-01		

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Chromium	8.92E-04	1.92E-01	3.89E-07		1.93E-01	99.21
Zinc	6.79E-05	1.46E-03			1.53E-03	0.79
Pathway Total	9.60E-04	1.93E-01	3.89E-07		1.94E-01	
Fraction of Total	4.94E-03	9.95E-01	2.00E-06			

----- LOCATION=SWMU 99A MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
1,1-Dichloroethene	1.13E-02	3.66E-04		6.18E-03	1.79E-02	1.09
Carbon Tetrachloride	3.91E-02	4.81E-03		2.62E-02	7.02E-02	4.28
Trichloroethene	7.10E-01	2.75E-01		3.88E-01	1.37E+00	83.74
cis-1,2-Dichloroethene	1.13E-01	4.10E-03		6.17E-02	1.79E-01	10.90
Pathway Total	8.74E-01	2.84E-01		4.82E-01	1.64E+00	
Fraction of Total	5.33E-01	1.73E-01		2.94E-01		

----- LOCATION=SWMU 99A MEDIA=RGa Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Aluminum	1.06E-01	3.85E-03			1.10E-01	2.15
Arsenic	1.80E-01	1.59E-03			1.81E-01	3.55
Barium	4.80E-02	2.49E-03			5.05E-02	0.99
Beryllium	5.07E-02	1.84E-02			6.91E-02	1.35
Chromium	4.14E-01	7.51E-02			4.89E-01	9.57
Cobalt	1.54E-02	6.99E-05			1.55E-02	0.30
Copper	1.95E-02	2.36E-04			1.98E-02	0.39
Iron	7.56E-01	1.83E-02			7.74E-01	15.16
Lithium	3.64E-02	1.65E-04			3.65E-02	0.72
Manganese	3.54E-01	3.21E-02			3.86E-01	7.55
Mercury	1.41E-02	7.30E-04			1.48E-02	0.29
Nickel	7.51E-02	1.01E-03			7.61E-02	1.49
Silica						
Sulfate						
Tetraoxo-sulfate(1-)						
Vanadium	5.13E-01	1.86E-01			7.00E-01	13.7
Zinc	7.34E-03	1.33E-04			7.48E-03	0.
1,1-Dichloroethene	1.94E-02	6.28E-04		1.06E-02	3.07E-02	0.6
Trichloroethene	1.10E+00	4.27E-01		6.02E-01	2.13E+00	41.71

Table 1.64. Systemic toxicity for the future industrial worker without lead

----- LOCATION=SWMU 99A MEDIA=RGA Groundwater -----						
(continued)						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
bis (2-Ethylhexyl) phthalate	4.68E-03	2.09E-03			6.77E-03	0.13
cis-1,2-Dichloroethene	6.89E-03	2.50E-04		3.76E-03	1.09E-02	0.21
Radon-222						
Technetium-99						
Pathway Total	3.72E+00	7.70E-01		6.16E-01	5.11E+00	
Fraction of Total	7.29E-01	1.51E-01		1.21E-01		
----- LOCATION=SWMU 99A MEDIA=Surface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Barium	1.45E-03	8.93E-02	2.96E-06		9.08E-02	17.27
Beryllium	1.63E-04	7.01E-02	2.37E-07		7.03E-02	13.37
Chromium	1.53E-03	3.30E-01	6.69E-07		3.31E-01	63.02
Zinc	1.84E-04	3.96E-03			4.14E-03	0.79
Acenaphthene	2.69E-06	7.46E-05	1.55E-06		7.89E-05	0.02
Acenaphthylene						
Anthracene	9.66E-07	1.09E-05	1.56E-07		1.21E-05	0.00
Benz (a) anthracene						
Benzo (a) pyrene						
Benzo (b) fluoranthene						
Benzo (ghi) perylene						
Benzo (k) fluoranthene						
Chrysene						
Dibenz (a, h) anthracene						
Dibenzofuran	1.50E-05	2.59E-04	4.68E-06		2.78E-04	0.05
Fluoranthene	1.04E-05	2.89E-04	4.29E-07		3.00E-04	0.06
Fluorene	2.68E-06	4.61E-05	6.61E-07		4.94E-05	0.01
Indeno (1, 2, 3-cd) pyrene						
PCB-1016	1.66E-03	9.53E-03	4.41E-04		1.16E-02	2.21
PCB-1254	2.35E-03	1.35E-02	5.57E-04		1.64E-02	3.11
PCB-1260						
Phenanthrene						
Pyrene	1.59E-05	4.42E-04	5.28E-07		4.58E-04	0.09
Cesium-137						
Neptunium-237						
Technetium-99						
Thorium-234						
Uranium-234						
Uranium-238						
Pathway Total	7.39E-03	5.17E-01	1.01E-03		5.26E-01	
Fraction of Total	1.41E-02	9.84E-01	1.92E-03			
----- LOCATION=SWMU 99B MEDIA=RGA Groundwater -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Barium	6.86E-02	3.56E-03			7.21E-02	1.03
Chromium	2.02E-01	3.66E-02			2.39E-01	3.41
Iron	7.31E-02	1.77E-03			7.49E-02	1.07
Manganese	5.52E-02	5.01E-03			6.02E-02	0.86

Table 1.64. Systemic toxicity for the future industrial worker without lead

----- LOCATION=SWMU 99B MEDIA=RGA Groundwater -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Chemical Total	% of Total
Silica						
Sulfate						
Tetraoxo-sulfate(1-)						
Zinc	1.90E-03	3.45E-05			1.94E-03	0.03
Trichloroethene	3.39E+00	1.31E+00		1.85E+00	6.55E+00	93.61
Radon-222						
Pathway Total	3.79E+00	1.36E+00		1.85E+00	7.00E+00	
Fraction of Total	5.41E-01	1.94E-01		2.64E-01		

Table 1.65. Systemic toxicity for the future adult resident

----- LOCATION-SWMU 193A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Chromium	5.59E-03	4.89E-01	3.66E-06			1.16E+00	1.65E+00	99.40
Anthracene	5.30E-07	2.44E-06	1.28E-07			1.19E-04	1.22E-04	0.01
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Chrysene								
Di-n-butylphthalate	1.05E-06	3.69E-06	2.47E-08			2.28E-04	2.33E-04	0.01
Di-n-octylphthalate	8.22E-06	3.20E-05	2.60E-08			1.71E-03	1.75E-03	0.10
Dibenz(a,h)anthracene								
Fluoranthene	9.35E-06	1.06E-04	5.78E-07			2.02E-03	2.14E-03	0.13
Indeno(1,2,3-cd)pyrene								
Pyrene	1.35E-05	1.52E-04	6.70E-07			2.91E-03	3.08E-03	0.19
bis(2-Ethylhexyl)phthalate	1.16E-05	2.14E-04	1.02E-08			2.52E-03	2.74E-03	0.16
Pathway Total	5.63E-03	4.90E-01	5.09E-06			1.17E+00	1.66E+00	
Fraction of Total	3.38E-03	2.94E-01				7.03E-01		

----- LOCATION-SWMU 193B MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Trichloroethene	5.94E-02	1.15E-02		1.62E-02	1.76E-01	5.71E-02	3.20E-01	47.39
cis-1,2-Dichloroethene	6.30E-02	1.14E-03		1.72E-02	1.87E-01	8.72E-02	3.55E-01	52.61
Pathway Total	1.22E-01	1.26E-02		3.34E-02	3.63E-01	1.44E-01	6.76E-01	
Fraction of Total	1.81E-01	1.87E-02		4.95E-02	5.37E-01	2.14E-01		

----- LOCATION-SWMU 193B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethene	4.93E-03	7.96E-05		1.35E-03	1.46E-02	7.43E-03	2.84E-02	0.20
Acetone	9.04E-03	1.12E-05		2.47E-03	2.68E-02	1.41E-01	1.80E-01	1.29
Carbon Tetrachloride	2.15E-01	1.32E-02		7.21E-02	7.83E-01	1.67E-01	1.25E+00	8.98
Di-n-butylphthalate	2.78E-03	5.81E-04				1.48E-03	4.84E-03	0.03
Trichloroethene	2.28E+00	4.42E-01		6.23E-01	6.77E+00	2.20E+00	1.23E+01	88.41
bis(2-Ethylhexyl)phthalate	1.38E-02	3.09E-03				7.35E-03	2.42E-02	0.17
cis-1,2-Dichloroethene	2.25E-02	4.09E-04		6.15E-03	6.68E-02	3.12E-02	1.27E-01	0.91
Technetium-99								
Pathway Total	2.55E+00	4.59E-01		7.05E-01	7.66E+00	2.55E+00	1.39E+01	
Fraction of Total	1.83E-01	3.30E-02		5.06E-02	5.50E-01	1.83E-01		

Table 1.65. Systemic toxicity for the future adult resident

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Beryllium	1.08E-03	1.88E-01	2.34E-06			2.25E-01	4.15E-01	2.40
Chromium	4.05E-02	3.54E+00	2.65E-05			8.41E+00	1.20E+01	69.32
Vanadium	1.27E-02	2.23E+00				2.65E+00	4.89E+00	28.28
Pathway Total	5.43E-02	5.96E+00	2.88E-05			1.13E+01	1.73E+01	
Fraction of Total	3.14E-03	3.44E-01				6.52E-01		

----- LOCATION=SWMU 193C MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Aluminum	1.05E+00	1.90E-02				5.42E-01	1.61E+00	0.00
Antimony	7.83E+00	7.11E-01				4.15E+00	1.27E+01	0.01
Arsenic	1.11E+00	4.94E-03				5.91E-01	1.71E+00	0.00
Barium	9.56E-02	2.48E-03				4.98E-02	1.48E-01	0.00
Beryllium	1.52E-01	2.76E-02				7.90E-02	2.59E-01	0.00
Cadmium	1.94E+00	3.52E-01				6.90E-01	2.98E+00	0.00
Chromium	1.31E+00	1.19E-01				6.75E-01	2.10E+00	0.00
Cobalt	2.43E-02	5.51E-05				1.33E-02	3.77E-02	0.00
Iron	5.38E+00	6.50E-02				2.78E+00	8.22E+00	0.01
Lead	6.85E+04	8.29E-02				3.54E+04	1.05E+05	99.96
Manganese	8.11E-01	3.68E-02				1.64E-01	1.01E+00	0.00
Mercury	1.83E-02	4.74E-04				1.72E-02	3.60E-02	0.00
Molybdenum	2.53E-01	1.21E-03				1.59E-01	4.14E-01	0.00
Nickel	7.36E-02	4.95E-04				4.32E-02	1.17E-01	0.00
Silica								
Silver	1.82E-01	1.83E-03				9.39E-02	2.78E-01	0.00
Tetraoxo-sulfate(1-)								
Thallium								
Uranium	5.85E-02	1.25E-04				3.02E-02	8.88E-02	0.00
Vanadium	3.27E+00	5.94E-01				1.70E+00	5.56E+00	0.01
Zinc	1.86E-02	1.68E-04				1.66E-02	3.53E-02	0.00
1,1,2-Trichloroethane	1.71E-02	3.22E-04		4.68E-03	5.08E-02	2.18E-02	9.47E-02	0.00
1,1-Dichloroethane	7.61E-03	1.23E-04		2.08E-03	2.26E-02	1.15E-02	4.39E-02	0.00
1,2-Dichloroethane				6.54E-03	7.10E-02		7.76E-02	0.00
Benzene				1.09E-02	1.19E-01		1.30E-01	0.00
Bromodichloromethane	3.42E-03	3.68E-05		9.35E-04	1.02E-02	4.04E-03	1.86E-02	0.00
Carbon Tetrachloride	9.78E-02	6.01E-03		3.28E-02	3.56E-01	7.60E-02	5.68E-01	0.00
Chloroform	6.85E-03	5.53E-04		1.87E-03	2.03E-02	8.74E-03	3.83E-02	0.00
Ethylbenzene	6.85E-04	9.48E-05		6.55E-05	7.11E-04	4.73E-04	2.03E-03	0.00
Polychlorinated biphenyl								
Tetrachloroethene	6.85E-03	4.60E-03		1.09E-04	1.18E-03	5.87E-03	1.86E-02	0.00
Trichloroethane	5.63E-03	1.09E-03		1.54E-03	1.67E-02	5.41E-03	3.04E-02	0.00
Vinyl Chloride								
Xylene	7.46E-05	1.39E-05		2.04E-05	2.21E-04	4.85E-05	3.79E-04	0.00
cis-1,2-Dichloroethane	1.37E-02	2.49E-04		3.74E-03	4.06E-02	1.90E-02	7.73E-02	0.00
trans-1,2-Dichloroethane	6.85E-03	1.33E-05		1.87E-03	2.03E-02	4.32E-02	7.22E-02	0.00
Radon-222								
Pathway Total	6.85E+04	8.31E+02		6.71E-02	7.29E-01	3.54E+04	1.05E+05	
Fraction of Total	6.54E-01	7.93E-03		6.41E-07	6.96E-06	3.38E-01		

Table 1.65. Systemic toxicity for the future adult resident

----- LOCATION-AOC 204 MEDIA-RGA Groundwater -----								
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethane	1.37E+00	2.21E-02		2.62E-01	2.84E+00	2.07E+00	6.56E+00	6.46
1,1-Dichloroethene	1.22E-01	1.97E-03		3.33E-02	3.61E-01	1.84E-01	7.02E-01	0.69
PCB-1254	3.42E+01	2.39E+01				1.78E+01	7.60E+01	74.71
PCB-1260								
Polychlorinated biphenyl								
Tetrachloroethene	1.76E+00	1.18E+00		2.80E-02	3.04E-01	1.51E+00	4.77E+00	4.69
Trichloroethene	2.52E+00	4.87E-01		6.88E-01	7.47E+00	2.42E+00	1.36E+01	13.36
Vinyl Chloride								
cis-1,2-Dichloroethene	1.64E-02	2.98E-04		4.49E-03	4.87E-02	2.28E-02	9.27E-02	0.09
Pathway Total	4.00E+01	2.56E+01		1.02E+00	1.10E+01	2.40E+01	1.02E+02	
Fraction of Total	3.94E-01	2.52E-01		9.98E-03	1.08E-01	2.36E-01		
----- LOCATION-SWMU 193A MEDIA-McNairy Groundwater -----								
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Iron	1.21E+01	1.46E-01				6.24E+00	1.85E+01	87.16
Tetraoxo-sulfate(1-)								
Trichloroethene	1.70E-02	3.29E-03		4.64E-03	5.04E-02	1.63E-02	9.17E-02	0.43
cis-1,2-Dichloroethene	4.66E-01	8.45E-03		1.27E-01	1.38E+00	6.45E-01	2.63E+00	12.41
Technetium-99								
Uranium-238								
Pathway Total	1.26E+01	1.58E-01		1.32E-01	1.43E+00	6.90E+00	2.12E+01	
Fraction of Total	5.93E-01	7.45E-03		6.23E-03	6.76E-02	3.26E-01		
----- LOCATION-SWMU 193A MEDIA-RGA Groundwater -----								
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Ammonia								
Fluoride	1.92E-01	3.59E-04					1.92E-01	2.21
Iron	2.76E+00	3.34E-02				1.43E+00	4.22E+00	48.55
Silica								
Tetraoxo-sulfate(1-)								
Zinc	9.01E-03	8.18E-05				8.05E-03	1.71E-02	0.20
1,1-Dichloroethene	6.09E-04	9.83E-06		1.66E-04	1.81E-03	9.18E-04	3.51E-03	0.04
Pentachlorophenol	7.73E-03	9.12E-03				4.02E-03	2.09E-02	0.24
Trichloroethene	7.72E-01	1.49E-01		2.11E-01	2.29E+00	7.42E-01	4.16E+00	47.88
bis(2-Ethylhexyl)phthalate	1.77E-02	3.95E-03				9.40E-03	3.10E-02	0.36
cis-1,2-Dichloroethene	7.96E-03	1.44E-04		2.17E-03	2.36E-02	1.10E-02	4.49E-02	0.52
Technetium-99								
Pathway Total	3.77E+00	1.96E-01		2.13E-01	2.31E+00	2.20E+00	8.69E+00	
Fraction of Total	4.33E-01	2.26E-02		2.45E-02	2.66E-01	2.53E-01		

Table 1.65. Systemic toxicity for the future adult resident.

----- LOCATION-SWMU 193C MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,2-Dichloroethene	1.71E+00	4.15E-03		4.67E-01	5.07E+00	1.08E+01	1.80E+01	81.89
Trichloroethene	7.40E-01	1.43E-01		2.02E-01	2.19E+00	7.11E-01	3.99E+00	18.11
Pathway Total	2.45E+00	1.47E-01		6.69E-01	7.27E+00	1.15E+01	2.20E+01	
Fraction of Total	1.11E-01	6.69E-03		3.04E-02	3.30E-01	5.22E-01		

----- LOCATION-SWMU 193C MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Chromium	2.50E-03	2.19E-01	1.63E-06			5.18E-01	7.39E-01	0.00
Lead	3.42E+02	3.99E+03	7.45E-07			7.11E+04	7.54E+04	100.0
Zinc	1.90E-04	1.66E-03				7.94E-02	8.13E-02	0.00
Pathway Total	3.42E+02	3.99E+03	2.38E-06			7.11E+04	7.54E+04	
Fraction of Total	4.53E-03	5.29E-02				9.43E-01		

----- LOCATION-SWMU 99A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethane	3.17E-02	5.12E-04		8.65E-03	9.40E-02	4.78E-02	1.83E-01	1.37
Carbon Tetrachloride	1.10E-01	6.73E-03		3.67E-02	3.98E-01	8.52E-02	6.37E-01	4.78
Trichloroethene	1.99E+00	3.85E-01		5.43E-01	5.90E+00	1.91E+00	1.07E+01	80.47
cis-1,2-Dichloroethane	3.16E-01	5.74E-03		8.63E-02	9.38E-01	4.38E-01	1.78E+00	13.38
Pathway Total	2.45E+00	3.98E-01		6.75E-01	7.33E+00	2.48E+00	1.33E+01	
Fraction of Total	1.84E-01	2.99E-02		5.06E-02	5.50E-01	1.86E-01		

----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Aluminum	2.97E-01	5.39E-03				1.54E-01	4.56E-01	0.00
Arsenic	5.03E-01	2.23E-03				2.67E-01	7.72E-01	0.00
Barium	1.34E-01	3.48E-03				6.99E-02	2.08E-01	0.00
Beryllium	1.42E-01	2.58E-02				7.38E-02	2.42E-01	0.00
Chromium	1.16E+00	1.05E-01				5.98E-01	1.86E+00	0.01
Cobalt	4.31E-02	9.78E-05				2.37E-02	6.69E-02	0.00
Copper	5.46E-02	3.31E-04				3.44E-02	8.94E-02	0.00
Iron	2.12E+00	2.56E-02				1.09E+00	3.24E+00	0.01
Lead	2.23E+04	2.69E+02				1.15E+04	3.41E+04	99.92
Lithium	1.02E-01	2.31E-04				5.35E-02	1.56E-01	0.00
Manganese	9.90E-01	4.49E-02				2.00E-01	1.23E+00	0.00
Mercury	3.94E-02	1.02E-03				3.72E-02	7.77E-02	0.00
Nickel	2.10E-01	1.41E-03				1.24E-01	3.35E-01	0.00
Silica								

Table 1.65. Systemic toxicity for the future adult resident

----- LOCATION=SWMU 99A MEDIA=RGA Groundwater -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Sulfate								
Tetraoxo-sulfate(1-)								
Vanadium	1.44E+00	2.61E-01				7.45E-01	2.44E+00	0.01
Zinc	2.06E-02	1.87E-04				1.84E-02	3.91E-02	0.00
1,1-Dichloroethene	5.44E-02	8.79E-04		1.49E-02	1.61E-01	8.21E-02	3.14E-01	0.00
Trichloroethene	3.09E+00	5.97E-01		8.43E-01	9.15E+00	2.97E+00	1.66E+01	0.05
bis(2-Ethylhexyl)phthalate	1.31E-02	2.93E-03				6.97E-03	2.30E-02	0.00
cis-1,2-Dichloroethene	1.93E-02	3.50E-04		5.27E-03	5.72E-02	2.67E-02	1.09E-01	0.00
Radon-222								
Technetium-99								
Pathway Total	2.23E+04	2.71E+02		8.63E-01	9.37E+00	1.15E+04	3.41E+04	
Fraction of Total	6.54E-01	7.94E-03		2.53E-05	2.75E-04	3.38E-01		

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Barium	4.07E-03	1.02E-01	1.24E-05			8.54E-01	9.60E-01	19.00
Beryllium	4.57E-04	7.99E-02	9.96E-07			9.57E-02	1.75E-01	3.48
Chromium	4.29E-03	3.76E-01	2.81E-06			8.91E-01	1.27E+00	25.15
Zinc	5.16E-04	4.51E-03				2.16E-01	2.21E-01	4.36
Acenaphthene	7.53E-06	8.51E-05	6.52E-06			1.71E-03	1.81E-03	0.04
Acenaphthylene								
Anthracene	2.71E-06	1.25E-05	6.55E-07			6.08E-04	6.24E-04	0.01
Benzo(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Chrysene								
Dibenz(a,h)anthracene								
Dibenzofuran	4.21E-05	2.95E-04	1.96E-05			8.87E-03	9.23E-03	0.18
Fluoranthene	2.92E-05	3.29E-04	1.80E-06			6.31E-03	6.67E-03	0.13
Fluorene	7.50E-06	5.25E-05	2.77E-06			1.69E-03	1.75E-03	0.03
Indeno(1,2,3-cd)pyrene								
PCB-1016	4.65E-03	1.09E-02	1.85E-03			9.76E-01	9.94E-01	19.66
PCB-1254	6.58E-03	1.53E-02	2.34E-03			1.38E+00	1.40E+00	27.74
PCB-1260								
Phenanthrene								
Pyrene	4.46E-05	5.03E-04	2.22E-06			9.64E-03	1.02E-02	0.20
Cesium-137								
Neptunium-237								
Technetium-99								
Thorium-234								
Uranium-234								
Uranium-238								
Pathway Total	2.07E-02	5.89E-01	4.24E-03			4.44E+00	5.05E+00	
Fraction of Total	4.10E-03	1.17E-01				8.78E-01		

Table 1.65. Systemic toxicity for the future adult resident

----- LOCATION=SWMU 99B MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Barium	1.92E-01	4.98E-03				9.99E-02	2.97E-01	0.56
Chromium	5.65E-01	5.13E-02				2.92E-01	9.08E-01	1.72
Iron	2.05E-01	2.48E-03				1.06E-01	3.13E-01	0.59
Manganese	1.55E-01	7.01E-03				3.12E-02	1.93E-01	0.36
Silica Sulfate								
Tetraxo-sulfate(1-)								
Zinc	5.33E-03	4.84E-05				4.76E-03	1.01E-02	0.02
Trichloroethane	9.49E+00	1.84E+00		2.59E+00	2.81E+01	9.13E+00	5.12E+01	96.75
Radon-222								
Pathway Total	1.06E+01	1.90E+00		2.59E+00	2.81E+01	9.66E+00	5.29E+01	
Fraction of Total	2.01E-01	3.60E-02		4.90E-02	5.32E-01	1.83E-01		

Table 1.65. Systemic toxicity for the future adult resident without lead

----- LOCATION-AOC 204 MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethane	1.37E+00	2.21E-02		2.62E-01	2.84E+00	2.07E+00	6.56E+00	6.46
1,1-Dichloroethene	1.22E-01	1.97E-03		3.33E-02	3.61E-01	1.84E-01	7.02E-01	0.69
PCB-1254	3.42E+01	2.39E+01				1.78E+01	7.60E+01	74.71
PCB-1260								
Polychlorinated biphenyl								
Tetrachloroethene	1.76E+00	1.18E+00		2.80E-02	3.04E-01	1.51E+00	4.77E+00	4.69
Trichloroethene	2.52E+00	4.87E-01		6.88E-01	7.47E+00	2.42E+00	1.36E+01	13.36
Vinyl Chloride								
cis-1,2-Dichloroethene	1.64E-02	2.98E-04		4.49E-03	4.87E-02	2.28E-02	9.27E-02	0.09
Pathway Total	4.00E+01	2.56E+01		1.02E+00	1.10E+01	2.40E+01	1.02E+02	
Fraction of Total	3.94E-01	2.52E-01		9.98E-03	1.08E-01	2.36E-01		

----- LOCATION-SWMU 193A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Iron	1.21E+01	1.46E-01				6.24E+00	1.85E+01	87.16
Tetraoxo-sulfate(1-)								
Trichloroethene	1.70E-02	3.29E-03		4.64E-03	5.04E-02	1.63E-02	9.17E-02	0.43
cis-1,2-Dichloroethene	4.66E-01	8.45E-03		1.27E-01	1.38E+00	6.45E-01	2.63E+00	12.41
Technetium-99								
Uranium-238								
Pathway Total	1.26E+01	1.58E-01		1.32E-01	1.43E+00	6.90E+00	2.12E+01	
Fraction of Total	5.93E-01	7.45E-03		6.23E-03	6.76E-02	3.26E-01		

----- LOCATION-SWMU 193A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Ammonia								
Fluoride	1.92E-01	3.59E-04					1.92E-01	2.21
Iron	2.76E+00	3.34E-02				1.43E+00	4.22E+00	48.55
Silica								
Tetraoxo-sulfate(1-)								
Zinc	9.01E-03	8.18E-05				8.05E-03	1.71E-02	0.20
1,1-Dichloroethene	6.09E-04	9.83E-06		1.66E-04	1.81E-03	9.18E-04	3.51E-03	0.04
Pentachlorophenol	7.73E-03	9.12E-03				4.02E-03	2.09E-02	0.24
Trichloroethene	7.72E-01	1.49E-01		2.11E-01	2.29E+00	7.42E-01	4.16E+00	47.88
bis(2-Ethylhexyl)phthalate	1.77E-02	3.95E-03				9.40E-03	3.10E-02	0.36
cis-1,2-Dichloroethene	7.96E-03	1.44E-04		2.17E-03	2.36E-02	1.10E-02	4.49E-02	0.52
Technetium-99								
Pathway Total	3.77E+00	1.96E-01		2.13E-01	2.31E+00	2.20E+00	8.69E+00	
Fraction of Total	4.33E-01	2.26E-02		2.45E-02	2.66E-01	2.53E-01		

Table 1.65. Systemic toxicity for the future adult resident without lead

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Chromium	5.59E-03	4.89E-01	3.66E-06			1.16E+00	1.65E+00	99.40
Anthracene	5.30E-07	2.44E-06	1.28E-07			1.19E-04	1.22E-04	0.01
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Chrysene								
Di-n-butylphthalate	1.05E-06	3.69E-06	2.47E-08			2.28E-04	2.33E-04	0.01
Di-n-octylphthalate	8.22E-06	3.20E-05	2.60E-08			1.71E-03	1.75E-03	0.10
Dibenz(a,h)anthracene								
Fluoranthene	9.35E-06	1.06E-04	5.78E-07			2.02E-03	2.14E-03	0.13
Indeno(1,2,3-cd)pyrene								
Pyrene	1.35E-05	1.52E-04	6.70E-07			2.91E-03	3.08E-03	0.19
bis(2-Ethylhexyl)phthalate	1.16E-05	2.14E-04	1.02E-08			2.52E-03	2.74E-03	0.16
Pathway Total	5.63E-03	4.90E-01	5.09E-06			1.17E+00	1.66E+00	
Fraction of Total	3.38E-03	2.94E-01				7.03E-01		

----- LOCATION=SWMU 193B MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Trichloroethene	5.94E-02	1.15E-02		1.62E-02	1.76E-01	5.71E-02	3.20E-01	47.39
cis-1,2-Dichloroethene	6.30E-02	1.14E-03		1.72E-02	1.87E-01	8.72E-02	3.55E-01	52.61
Pathway Total	1.22E-01	1.26E-02		3.34E-02	3.63E-01	1.44E-01	6.76E-01	
Fraction of Total	1.81E-01	1.87E-02		4.95E-02	5.37E-01	2.14E-01		

----- LOCATION=SWMU 193B MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethene	4.93E-03	7.96E-05		1.35E-03	1.46E-02	7.43E-03	2.84E-02	0.20
Acetone	9.04E-03	1.12E-05		2.47E-03	2.68E-02	1.41E-01	1.80E-01	1.29
Carbon Tetrachloride	2.15E-01	1.32E-02		7.21E-02	7.83E-01	1.67E-01	1.25E+00	8.98
Di-n-butylphthalate	2.78E-03	5.81E-04				1.48E-03	4.84E-03	0.03
Trichloroethene	2.28E+00	4.42E-01		6.23E-01	6.77E+00	2.20E+00	1.23E+01	88.41
bis(2-Ethylhexyl)phthalate	1.38E-02	3.09E-03				7.35E-03	2.42E-02	0.17
cis-1,2-Dichloroethene	2.25E-02	4.09E-04		6.15E-03	6.68E-02	3.12E-02	1.27E-01	0.91
Technetium-99								
Pathway Total	2.55E+00	4.59E-01		7.05E-01	7.66E+00	2.55E+00	1.39E+01	
Fraction of Total	1.83E-01	3.30E-02		5.06E-02	5.50E-01	1.83E-01		

Table 1.65. Systemic toxicity for the future adult resident without lead

----- LOCATION-SWMU 193B MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Beryllium	1.08E-03	1.88E-01	2.34E-06			2.25E-01	4.15E-01	2.40
Chromium	4.05E-02	3.54E+00	2.65E-05			8.41E+00	1.20E+01	69.32
Vanadium	1.27E-02	2.23E+00				2.65E+00	4.89E+00	28.28
Pathway Total	5.43E-02	5.96E+00	2.88E-05			1.13E+01	1.73E+01	
Fraction of Total	3.14E-03	3.44E-01				6.52E-01		

----- LOCATION-SWMU 193C MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Aluminum	1.05E+00	1.90E-02				5.42E-01	1.61E+00	4.18
Antimony	7.83E+00	7.11E-01				4.15E+00	1.27E+01	33.00
Arsenic	1.11E+00	4.94E-03				5.91E-01	1.71E+00	4.45
Barium	9.56E-02	2.48E-03				4.98E-02	1.48E-01	0.38
Beryllium	1.52E-01	2.76E-02				7.90E-02	2.59E-01	0.67
Cadmium	1.94E+00	3.52E-01				6.90E-01	2.98E+00	7.74
Chromium	1.31E+00	1.19E-01				6.75E-01	2.10E+00	5.46
Cobalt	2.43E-02	5.51E-05				1.33E-02	3.77E-02	0.10
Iron	5.38E+00	6.50E-02				2.78E+00	8.22E+00	21.36
Manganese	8.11E-01	3.68E-02				1.64E-01	1.01E+00	2.63
Mercury	1.83E-02	4.74E-04				1.72E-02	3.60E-02	0.09
Molybdenum	2.53E-01	1.21E-03				1.59E-01	4.14E-01	1.08
Nickel	7.36E-02	4.95E-04				4.32E-02	1.17E-01	0.30
Silica								
Silver	1.82E-01	1.83E-03				9.39E-02	2.78E-01	0.72
Tetraxo-sulfate(1-)								
Thallium								
Uranium	5.85E-02	1.25E-04				3.02E-02	8.88E-02	0.23
Vanadium	3.27E+00	5.94E-01				1.70E+00	5.56E+00	14.46
Zinc	1.86E-02	1.68E-04				1.66E-02	3.53E-02	0.09
1,1,2-Trichloroethane	1.71E-02	3.22E-04		4.68E-03	5.08E-02	2.18E-02	9.47E-02	0.25
1,1-Dichloroethane	7.61E-03	1.23E-04		2.08E-03	2.26E-02	1.15E-02	4.39E-02	0.11
1,2-Dichloroethane				6.54E-03	7.10E-02		7.76E-02	0.20
Benzene				1.09E-02	1.19E-01		1.30E-01	0.34
Bromodichloromethane	3.42E-03	3.68E-05		9.35E-04	1.02E-02	4.04E-03	1.86E-02	0.05
Carbon Tetrachloride	9.78E-02	6.01E-03		3.28E-02	3.56E-01	7.60E-02	5.68E-01	1.48
Chloroform	6.85E-03	5.53E-04		1.87E-03	2.03E-02	8.74E-03	3.83E-02	0.10
Ethylbenzene	6.85E-04	9.48E-05		6.55E-05	7.11E-04	4.73E-04	2.03E-03	0.01
Polychlorinated biphenyl								
Tetrachloroethene	6.85E-03	4.60E-03		1.09E-04	1.18E-03	5.87E-03	1.86E-02	0.05
Trichloroethane	5.63E-03	1.09E-03		1.54E-03	1.67E-02	5.41E-03	3.04E-02	0.08
Vinyl Chloride								
Xylene	7.46E-05	1.39E-05		2.04E-05	2.21E-04	4.85E-05	3.79E-04	0.00
cis-1,2-Dichloroethene	1.37E-02	2.49E-04		3.74E-03	4.06E-02	1.90E-02	7.73E-02	0.20
trans-1,2-Dichloroethene	6.85E-03	1.33E-05		1.87E-03	2.03E-02	4.32E-02	7.22E-02	0.19
Radon-222								
Pathway Total	2.37E+01	1.95E+00		6.71E-02	7.29E-01	1.20E+01	3.85E+01	
Fraction of Total	6.17E-01	5.06E-02		1.75E-03	1.90E-02	3.12E-01		

Table 1.65. Systemic toxicity for the future adult resident without lead

----- LOCATION-SWMU 193C MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,2-Dichloroethene	1.71E+00	4.15E-03		4.67E-01	5.07E+00	1.08E+01	1.80E+01	81.89
Trichloroethene	7.40E-01	1.43E-01		2.02E-01	2.19E+00	7.11E-01	3.99E+00	18.11
Pathway Total	2.45E+00	1.47E-01		6.69E-01	7.27E+00	1.15E+01	2.20E+01	
Fraction of Total	1.11E-01	6.69E-03		3.04E-02	3.30E-01	5.22E-01		

----- LOCATION-SWMU 193C MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Chromium	2.50E-03	2.19E-01	1.63E-06			5.18E-01	7.39E-01	90.09
Zinc	1.90E-04	1.66E-03				7.94E-02	8.13E-02	9.91
Pathway Total	2.69E-03	2.20E-01	1.63E-06			5.98E-01	8.21E-01	
Fraction of Total	3.27E-03	2.68E-01				7.28E-01		

----- LOCATION-SWMU 99A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethene	3.17E-02	5.12E-04		8.65E-03	9.40E-02	4.78E-02	1.83E-01	1.37
Carbon Tetrachloride	1.10E-01	6.73E-03		3.67E-02	3.98E-01	8.52E-02	6.37E-01	4.78
Trichloroethene	1.99E+00	3.85E-01		5.43E-01	5.90E+00	1.91E+00	1.07E+01	80.47
cis-1,2-Dichloroethene	3.16E-01	5.74E-03		8.63E-02	9.38E-01	4.38E-01	1.78E+00	13.38
Pathway Total	2.45E+00	3.98E-01		6.75E-01	7.33E+00	2.48E+00	1.33E+01	
Fraction of Total	1.84E-01	2.99E-02		5.06E-02	5.50E-01	1.86E-01		

----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Aluminum	2.97E-01	5.39E-03				1.54E-01	4.56E-01	1.61
Arsenic	5.03E-01	2.23E-03				2.67E-01	7.72E-01	2.73
Barium	1.34E-01	3.48E-03				6.99E-02	2.08E-01	0.73
Beryllium	1.42E-01	2.58E-02				7.38E-02	2.42E-01	0.85
Chromium	1.16E+00	1.05E-01				5.98E-01	1.86E+00	6.57
Cobalt	4.31E-02	9.78E-05				2.37E-02	6.69E-02	0.24
Copper	5.46E-02	3.31E-04				3.44E-02	8.94E-02	0.32
Iron	2.12E+00	2.56E-02				1.09E+00	3.24E+00	11.44
Lithium	1.02E-01	2.31E-04				5.35E-02	1.56E-01	0.55
Manganese	9.90E-01	4.49E-02				2.00E-01	1.23E+00	4.36
Mercury	3.94E-02	1.02E-03				3.72E-02	7.77E-02	0.27
Nickel	2.10E-01	1.41E-03				1.24E-01	3.35E-01	1.18
Silica								
Sulfate								
Tetraoxo-sulfate(1-)								

Table 1.65. Systemic toxicity for the future adult resident without lead

----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Vanadium	1.44E+00	2.61E-01				7.45E-01	2.44E+00	8.63
Zinc	2.06E-02	1.87E-04				1.84E-02	3.91E-02	0.14
1,1-Dichloroethene	5.44E-02	8.79E-04		1.49E-02	1.61E-01	8.21E-02	3.14E-01	1.11
Trichloroethene	3.09E+00	5.97E-01		8.43E-01	9.15E+00	2.97E+00	1.66E+01	58.80
bis(2-Ethylhexyl)phthalate	1.31E-02	2.93E-03				6.97E-03	2.30E-02	0.08
cis-1,2-Dichloroethene	1.93E-02	3.50E-04		5.27E-03	5.72E-02	2.67E-02	1.09E-01	0.38
Radon-222								
Technetium-99								
Pathway Total	1.04E+01	1.08E+00		8.63E-01	9.37E+00	6.57E+00	2.83E+01	
Fraction of Total	3.68E-01	3.81E-02		3.05E-02	3.31E-01	2.32E-01		

----- LOCATION-SWMU 99A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Barium	4.07E-03	1.02E-01	1.24E-05			8.54E-01	9.60E-01	19.00
Beryllium	4.57E-04	7.99E-02	9.96E-07			9.57E-02	1.76E-01	3.48
Chromium	4.29E-03	3.76E-01	2.81E-06			8.91E-01	1.27E+00	25.15
Zinc	5.16E-04	4.51E-03				2.16E-01	2.21E-01	4.36
Acenaphthene	7.53E-06	8.51E-05	6.52E-06			1.71E-03	1.81E-03	0.04
Acenaphthylene								
Anthracene	2.71E-06	1.25E-05	6.55E-07			6.08E-04	6.24E-04	0.01
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Chrysene								
Dibenz(a,h)anthracene								
Dibenzofuran	4.21E-05	2.95E-04	1.96E-05			8.87E-03	9.23E-03	0.18
Fluoranthene	2.92E-05	3.29E-04	1.80E-06			6.31E-03	6.67E-03	0.13
Fluorene	7.50E-06	5.25E-05	2.77E-06			1.69E-03	1.75E-03	0.03
Indeno(1,2,3-cd)pyrene								
PCB-1016	4.65E-03	1.09E-02	1.85E-03			9.76E-01	9.94E-01	19.66
PCB-1254	6.58E-03	1.53E-02	2.34E-03			1.38E+00	1.40E+00	27.74
PCB-1260								
Phenanthrene								
Pyrene	4.46E-05	5.03E-04	2.22E-06			9.64E-03	1.02E-02	0.20
Cesium-137								
Neptunium-237								
Technetium-99								
Thorium-234								
Uranium-234								
Uranium-238								
Pathway Total	2.07E-02	5.89E-01	4.24E-03			4.44E+00	5.05E+00	
Fraction of Total	4.10E-03	1.17E-01				8.78E-01		

Table 1.65. Systemic toxicity for the future adult resident without lead

----- LOCATION=SWMU 99B MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Barium	1.92E-01	4.98E-03				9.99E-02	2.97E-01	0.56
Chromium	5.65E-01	5.13E-02				2.92E-01	9.08E-01	1.72
Iron	2.05E-01	2.48E-03				1.06E-01	3.13E-01	0.59
Manganese	1.55E-01	7.01E-03				3.12E-02	1.93E-01	0.36
Silica Sulfate								
Tetraoxo-sulfate(1-)								
Zinc	5.33E-03	4.84E-05				4.76E-03	1.01E-02	0.02
Trichloroethene	9.49E+00	1.84E+00		2.59E+00	2.81E+01	9.13E+00	5.12E+01	96.75
Radon-222								
Pathway Total	1.06E+01	1.90E+00		2.59E+00	2.81E+01	9.66E+00	5.29E+01	
Fraction of Total	2.01E-01	3.60E-02		4.90E-02	5.32E-01	1.83E-01		

Table 1.66. Systemic toxicity for the future child resident

----- LOCATION=AOC 204 MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethane	3.31E+00	4.24E-02		1.26E+00	1.37E+01	6.50E+00	2.48E+01	8.90
1,1-Dichloroethene	2.94E-01	3.77E-03		1.61E-01	1.74E+00	5.78E-01	2.78E+00	1.00
PCB-1254	8.27E+01	4.58E+01				5.60E+01	1.84E+02	66.05
PCB-1260								
Polychlorinated biphenyl								
Tetrachloroethene	4.24E+00	2.26E+00		1.35E-01	1.47E+00	4.74E+00	1.28E+01	4.60
Trichloroethane	6.08E+00	9.33E-01		3.32E+00	3.60E+01	7.62E+00	5.40E+01	19.33
Vinyl Chloride								
cis-1,2-Dichloroethene	3.97E-02	5.71E-04		2.17E-02	2.35E-01	7.16E-02	3.69E-01	0.13
Pathway Total	9.66E+01	4.90E+01		4.90E+00	5.32E+01	7.55E+01	2.79E+02	
Fraction of Total	3.46E-01	1.76E-01		1.75E-02	1.91E-01	2.70E-01		

----- LOCATION=SWMU 193A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Iron	2.91E+01	2.80E-01				1.96E+01	4.90E+01	81.93
Tetraoxo-sulfate(1-)								
Trichloroethene	4.10E-02	6.30E-03		2.24E-02	2.43E-01	5.14E-02	3.65E-01	0.61
cis-1,2-Dichloroethene	1.12E+00	1.62E-02		6.14E-01	6.67E+00	2.03E+00	1.05E+01	17.46
Technetium-99								
Uranium-238								
Pathway Total	3.03E+01	3.02E-01		6.36E-01	6.91E+00	2.17E+01	5.99E+01	
Fraction of Total	5.06E-01	5.05E-03		1.06E-02	1.15E-01	3.63E-01		

----- LOCATION=SWMU 193A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Ammonia								
Fluoride	4.63E-01	6.87E-04					4.64E-01	1.62
Iron	6.66E+00	6.40E-02				4.49E+00	1.12E+01	39.22
Silica								
Tetraoxo-sulfate(1-)								
Zinc	2.18E-02	1.57E-04				2.53E-02	4.72E-02	0.17
1,1-Dichloroethane	1.47E-03	1.88E-05		8.03E-04	8.72E-03	2.89E-03	1.39E-02	0.05
Pentachlorophenol	1.87E-02	1.75E-02				1.27E-02	4.88E-02	0.17
Trichloroethene	1.86E+00	2.86E-01		1.02E+00	1.10E+01	2.33E+00	1.65E+01	57.87
bis(2-Ethylhexyl)phthalate	4.27E-02	7.57E-03				2.96E-02	7.98E-02	0.28
cis-1,2-Dichloroethene	1.92E-02	2.77E-04		1.05E-02	1.14E-01	3.47E-02	1.79E-01	0.62
Technetium-99								
Pathway Total	9.09E+00	3.76E-01		1.03E+00	1.12E+01	6.93E+00	2.86E+01	
Fraction of Total	3.18E-01	1.32E-02		3.60E-02	3.91E-01	2.42E-01		

Table 1.66. Systemic toxicity for the future child resident

----- LOCATION-SWMU 193A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Chromium	5.40E-02	2.52E+00	3.66E-06			3.65E+00	6.22E+00	99.47
Anthracene	5.11E-06	1.25E-05	1.28E-07			3.74E-04	3.92E-04	0.01
Benz (a) anthracene								
Benzo (a) pyrene								
Benzo (b) fluoranthene								
Benzo (ghi) perylene								
Chrysene								
Di-n-butylphthalate	1.02E-05	1.90E-05	2.47E-08			7.18E-04	7.47E-04	0.01
Di-n-octylphthalate	7.94E-05	1.64E-04	2.60E-08			5.37E-03	5.61E-03	0.09
Dibenz (a, h) anthracene								
Fluoranthene	9.03E-05	5.43E-04	5.78E-07			6.36E-03	6.99E-03	0.11
Indeno (1, 2, 3-cd) pyrene								
Pyrene	1.30E-04	7.82E-04	6.70E-07			9.17E-03	1.01E-02	0.16
bis (2-Ethylhexyl) phthalate	1.12E-04	1.10E-03	1.02E-08			7.92E-03	9.14E-03	0.15
Pathway Total	5.44E-02	2.52E+00	5.09E-06			3.68E+00	6.25E+00	
Fraction of Total	8.70E-03	4.03E-01				5.88E-01		

----- LOCATION-SWMU 193B MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Trichloroethene	1.43E-01	2.20E-02		7.83E-02	8.50E-01	1.80E-01	1.27E+00	47.3
cis-1, 2-Dichloroethene	1.52E-01	2.19E-03		8.31E-02	9.02E-01	2.74E-01	1.41E+00	52.6
Pathway Total	2.95E-01	2.42E-02		1.61E-01	1.75E+00	4.54E-01	2.69E+00	
Fraction of Total	1.10E-01	9.01E-03		6.00E-02	6.52E-01	1.69E-01		

----- LOCATION-SWMU 193B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethene	1.19E-02	1.52E-04		6.50E-03	7.06E-02	2.34E-02	1.12E-01	0.20
Acetone	2.18E-02	2.15E-05		1.19E-02	1.29E-01	4.45E-01	6.08E-01	1.10
Carbon Tetrachloride	5.20E-01	2.53E-02		3.48E-01	3.78E+00	5.26E-01	5.20E+00	9.37
Di-n-butylphthalate	6.72E-03	1.11E-03				4.66E-03	1.25E-02	0.02
Trichloroethene	5.51E+00	8.46E-01		3.01E+00	3.27E+01	6.91E+00	4.90E+01	88.28
bis (2-Ethylhexyl) phthalate	3.33E-02	5.91E-03				2.31E-02	6.24E-02	0.11
cis-1, 2-Dichloroethene	5.43E-02	7.83E-04		2.97E-02	3.22E-01	9.81E-02	5.05E-01	0.91
Technetium-99								
Pathway Total	6.16E+00	8.80E-01		3.41E+00	3.70E+01	8.03E+00	5.55E+01	
Fraction of Total	1.11E-01	1.59E-02		6.14E-02	6.67E-01	1.45E-01		

Table 1.66. Systemic toxicity for the future child resident

----- LOCATION-SWMU 193B MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Beryllium	1.04E-02	9.68E-01	2.34E-06			7.09E-01	1.69E+00	2.53
Chromium	3.91E-01	1.82E+01	2.65E-05			2.64E+01	4.51E+01	67.59
Vanadium	1.23E-01	1.15E+01				8.35E+00	1.99E+01	29.88
Pathway Total	5.24E-01	3.07E+01	2.88E-05			3.55E+01	6.67E+01	
Fraction of Total	7.86E-03	4.60E-01				5.32E-01		

----- LOCATION-SWMU 193C MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Aluminum	2.53E+00	3.64E-02				1.70E+00	4.27E+00	0.00
Antimony	1.89E+01	1.36E+00				1.31E+01	3.33E+01	0.01
Arsenic	2.69E+00	9.45E-03				1.86E+00	4.56E+00	0.00
Barium	2.31E-01	4.75E-03				1.57E-01	3.92E-01	0.00
Beryllium	3.67E-01	5.28E-02				2.49E-01	6.68E-01	0.00
Cadmium	4.68E+00	6.73E-01				2.17E+00	7.52E+00	0.00
Chromium	3.16E+00	2.27E-01				2.12E+00	5.51E+00	0.00
Cobalt	5.86E-02	1.05E-04				4.19E-02	1.01E-01	0.00
Iron	1.30E+01	1.25E-01				8.74E+00	2.18E+01	0.01
Lead	1.65E+05	1.59E+03				1.11E+05	2.78E+05	99.96
Manganese	1.96E+00	7.05E-02				5.15E-01	2.54E+00	0.00
Mercury	4.41E-02	9.07E-04				5.42E-02	9.92E-02	0.00
Molybdenum	6.11E-01	2.31E-03				5.01E-01	1.11E+00	0.00
Nickel	1.78E-01	9.47E-04				1.36E-01	3.15E-01	0.00
Silica								
Silver	4.39E-01	3.51E-03				2.95E-01	7.38E-01	0.00
Tetraoxo-sulfate(1-)								
Thallium								
Uranium	1.41E-01	2.39E-04				9.51E-02	2.36E-01	0.00
Vanadium	7.90E+00	1.14E+00				5.33E+00	1.44E+01	0.01
Zinc	4.48E-02	3.23E-04				5.21E-02	9.73E-02	0.00
1,1,2-Trichloroethane	4.13E-02	6.17E-04		2.26E-02	2.45E-01	6.87E-02	3.78E-01	0.00
1,1-Dichloroethene	1.84E-02	2.35E-04		1.00E-02	1.09E-01	3.61E-02	1.74E-01	0.00
1,2-Dichloroethane				3.16E-02	3.43E-01		3.74E-01	0.00
Benzene				5.28E-02	5.73E-01		6.26E-01	0.00
Bromodichloromethane	8.27E-03	7.05E-05		4.51E-03	4.90E-02	1.27E-02	7.46E-02	0.00
Carbon Tetrachloride	2.36E-01	1.15E-02		1.58E-01	1.72E+00	2.39E-01	2.36E+00	0.00
Chloroform	1.65E-02	1.06E-03		9.03E-03	9.81E-02	2.75E-02	1.52E-01	0.00
Ethylbenzene	1.65E-03	1.82E-04		3.16E-04	3.43E-03	1.49E-03	7.07E-03	0.00
Polychlorinated biphenyl								
Tetrachloroethene	1.65E-02	8.81E-03		5.27E-04	5.72E-03	1.85E-02	5.01E-02	0.00
Trichloroethene	1.36E-02	2.09E-03		7.42E-03	8.06E-02	1.70E-02	1.21E-01	0.00
Vinyl Chloride								
Xylene	1.80E-04	2.67E-05		9.84E-05	1.07E-03	1.53E-04	1.53E-03	0.00
cis-1,2-Dichloroethane	3.31E-02	4.76E-04		1.81E-02	1.96E-01	5.97E-02	3.07E-01	0.00
trans-1,2-Dichloroethane	1.65E-02	2.55E-05		9.03E-03	9.81E-02	1.36E-01	2.59E-01	0.00
Radon-222								
Pathway Total	1.65E+05	1.59E+03		3.24E-01	3.52E+00	1.11E+05	2.78E+05	
Fraction of Total	5.94E-01	5.71E-03		1.16E-06	1.26E-05	4.00E-01		

Table 1.66. Systemic toxicity for the future child resident

----- LOCATION-SWMU 193C MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,2-Dichloroethene	4.13E+00	7.95E-03		2.26E+00	2.45E+01	3.39E+01	6.48E+01	80.33
Trichloroethene	1.79E+00	2.74E-01		9.75E-01	1.06E+01	2.24E+00	1.59E+01	19.67
Pathway Total	5.92E+00	2.82E-01		3.23E+00	3.51E+01	3.61E+01	8.07E+01	
Fraction of Total	7.33E-02	3.50E-03		4.01E-02	4.35E-01	4.48E-01		

----- LOCATION-SWMU 193C MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Chromium	2.41E-02	1.12E+00	1.63E-06			1.63E+00	2.78E+00	0.00
Lead	3.30E+03	2.05E+04	7.45E-07			2.24E+05	2.47E+05	100.0
Zinc	1.83E-03	8.55E-03				2.50E-01	2.60E-01	0.00
Pathway Total	3.30E+03	2.05E+04	2.38E-06			2.24E+05	2.47E+05	
Fraction of Total	1.33E-02	8.29E-02				9.04E-01		

----- LOCATION-SWMU 99A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethene	7.65E-02	9.80E-04		4.18E-02	4.54E-01	1.50E-01	7.23E-01	1.36
Carbon Tetrachloride	2.65E-01	1.29E-02		1.77E-01	1.92E+00	2.68E-01	2.65E+00	4.98
Trichloroethene	4.80E+00	7.37E-01		2.62E+00	2.85E+01	6.01E+00	4.26E+01	80.30
cis-1,2-Dichloroethene	7.63E-01	1.10E-02		4.17E-01	4.53E+00	1.38E+00	7.09E+00	13.36
Pathway Total	5.90E+00	7.62E-01		3.26E+00	3.54E+01	7.81E+00	5.31E+01	
Fraction of Total	1.11E-01	1.44E-02		6.13E-02	6.66E-01	1.47E-01		

----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Aluminum	7.16E-01	1.03E-02				4.83E-01	1.21E+00	0.00
Arsenic	1.21E+00	4.26E-03				8.39E-01	2.06E+00	0.00
Barium	3.24E-01	6.67E-03				2.20E-01	5.51E-01	0.00
Beryllium	3.43E-01	4.93E-02				2.32E-01	6.24E-01	0.00
Chromium	2.80E+00	2.01E-01				1.88E+00	4.88E+00	0.01
Cobalt	1.04E-01	1.87E-04				7.45E-02	1.79E-01	0.00
Copper	1.32E-01	6.33E-04				1.08E-01	2.41E-01	0.00
Iron	5.11E+00	4.91E-02				3.44E+00	8.60E+00	0.01
Lead	5.37E+04	5.16E+02				3.62E+04	9.05E+04	99.89
Lithium	2.46E-01	4.43E-04				1.68E-01	4.15E-01	0.00
Manganese	2.39E+00	8.60E-02				6.29E-01	3.10E+00	0.00
Mercury	9.51E-02	1.96E-03				1.17E-01	2.14E-01	0.00
Nickel	5.08E-01	2.71E-03				3.89E-01	8.99E-01	0.00
Silica								

Table 1.66. Systemic toxicity for the future child resident

----- LOCATION=SWMU 99A MEDIA=RGA Groundwater -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Sulfate								
Tetraoxo-sulfate(1-)								
Vanadium	3.47E+00	5.00E-01				2.34E+00	6.31E+00	0.01
Zinc	4.96E-02	3.57E-04				5.78E-02	1.08E-01	0.00
1,1-Dichloroethene	1.31E-01	1.68E-03		7.18E-02	7.79E-01	2.58E-01	1.24E+00	0.00
Trichloroethene	7.45E+00	1.14E+00		4.07E+00	4.42E+01	9.33E+00	6.62E+01	0.07
bis(2-Ethylhexyl)phthalate	3.16E-02	5.61E-03				2.19E-02	5.91E-02	0.00
cis-1,2-Dichloroethene	4.65E-02	6.70E-04		2.54E-02	2.76E-01	8.40E-02	4.33E-01	0.00
Radon-222								
Technetium-99								
Pathway Total	5.38E+04	5.18E+02		4.16E+00	4.52E+01	3.63E+04	9.06E+04	
Fraction of Total	5.94E-01	5.72E-03		4.60E-05	4.99E-04	4.00E-01		

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Barium	3.93E-02	5.24E-01	1.24E-05			2.69E+00	3.25E+00	18.89
Beryllium	4.41E-03	4.11E-01	9.96E-07			3.01E-01	7.16E-01	4.16
Chromium	4.15E-02	1.93E+00	2.81E-06			2.80E+00	4.78E+00	27.78
Zinc	4.98E-03	2.32E-02				6.78E-01	7.06E-01	4.11
Acenaphthene	7.27E-05	4.38E-04	6.52E-06			5.38E-03	5.90E-03	0.03
Acenaphthylene								
Anthracene	2.61E-05	6.41E-05	6.55E-07			1.91E-03	2.00E-03	0.01
Benz (a) anthracene								
Benzo (a) pyrene								
Benzo (b) fluoranthene								
Benzo (ghi) perylene								
Benzo (k) fluoranthene								
Chrysene								
Dibenz (a, h) anthracene								
Dibenzofuran	4.07E-04	1.52E-03	1.96E-05			2.79E-02	2.98E-02	0.17
Fluoranthene	2.82E-04	1.69E-03	1.80E-06			1.98E-02	2.18E-02	0.13
Fluorene	7.24E-05	2.70E-04	2.77E-06			5.30E-03	5.65E-03	0.03
Indeno (1,2,3-cd) pyrene								
PCB-1016	4.49E-02	5.59E-02	1.85E-03			3.07E+00	3.17E+00	18.45
PCB-1254	6.35E-02	7.89E-02	2.34E-03			4.33E+00	4.48E+00	26.03
PCB-1260								
Phenanthrene								
Pyrene	4.30E-04	2.59E-03	2.22E-06			3.03E-02	3.34E-02	0.19
Cesium-137								
Neptunium-237								
Technetium-99								
Thorium-234								
Uranium-234								
Uranium-238								
Pathway Total	2.00E-01	3.03E+00	4.24E-03			1.40E+01	1.72E+01	
Fraction of Total	1.16E-02	1.76E-01				8.12E-01		

Table 1.66. Systemic toxicity for the future child resident

----- LOCATION-SWMU 99B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Barium	4.64E-01	9.54E-03				3.14E-01	7.87E-01	0.38
Chromium	1.36E+00	9.82E-02				9.18E-01	2.38E+00	1.14
Iron	4.94E-01	4.74E-03				3.33E-01	8.32E-01	0.40
Manganese	3.73E-01	1.34E-02				9.81E-02	4.85E-01	0.23
Silica								
Sulfate								
Tetraoxo-sulfate(1-)								
Zinc	1.29E-02	9.26E-05				1.50E-02	2.79E-02	0.01
Trichloroethene	2.29E+01	3.52E+00		1.25E+01	1.36E+02	2.87E+01	2.04E+02	97.83
Radon-222								
Pathway Total	2.56E+01	3.64E+00		1.25E+01	1.36E+02	3.04E+01	2.08E+02	
Fraction of Total	1.23E-01	1.75E-02		6.01E-02	6.53E-01	1.46E-01		

Table 1.66. Systemic toxicity for the future child resident without lead

----- LOCATION=AOC 204 MEDIA=RGa Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethane	3.31E+00	4.24E-02		1.26E+00	1.37E+01	6.50E+00	2.48E+01	8.90
1,1-Dichloroethene	2.94E-01	3.77E-03		1.61E-01	1.74E+00	5.78E-01	2.78E+00	1.00
PCB-1254	8.27E+01	4.58E+01				5.60E+01	1.84E+02	66.05
PCB-1260								
Polychlorinated biphenyl								
Tetrachloroethene	4.24E+00	2.26E+00		1.35E-01	1.47E+00	4.74E+00	1.28E+01	4.60
Trichloroethene	6.08E+00	9.33E-01		3.32E+00	3.60E+01	7.62E+00	5.40E+01	19.33
Vinyl Chloride								
cis-1,2-Dichloroethene	3.97E-02	5.71E-04		2.17E-02	2.35E-01	7.16E-02	3.69E-01	0.13
Pathway Total	9.66E+01	4.90E+01		4.90E+00	5.32E+01	7.55E+01	2.79E+02	
Fraction of Total	3.46E-01	1.76E-01		1.75E-02	1.91E-01	2.70E-01		

----- LOCATION=SWMU 193A MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Iron	2.91E+01	2.80E-01				1.96E+01	4.90E+01	81.93
Tetraoxo-sulfate(1-)								
Trichloroethene	4.10E-02	6.30E-03		2.24E-02	2.43E-01	5.14E-02	3.65E-01	0.61
cis-1,2-Dichloroethene	1.12E+00	1.62E-02		6.14E-01	6.67E+00	2.03E+00	1.05E+01	17.46
Technetium-99								
Uranium-238								
Pathway Total	3.03E+01	3.02E-01		6.36E-01	6.91E+00	2.17E+01	5.99E+01	
Fraction of Total	5.06E-01	5.05E-03		1.06E-02	1.15E-01	3.63E-01		

----- LOCATION=SWMU 193A MEDIA=RGa Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Ammonia								
Fluoride	4.63E-01	6.87E-04					4.64E-01	1.62
Iron	6.66E+00	6.40E-02				4.49E+00	1.12E+01	39.22
Silica								
Tetraoxo-sulfate(1-)								
Zinc	2.18E-02	1.57E-04				2.53E-02	4.72E-02	0.17
1,1-Dichloroethene	1.47E-03	1.88E-05		8.03E-04	8.72E-03	2.89E-03	1.39E-02	0.05
Pentachlorophenol	1.87E-02	1.75E-02				1.27E-02	4.88E-02	0.17
Trichloroethene	1.86E+00	2.86E-01		1.02E+00	1.10E+01	2.33E+00	1.65E+01	57.87
bis(2-Ethylhexyl)phthalate	4.27E-02	7.57E-03				2.96E-02	7.98E-02	0.28
cis-1,2-Dichloroethene	1.92E-02	2.77E-04		1.05E-02	1.14E-01	3.47E-02	1.79E-01	0.62
Technetium-99								
Pathway Total	9.09E+00	3.76E-01		1.03E+00	1.12E+01	6.93E+00	2.86E+01	
Fraction of Total	3.18E-01	1.32E-02		3.60E-02	3.91E-01	2.42E-01		

Table 1.66. Systemic toxicity for the future child resident without lead

----- LOCATION-SWMU 193A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Chromium	5.40E-02	2.52E+00	3.66E-06			3.65E+00	6.22E+00	99.47
Anthracene	5.11E-06	1.25E-05	1.28E-07			3.74E-04	3.92E-04	0.01
Benzo(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Chrysene								
Di-n-butylphthalate	1.02E-05	1.90E-05	2.47E-08			7.18E-04	7.47E-04	0.01
Di-n-octylphthalate	7.94E-05	1.64E-04	2.60E-08			5.37E-03	5.61E-03	0.09
Dibenz(a,h)anthracene								
Fluoranthene	9.03E-05	5.43E-04	5.78E-07			6.36E-03	6.99E-03	0.11
Indano(1,2,3-cd)pyrene								
Pyrene	1.30E-04	7.82E-04	6.70E-07			9.17E-03	1.01E-02	0.16
bis(2-Ethylhexyl)phthalate	1.12E-04	1.10E-03	1.02E-08			7.92E-03	9.14E-03	0.15
Pathway Total	5.44E-02	2.52E+00	5.09E-06			3.68E+00	6.25E+00	
Fraction of Total	8.70E-03	4.03E-01				5.88E-01		

----- LOCATION-SWMU 193B MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Trichloroethene	1.43E-01	2.20E-02		7.83E-02	8.50E-01	1.80E-01	1.27E+00	47.36
cis-1,2-Dichloroethene	1.52E-01	2.19E-03		8.31E-02	9.02E-01	2.74E-01	1.41E+00	52.62
Pathway Total	2.95E-01	2.42E-02		1.61E-01	1.75E+00	4.54E-01	2.69E+00	
Fraction of Total	1.10E-01	9.01E-03		6.00E-02	6.52E-01	1.69E-01		

----- LOCATION-SWMU 193B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethene	1.19E-02	1.52E-04		6.50E-03	7.06E-02	2.34E-02	1.12E-01	0.20
Acetone	2.18E-02	2.15E-05		1.19E-02	1.29E-01	4.45E-01	6.08E-01	1.10
Carbon Tetrachloride	5.20E-01	2.53E-02		3.48E-01	3.78E+00	5.26E-01	5.20E+00	9.37
Di-n-butylphthalate	6.72E-03	1.11E-03				4.66E-03	1.25E-02	0.02
Trichloroethene	5.51E+00	8.46E-01		3.01E+00	3.27E+01	6.91E+00	4.90E+01	88.28
bis(2-Ethylhexyl)phthalate	3.33E-02	5.91E-03				2.31E-02	6.24E-02	0.11
cis-1,2-Dichloroethene	5.43E-02	7.83E-04		2.97E-02	3.22E-01	9.81E-02	5.05E-01	0.91
Technetium-99								
Pathway Total	6.16E+00	8.80E-01		3.41E+00	3.70E+01	8.03E+00	5.55E+01	
Fraction of Total	1.11E-01	1.59E-02		6.14E-02	6.67E-01	1.45E-01		

Table 1.66. Systemic toxicity for the future child resident without lead

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Beryllium	1.04E-02	9.68E-01	2.34E-06			7.09E-01	1.69E+00	2.53
Chromium	3.91E-01	1.82E+01	2.65E-05			2.64E+01	4.51E+01	67.59
Vanadium	1.23E-01	1.15E+01				8.35E+00	1.99E+01	29.88
Pathway Total	5.24E-01	3.07E+01	2.88E-05			3.55E+01	6.67E+01	
Fraction of Total	7.86E-03	4.60E-01				5.32E-01		

----- LOCATION=SWMU 193C MEDIA=McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Aluminum	2.53E+00	3.64E-02				1.70E+00	4.27E+00	4.16
Antimony	1.89E+01	1.36E+00				1.31E+01	3.33E+01	32.49
Arsenic	2.69E+00	9.45E-03				1.86E+00	4.56E+00	4.45
Barium	2.31E-01	4.75E-03				1.57E-01	3.92E-01	0.38
Beryllium	3.67E-01	5.28E-02				2.49E-01	6.68E-01	0.65
Cadmium	4.68E+00	6.73E-01				2.17E+00	7.52E+00	7.33
Chromium	3.16E+00	2.27E-01				2.12E+00	5.51E+00	5.37
Cobalt	5.86E-02	1.05E-04				4.19E-02	1.01E-01	0.10
Iron	1.30E+01	1.25E-01				8.74E+00	2.18E+01	21.29
Manganese	1.96E+00	7.05E-02				5.15E-01	2.54E+00	2.48
Mercury	4.41E-02	9.07E-04				5.42E-02	9.92E-02	0.10
Molybdenum	6.11E-01	2.31E-03				5.01E-01	1.11E+00	1.09
Nickel	1.78E-01	9.47E-04				1.36E-01	3.15E-01	0.31
Silica								
Silver	4.39E-01	3.51E-03				2.95E-01	7.38E-01	0.72
Tetraoxo-sulfate(1-)								
Thallium								
Uranium	1.41E-01	2.39E-04				9.51E-02	2.36E-01	0.23
Vanadium	7.90E+00	1.14E+00				5.33E+00	1.44E+01	14.01
Zinc	4.48E-02	3.23E-04				5.21E-02	9.73E-02	0.09
1,1,2-Trichloroethane	4.13E-02	6.17E-04		2.26E-02	2.45E-01	6.87E-02	3.78E-01	0.37
1,1-Dichloroethene	1.84E-02	2.35E-04		1.00E-02	1.09E-01	3.61E-02	1.74E-01	0.17
1,2-Dichloroethane				3.16E-02	3.43E-01		3.74E-01	0.36
Benzene				5.28E-02	5.73E-01		6.26E-01	0.61
Bromodichloromethane	8.27E-03	7.05E-05		4.51E-03	4.90E-02	1.27E-02	7.46E-02	0.07
Carbon Tetrachloride	2.36E-01	1.15E-02		1.58E-01	1.72E+00	2.39E-01	2.36E+00	2.30
Chloroform	1.65E-02	1.06E-03		9.03E-03	9.81E-02	2.75E-02	1.52E-01	0.15
Ethylbenzene	1.65E-03	1.82E-04		3.16E-04	3.43E-03	1.49E-03	7.07E-03	0.01
Polychlorinated biphenyl								
Tetrachloroethene	1.65E-02	8.81E-03		5.27E-04	5.72E-03	1.85E-02	5.01E-02	0.05
Trichloroethane	1.36E-02	2.09E-03		7.42E-03	8.06E-02	1.70E-02	1.21E-01	0.12
Vinyl Chloride								
Xylene	1.80E-04	2.67E-05		9.84E-05	1.07E-03	1.53E-04	1.53E-03	0.00
cis-1,2-Dichloroethene	3.31E-02	4.76E-04		1.81E-02	1.96E-01	5.97E-02	3.07E-01	0.30
trans-1,2-Dichloroethene	1.65E-02	2.55E-05		9.03E-03	9.81E-02	1.36E-01	2.59E-01	0.25
Radon-222								
Pathway Total	5.73E+01	3.73E+00		3.24E-01	3.52E+00	3.77E+01	1.03E+02	
Fraction of Total	5.59E-01	3.64E-02		3.16E-03	3.43E-02	3.68E-01		

Table 1.66. Systemic toxicity for the future child resident without lead

----- LOCATION=SWMU 193C MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,2-Dichloroethene	4.13E+00	7.95E-03		2.26E+00	2.45E+01	3.39E+01	6.48E+01	80.33
Trichloroethene	1.79E+00	2.74E-01		9.75E-01	1.06E+01	2.24E+00	1.59E+01	19.67
Pathway Total	5.92E+00	2.82E-01		3.23E+00	3.51E+01	3.61E+01	8.07E+01	
Fraction of Total	7.33E-02	3.50E-03		4.01E-02	4.35E-01	4.48E-01		

----- LOCATION=SWMU 193C MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Chromium	2.41E-02	1.12E+00	1.63E-06			1.63E+00	2.78E+00	91.44
Zinc	1.83E-03	8.55E-03				2.50E-01	2.60E-01	8.56
Pathway Total	2.60E-02	1.13E+00	1.63E-06			1.88E+00	3.04E+00	
Fraction of Total	8.54E-03	3.73E-01				6.19E-01		

----- LOCATION=SWMU 99A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethene	7.65E-02	9.80E-04		4.18E-02	4.54E-01	1.50E-01	7.23E-01	1.36
Carbon Tetrachloride	2.65E-01	1.29E-02		1.77E-01	1.92E+00	2.68E-01	2.65E+00	4.98
Trichloroethene	4.80E+00	7.37E-01		2.62E+00	2.85E+01	6.01E+00	4.26E+01	80.30
cis-1,2-Dichloroethene	7.63E-01	1.10E-02		4.17E-01	4.53E+00	1.38E+00	7.09E+00	13.36
Pathway Total	5.90E+00	7.62E-01		3.26E+00	3.54E+01	7.81E+00	5.31E+01	
Fraction of Total	1.11E-01	1.44E-02		6.13E-02	6.66E-01	1.47E-01		

----- LOCATION=SWMU 99A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Aluminum	7.16E-01	1.03E-02				4.83E-01	1.21E+00	1.24
Arsenic	1.21E+00	4.26E-03				8.39E-01	2.06E+00	2.12
Barium	3.24E-01	6.67E-03				2.20E-01	5.51E-01	0.57
Beryllium	3.43E-01	4.93E-02				2.32E-01	6.24E-01	0.64
Chromium	2.80E+00	2.01E-01				1.88E+00	4.88E+00	5.01
Cobalt	1.04E-01	1.87E-04				7.45E-02	1.79E-01	0.18
Copper	1.32E-01	6.33E-04				1.08E-01	2.41E-01	0.25
Iron	5.11E+00	4.91E-02				3.44E+00	8.60E+00	8.84
Lithium	2.46E-01	4.43E-04				1.68E-01	4.15E-01	0.43
Manganese	2.39E+00	8.60E-02				6.29E-01	3.10E+00	3.19
Mercury	9.51E-02	1.96E-03				1.17E-01	2.14E-01	0.22
Nickel	5.08E-01	2.71E-03				3.89E-01	8.99E-01	0.92
Silica								
Sulfate								
Tetraxo-sulfate(1-)								

Table 1.66. Systemic toxicity for the future child resident without lead

----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Vanadium	3.47E+00	5.00E-01				2.34E+00	6.31E+00	6.49
Zinc	4.96E-02	3.57E-04				5.78E-02	1.08E-01	0.11
1,1-Dichloroethene	1.31E-01	1.68E-03		7.18E-02	7.79E-01	2.58E-01	1.24E+00	1.28
Trichloroethene	7.45E+00	1.14E+00		4.07E+00	4.42E+01	9.33E+00	6.62E+01	68.01
bis(2-Ethylhexyl)phthalate	3.16E-02	5.61E-03				2.19E-02	5.91E-02	0.06
cis-1,2-Dichloroethene	4.65E-02	6.70E-04		2.54E-02	2.76E-01	8.40E-02	4.33E-01	0.44
Radon-222								
Technetium-99								
Pathway Total	2.52E+01	2.06E+00		4.16E+00	4.52E+01	2.07E+01	9.73E+01	
Fraction of Total	2.59E-01	2.12E-02		4.28E-02	4.65E-01	2.13E-01		

----- LOCATION-SWMU 99A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Barium	3.93E-02	5.24E-01	1.24E-05			2.69E+00	3.25E+00	18.89
Beryllium	4.41E-03	4.11E-01	9.96E-07			3.01E-01	7.16E-01	4.16
Chromium	4.15E-02	1.93E+00	2.81E-06			2.80E+00	4.78E+00	27.78
Zinc	4.98E-03	2.32E-02				6.78E-01	7.06E-01	4.11
Acenaphthene	7.27E-05	4.38E-04	6.52E-06			5.38E-03	5.90E-03	0.03
Acenaphthylene								
Anthracene	2.61E-05	6.41E-05	6.55E-07			1.91E-03	2.00E-03	0.01
Benzo (a) anthracene								
Benzo (a) pyrene								
Benzo (b) fluoranthene								
Benzo (ghi) perylene								
Benzo (k) fluoranthene								
Chrysene								
Dibenz (a, h) anthracene								
Dibenzofuran	4.07E-04	1.52E-03	1.96E-05			2.79E-02	2.98E-02	0.17
Fluoranthene	2.82E-04	1.69E-03	1.80E-06			1.98E-02	2.18E-02	0.13
Fluorene	7.24E-05	2.70E-04	2.77E-06			5.30E-03	5.65E-03	0.03
Indeno (1,2,3-cd) pyrene								
PCB-1016	4.49E-02	5.59E-02	1.85E-03			3.07E+00	3.17E+00	18.45
PCB-1254	6.35E-02	7.89E-02	2.34E-03			4.33E+00	4.48E+00	26.03
PCB-1260								
Phenanthrene								
Pyrene	4.30E-04	2.59E-03	2.22E-06			3.03E-02	3.34E-02	0.19
Cesium-137								
Neptunium-237								
Technetium-99								
Thorium-234								
Uranium-234								
Uranium-238								
Pathway Total	2.00E-01	3.03E+00	4.24E-03			1.40E+01	1.72E+01	
Fraction of Total	1.16E-02	1.76E-01				8.12E-01		

Table 1.66. Systemic toxicity for the future child resident without lead

----- LOCATION=SWMU 998 MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	Ingestion of vegetables	Chemical Total	% of Total
Barium	4.64E-01	9.54E-03				3.14E-01	7.87E-01	0.38
Chromium	1.36E+00	9.82E-02				9.18E-01	2.38E+00	1.14
Iron	4.94E-01	4.74E-03				3.33E-01	8.32E-01	0.40
Manganese	3.73E-01	1.34E-02				9.81E-02	4.85E-01	0.23
Silica Sulfate								
Tetraxo-sulfate (1-)								
Zinc	1.29E-02	9.26E-05				1.50E-02	2.79E-02	0.01
Trichloroethene	2.29E+01	3.52E+00		1.25E+01	1.36E+02	2.87E+01	2.04E+02	97.83
Radon-222								
Pathway Total	2.56E+01	3.64E+00		1.25E+01	1.36E+02	3.04E+01	2.08E+02	
Fraction of Total	1.23E-01	1.75E-02		6.01E-02	6.53E-01	1.46E-01		

Table 1.67. Systemic toxicity for the future adult recreational user

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	3.05E-04	6.94E-04	9.82E-06	1.01E-03	15.02
Anthracene	2.45E-09	5.46E-09		7.91E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Chrysene					
Di-n-butylphthalate	1.33E-08	3.01E-08		4.34E-08	0.00
Di-n-octylphthalate	1.72E-03	3.99E-03		5.71E-03	84.96
Dibenz(a,h)anthracene					
Fluoranthene	1.18E-07	2.67E-07		3.85E-07	0.01
Indeno(1,2,3-cd)pyrene					
Pyrene	1.70E-07	3.84E-07		5.55E-07	0.01
bis(2-Ethylhexyl)phthalate	1.47E-07	3.32E-07		4.79E-07	0.01
Pathway Total	2.03E-03	4.68E-03	9.82E-06	6.72E-03	
Fraction of Total	3.02E-01	6.97E-01	1.46E-03		

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Beryllium	1.46E-06	7.58E-06	5.74E-08	9.10E-06	0.25
Chromium	5.47E-04	2.81E-03	1.76E-05	3.37E-03	92.49
Vanadium	4.24E-05	2.21E-04	1.40E-06	2.65E-04	7.26
Pathway Total	5.91E-04	3.04E-03	1.90E-05	3.65E-03	
Fraction of Total	1.62E-01	8.33E-01	5.22E-03		

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	6.82E-04	3.10E-04	6.43E-06	9.99E-04	0.01
Lead	4.82E+00	2.15E+00	4.38E-02	7.01E+00	99.94
Zinc	2.35E-03	9.68E-04		3.31E-03	0.05
Pathway Total	4.82E+00	2.15E+00	4.38E-02	7.02E+00	
Fraction of Total	6.87E-01	3.07E-01	6.24E-03		

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Barium	8.14E-07	4.10E-06	1.13E-06	6.04E-06	0.18
Beryllium	3.45E-07	1.80E-06	1.36E-08	2.16E-06	0.06
Chromium	3.24E-05	1.66E-04	1.04E-06	2.00E-04	5.89
Zinc	1.76E-04	8.19E-04		9.94E-04	29.34
Acenaphthene	3.98E-09	1.99E-08		2.39E-08	0.00
Acenaphthylene					
Anthracene	1.73E-09	8.69E-09		1.04E-08	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenz(a,h)anthracene					
Dibenzofuran	4.08E-07	2.11E-06		2.52E-06	0.07

Table 1.67. Systemic toxicity for the future adult recreational user

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Fluoranthene	5.08E-08	2.59E-07		3.10E-07	0.01
Fluorene	4.79E-09	2.41E-08		2.89E-08	0.00
Indeno (1,2,3-cd)pyrene					
PCB-1016	7.10E-05	3.69E-04	4.01E-04	8.41E-04	24.81
PCB-1254	1.25E-04	6.52E-04	5.65E-04	1.34E-03	39.62
PCB-1260					
Phenanthrene					
Pyrene	7.76E-08	3.97E-07		4.74E-07	0.01
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total	4.06E-04	2.01E-03	9.68E-04	3.39E-03	
Fraction of Total	1.20E-01	5.94E-01	2.86E-01		

Table 1.67. Systemic toxicity for the future adult recreational user without lead

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	3.05E-04	6.94E-04	9.82E-06	1.01E-03	15.02
Anthracene	2.45E-09	5.46E-09		7.91E-09	0.00
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Chrysene					
Di-n-butylphthalate	1.33E-08	3.01E-08		4.34E-08	0.00
Di-n-octylphthalate	1.72E-03	3.99E-03		5.71E-03	84.96
Dibenz (a, h) anthracene					
Fluoranthene	1.18E-07	2.67E-07		3.85E-07	0.01
Indeno (1, 2, 3-cd) pyrene					
Pyrene	1.70E-07	3.84E-07		5.55E-07	0.01
bis (2-Ethylhexyl) phthalate	1.47E-07	3.32E-07		4.79E-07	0.01
Pathway Total	2.03E-03	4.68E-03	9.82E-06	6.72E-03	
Fraction of Total	3.02E-01	6.97E-01	1.46E-03		
----- LOCATION=SWMU 193B MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Beryllium	1.46E-06	7.58E-06	5.74E-08	9.10E-06	0.25
Chromium	5.47E-04	2.81E-03	1.76E-05	3.37E-03	92.49
Vanadium	4.24E-05	2.21E-04	1.40E-06	2.65E-04	7.26
Pathway Total	5.91E-04	3.04E-03	1.90E-05	3.65E-03	
Fraction of Total	1.62E-01	8.33E-01	5.22E-03		
----- LOCATION=SWMU 193C MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	6.82E-04	3.10E-04	6.43E-06	9.99E-04	23.16
Zinc	2.35E-03	9.68E-04		3.31E-03	76.84
Pathway Total	3.03E-03	1.28E-03	6.43E-06	4.31E-03	
Fraction of Total	7.02E-01	2.96E-01	1.49E-03		
----- LOCATION=SWMU 99A MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Barium	8.14E-07	4.10E-06	1.13E-06	6.04E-06	0.18
Beryllium	3.45E-07	1.80E-06	1.36E-08	2.16E-06	0.06
Chromium	3.24E-05	1.66E-04	1.04E-06	2.00E-04	5.89
Zinc	1.76E-04	8.19E-04		9.94E-04	29.34
Acenaphthene	3.98E-09	1.99E-08		2.39E-08	0.00
Acenaphthylene					
Anthracene	1.73E-09	8.69E-09		1.04E-08	0.00
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
Dibenzofuran	4.08E-07	2.11E-06		2.52E-06	0.07
Fluoranthene	5.08E-08	2.59E-07		3.10E-07	0.01

Table 1.67. Systemic toxicity for the future adult recreational user without lead

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Fluorene	4.79E-09	2.41E-08		2.89E-08	0.00
Indeno (1,2,3-cd)pyrene					
PCB-1016	7.10E-05	3.69E-04	4.01E-04	8.41E-04	24.81
PCB-1254	1.25E-04	6.52E-04	5.65E-04	1.34E-03	39.62
PCB-1260					
Phenanthrene					
Pyrene	7.76E-08	3.97E-07		4.74E-07	0.01
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total	4.06E-04	2.01E-03	9.68E-04	3.39E-03	
Fraction of Total	1.20E-01	5.94E-01	2.86E-01		

Table 1.68. Systemic toxicity for the future teen recreational user

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	4.97E-04	5.62E-04	8.16E-06	1.07E-03	15.03
Anthracene	3.99E-09	4.41E-09		8.41E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Chrysene					
Di-n-butylphthalate	2.17E-08	2.44E-08		4.60E-08	0.00
Di-n-octylphthalate	2.80E-03	3.23E-03		6.03E-03	84.95
Dibenz(a,h)anthracene					
Fluoranthene	1.92E-07	2.16E-07		4.08E-07	0.01
Indeno(1,2,3-cd)pyrene					
Pyrene	2.77E-07	3.11E-07		5.88E-07	0.01
bis(2-Ethylhexyl)phthalate	2.39E-07	2.69E-07		5.08E-07	0.01
Pathway Total	3.30E-03	3.79E-03	8.16E-06	7.10E-03	
Fraction of Total	4.65E-01	5.34E-01	1.15E-03		

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Beryllium	2.37E-06	6.13E-06	4.77E-08	8.55E-06	0.25
Chromium	8.90E-04	2.27E-03	1.46E-05	3.18E-03	92.50
Vanadium	6.90E-05	1.79E-04	1.16E-06	2.49E-04	7.25
Pathway Total	9.62E-04	2.46E-03	1.58E-05	3.43E-03	
Fraction of Total	2.80E-01	7.15E-01	4.61E-03		

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	1.11E-03	2.51E-04	5.34E-06	1.37E-03	0.01
Lead	7.84E+00	1.74E+00	3.64E-02	9.62E+00	99.94
Zinc	3.82E-03	7.83E-04		4.60E-03	0.05
Pathway Total	7.85E+00	1.74E+00	3.64E-02	9.63E+00	
Fraction of Total	8.15E-01	1.81E-01	3.78E-03		

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Barium	1.32E-06	3.31E-06	9.35E-07	5.57E-06	0.18
Beryllium	5.62E-07	1.45E-06	1.13E-08	2.03E-06	0.07
Chromium	5.27E-05	1.34E-04	8.65E-07	1.88E-04	6.07
Zinc	2.86E-04	6.62E-04		9.48E-04	30.63
Acenaphthene	6.48E-09	1.61E-08		2.26E-08	0.00
Acenaphthylene					
Anthracene	2.81E-09	7.03E-09		9.84E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenz(a,h)anthracene					
Dibenzofuran	6.64E-07	1.71E-06		2.37E-06	0.08

Table 1.68. Systemic toxicity for the future teen recreational user

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Fluoranthene	8.27E-08	2.10E-07		2.93E-07	0.01
Fluorene	7.80E-09	1.95E-08		2.73E-08	0.00
Indeno(1,2,3-cd)pyrene					
PCB-1016	1.16E-04	2.98E-04	3.33E-04	7.47E-04	24.14
PCB-1254	2.04E-04	5.28E-04	4.70E-04	1.20E-03	38.81
PCB-1260					
Phenanthrene					
Pyrene	1.26E-07	3.21E-07		4.47E-07	0.01
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total	6.61E-04	1.63E-03	8.05E-04	3.10E-03	
Fraction of Total	2.14E-01	5.26E-01	2.60E-01		

Table 1.68. Systemic toxicity for the future teen recreational user without lead

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	4.97E-04	5.62E-04	8.16E-06	1.07E-03	15.03
Anthracene	3.99E-09	4.41E-09		8.41E-09	0.00
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Chrysene					
Di-n-butylphthalate	2.17E-08	2.44E-08		4.60E-08	0.00
Di-n-octylphthalate	2.80E-03	3.23E-03		6.03E-03	84.95
Dibenz (a,h) anthracene					
Fluoranthene	1.92E-07	2.16E-07		4.08E-07	0.01
Indeno (1,2,3-cd) pyrene					
Pyrene	2.77E-07	3.11E-07		5.88E-07	0.01
bis (2-Ethylhexyl) phthalate	2.39E-07	2.69E-07		5.08E-07	0.01
Pathway Total	3.30E-03	3.79E-03	8.16E-06	7.10E-03	
Fraction of Total	4.65E-01	5.34E-01	1.15E-03		

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Beryllium	2.37E-06	6.13E-06	4.77E-08	8.55E-06	0.25
Chromium	8.90E-04	2.27E-03	1.46E-05	3.18E-03	92.50
Vanadium	6.90E-05	1.79E-04	1.16E-06	2.49E-04	7.25
Pathway Total	9.62E-04	2.46E-03	1.58E-05	3.43E-03	
Fraction of Total	2.80E-01	7.15E-01	4.61E-03		

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	1.11E-03	2.51E-04	5.34E-06	1.37E-03	22.90
Zinc	3.82E-03	7.83E-04		4.60E-03	77.10
Pathway Total	4.93E-03	1.03E-03	5.34E-06	5.97E-03	
Fraction of Total	8.26E-01	1.73E-01	8.95E-04		

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Barium	1.32E-06	3.31E-06	9.35E-07	5.57E-06	0.18
Beryllium	5.62E-07	1.45E-06	1.13E-08	2.03E-06	0.07
Chromium	5.27E-05	1.34E-04	8.65E-07	1.88E-04	6.07
Zinc	2.86E-04	6.62E-04		9.48E-04	30.63
Acenaphthene	6.48E-09	1.61E-08		2.26E-08	0.00
Acenaphthylene					
Anthracene	2.81E-09	7.03E-09		9.84E-09	0.00
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
Dibenzofuran	6.64E-07	1.71E-06		2.37E-06	0.08
Fluoranthene	8.27E-08	2.10E-07		2.93E-07	0.01

Table 1.68. Systemic toxicity for the future teen recreational user without lead

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Fluorene	7.80E-09	1.95E-08		2.73E-08	0.00
Indeno (1,2,3-cd)pyrene					
PCB-1016	1.16E-04	2.98E-04	3.33E-04	7.47E-04	24.14
PCB-1254	2.04E-04	5.28E-04	4.70E-04	1.20E-03	38.81
PCB-1260					
Phenanthrene					
Pyrene	1.26E-07	3.21E-07		4.47E-07	0.01
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total	6.61E-04	1.63E-03	8.05E-04	3.10E-03	
Fraction of Total	2.14E-01	5.26E-01	2.60E-01		

Table 1.69. Systemic toxicity for the future child recreational user

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	3.22E-04	6.70E-04	9.48E-06	1.00E-03	15.02
Anthracene	2.59E-09	5.27E-09		7.86E-09	0.00
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Chrysene					
Di-n-butylphthalate	1.41E-08	2.91E-08		4.31E-08	0.00
Di-n-octylphthalate	1.82E-03	3.85E-03		5.67E-03	84.96
Dibenz (a,h) anthracene					
Fluoranthene	1.25E-07	2.58E-07		3.82E-07	0.01
Indeno (1,2,3-cd) pyrene					
Pyrene	1.80E-07	3.71E-07		5.51E-07	0.01
bis (2-Ethylhexyl) phthalate	1.55E-07	3.21E-07		4.76E-07	0.01
Pathway Total	2.14E-03	4.52E-03	9.48E-06	6.67E-03	
Fraction of Total	3.21E-01	6.78E-01	1.42E-03		

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Beryllium	1.54E-06	7.32E-06	5.54E-08	8.91E-06	0.25
Chromium	5.78E-04	2.71E-03	1.70E-05	3.31E-03	92.49
Vanadium	4.48E-05	2.13E-04	1.35E-06	2.60E-04	7.26
Pathway Total	6.24E-04	2.93E-03	1.84E-05	3.58E-03	
Fraction of Total	1.74E-01	8.20E-01	5.14E-03		

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	7.21E-04	3.00E-04	6.21E-06	1.03E-03	0.01
Lead	5.09E+00	2.08E+00	4.23E-02	7.21E+00	99.94
Zinc	2.48E-03	9.35E-04		3.41E-03	0.05
Pathway Total	5.09E+00	2.08E+00	4.23E-02	7.21E+00	
Fraction of Total	7.06E-01	2.88E-01	5.86E-03		

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Barium	8.59E-07	3.96E-06	1.09E-06	5.90E-06	0.18
Beryllium	3.65E-07	1.74E-06	1.31E-08	2.11E-06	0.06
Chromium	3.42E-05	1.60E-04	1.00E-06	1.96E-04	5.91
Zinc	1.85E-04	7.90E-04		9.76E-04	29.50
Acenaphthene	4.20E-09	1.92E-08		2.34E-08	0.00
Acenaphthylene					
Anthracene	1.83E-09	8.39E-09		1.02E-08	0.00
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a,h) anthracene					
Dibenzofuran	4.31E-07	2.04E-06		2.47E-06	0.07

Table 1.69. Systemic toxicity for the future child recreational user

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Fluoranthene	5.36E-08	2.50E-07		3.04E-07	0.01
Fluorene	5.06E-09	2.32E-08		2.83E-08	0.00
Indeno(1,2,3-cd)pyrene					
PCB-1016	7.50E-05	3.56E-04	3.87E-04	8.18E-04	24.73
PCB-1254	1.32E-04	6.30E-04	5.45E-04	1.31E-03	39.52
PCB-1260					
Phenanthrene					
Pyrene	8.20E-08	3.83E-07		4.65E-07	0.01
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total	4.29E-04	1.94E-03	9.35E-04	3.31E-03	
Fraction of Total	1.30E-01	5.88E-01	2.83E-01		

Table 1.69. Systemic toxicity for the future child recreational user without lead

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	3.22E-04	6.70E-04	9.48E-06	1.00E-03	15.02
Anthracene	2.59E-09	5.27E-09		7.86E-09	0.00
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Chrysene					
Di-n-butylphthalate	1.41E-08	2.91E-08		4.31E-08	0.00
Di-n-octylphthalate	1.82E-03	3.85E-03		5.67E-03	84.96
Dibenz (a, h) anthracene					
Fluoranthene	1.25E-07	2.58E-07		3.82E-07	0.01
Indeno (1, 2, 3-cd) pyrene					
Pyrene	1.80E-07	3.71E-07		5.51E-07	0.01
bis (2-Ethylhexyl) phthalate	1.55E-07	3.21E-07		4.76E-07	0.01
Pathway Total	2.14E-03	4.52E-03	9.48E-06	6.67E-03	
Fraction of Total	3.21E-01	6.78E-01	1.42E-03		
----- LOCATION=SWMU 193B MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Beryllium	1.54E-06	7.32E-06	5.54E-08	8.91E-06	0.25
Chromium	5.78E-04	2.71E-03	1.70E-05	3.31E-03	92.49
Vanadium	4.48E-05	2.13E-04	1.35E-06	2.60E-04	7.26
Pathway Total	6.24E-04	2.93E-03	1.84E-05	3.58E-03	
Fraction of Total	1.74E-01	8.20E-01	5.14E-03		
----- LOCATION=SWMU 193C MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	7.21E-04	3.00E-04	6.21E-06	1.03E-03	23.12
Zinc	2.48E-03	9.35E-04		3.41E-03	76.88
Pathway Total	3.20E-03	1.23E-03	6.21E-06	4.44E-03	
Fraction of Total	7.21E-01	2.78E-01	1.40E-03		
----- LOCATION=SWMU 99A MEDIA=Surface Soil -----					
Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Barium	8.59E-07	3.96E-06	1.09E-06	5.90E-06	0.18
Beryllium	3.65E-07	1.74E-06	1.31E-08	2.11E-06	0.06
Chromium	3.42E-05	1.60E-04	1.00E-06	1.96E-04	5.91
Zinc	1.85E-04	7.90E-04		9.76E-04	29.50
Acenaphthene	4.20E-09	1.92E-08		2.34E-08	0.00
Acenaphthylene					
Anthracene	1.83E-09	8.39E-09		1.02E-08	0.00
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
Dibenzofuran	4.31E-07	2.04E-06		2.47E-06	0.07
Fluoranthene	5.36E-08	2.50E-07		3.04E-07	0.01

Table 1.69. Systemic toxicity for the future child recreational user without lead

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Fluorene	5.06E-09	2.32E-08		2.83E-08	0.00
Indeno (1,2,3-cd)pyrene					
PCB-1016	7.50E-05	3.56E-04	3.87E-04	8.18E-04	24.73
PCB-1254	1.32E-04	6.30E-04	5.45E-04	1.31E-03	39.52
PCB-1260					
Phenanthrene					
Pyrene	8.20E-08	3.83E-07		4.65E-07	0.01
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total	4.29E-04	1.94E-03	9.35E-04	3.31E-03	
Fraction of Total	1.30E-01	5.88E-01	2.83E-01		

Table 1.70. Systemic toxicity for the future excavation worker

----- LOCATION=AOC 204 MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
1,1-Dichloroethene	1.54E-05	3.46E-05	1.42E-04	1.92E-04	1.47
PCB-1254	4.34E-03	2.59E-03	1.07E-04	7.05E-03	53.98
PCB-1260					
Polychlorinated biphenyl					
Tetrachloroethene	2.81E-04	6.30E-04	8.45E-05	9.96E-04	7.63
Trichloroethene	2.41E-04	3.60E-03	9.72E-04	4.82E-03	36.92
Pathway Total	4.88E-03	6.86E-03	1.31E-03	1.31E-02	
Fraction of Total	3.74E-01	5.26E-01	1.00E-01		

----- LOCATION=SWMU 193A MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	2.14E-02	9.56E-02		1.17E-01	24.86
Beryllium	1.11E-03	4.96E-02	1.68E-07	5.08E-02	10.79
Chromium	1.29E-02	2.89E-01	5.87E-07	3.02E-01	64.26
Anthracene	1.34E-06	1.58E-06	2.26E-08	2.95E-06	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Chrysene					
Di-n-butylphthalate	2.68E-06	2.40E-06	4.35E-09	5.08E-06	0.00
Di-n-octylphthalate	2.09E-05	2.08E-05	4.57E-09	4.16E-05	0.01
Dibenz(a,h)anthracene					
Fluoranthene	2.69E-05	7.78E-05	1.16E-07	1.05E-04	0.02
Indeno(1,2,3-cd)pyrene					
Pyrene	3.08E-05	8.89E-05	1.06E-07	1.20E-04	0.03
bis(2-Ethylhexyl)phthalate	2.95E-05	1.39E-04	1.80E-09	1.69E-04	0.04
Pathway Total	3.55E-02	4.35E-01	1.01E-06	4.71E-01	
Fraction of Total	7.54E-02	9.25E-01	2.15E-06		

----- LOCATION=SWMU 193B MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Beryllium	1.22E-03	5.46E-02	1.85E-07	5.59E-02	3.19
Chromium	4.45E-02	9.96E-01	2.02E-06	1.04E+00	59.37
Vanadium	1.43E-02	6.42E-01		6.57E-01	37.45
Pathway Total	6.00E-02	1.69E+00	2.21E-06	1.75E+00	
Fraction of Total	3.42E-02	9.66E-01	1.26E-06		

----- LOCATION=SWMU 193C MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	1.79E-02	8.03E-02		9.83E-02	0.01
Beryllium	1.19E-03	5.31E-02	1.80E-07	5.43E-02	0.00

Table 1.70. Systemic toxicity for the future excavation worker

----- LOCATION=SWMU 193C MEDIA=Subsurface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Cadmium	7.12E-03	6.38E-02	5.39E-08	7.09E-02	0.00
Chromium	2.49E-02	5.58E-01	1.13E-06	5.83E-01	0.03
Cobalt	5.87E-04	3.29E-04	2.67E-06	9.18E-04	0.00
Iron	1.61E-01	4.80E-01		6.41E-01	0.03
Lead	4.72E+02	1.41E+03	7.15E-08	1.88E+03	99.89
Manganese	2.88E-02	3.22E-01	4.01E-05	3.51E-01	0.02
Vanadium	6.33E-03	2.83E-01		2.90E-01	0.02
Zinc	6.90E-04	1.54E-03		2.23E-03	0.00
Xylene	4.94E-09	1.20E-08	9.48E-09	2.64E-08	0.00
Pathway Total	4.73E+02	1.41E+03	4.42E-05	1.89E+03	
Fraction of Total	2.51E-01	7.49E-01	2.34E-08		

----- LOCATION=SWMU 194 MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	1.88E-02	8.42E-02		1.03E-01	0.00
Beryllium	2.23E-03	9.97E-02	3.37E-07	1.02E-01	0.00
Cadmium	7.89E-03	7.07E-02	5.98E-08	7.86E-02	0.00
Chromium	1.22E-02	2.72E-01	5.52E-07	2.85E-01	0.01
Lead	5.49E+02	1.64E+03	8.32E-08	2.19E+03	99.97
Zinc	5.89E-04	1.32E-03		1.91E-03	0.00
Ethylbenzene	1.12E-07	2.58E-07	9.53E-08	4.66E-07	0.00
Pathway Total	5.49E+02	1.64E+03	1.13E-06	2.19E+03	
Fraction of Total	2.51E-01	7.49E-01	5.15E-10		

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	1.56E-02	7.00E-02		8.57E-02	0.00
Antimony	2.19E-02	4.91E-01		5.13E-01	0.02
Arsenic	3.48E-02	3.80E-02		7.28E-02	0.00
Barium	5.76E-03	3.68E-02	1.22E-06	4.26E-02	0.00
Beryllium	5.31E-04	2.38E-02	8.03E-08	2.43E-02	0.00
Cadmium	2.88E-03	2.58E-02	2.19E-08	2.87E-02	0.00
Chromium	9.74E-03	2.18E-01	4.42E-07	2.28E-01	0.01
Lead	6.28E+02	1.88E+03	9.51E-08	2.50E+03	99.94
Manganese	1.64E-02	1.83E-01	2.28E-05	2.00E-01	0.01
Thallium					
Zinc	1.05E-03	2.36E-03		3.42E-03	0.00
1,1-Dichloroethene	2.32E-06	5.19E-06	2.12E-05	2.87E-05	0.00
1,2,4-Trichlorobenzene	1.42E-04	1.32E-04	7.59E-06	2.82E-04	0.00
1,2-Dichlorobenzene	1.58E-05	4.43E-05	2.24E-05	8.25E-05	0.00
1,3-Dichlorobenzene	4.75E-05	1.33E-04	2.68E-10	1.80E-04	0.00
1,4-Dichlorobenzene			6.32E-06	6.32E-06	0.00
2,4,5-Trichlorophenol	1.86E-05	3.33E-05	3.50E-07	5.23E-05	0.00
2,4,6-Trichlorophenol					
2,4-Dinitrotoluene	7.12E-04	7.51E-04	2.64E-05	1.49E-03	0.00
2,6-Dinitrotoluene	1.42E-03	1.50E-03	6.49E-05	2.99E-03	0.00
2-Chloronaphthalene	1.78E-05	3.19E-05	8.34E-06	5.81E-05	0.00

Table 1.70. Systemic toxicity for the future excavation worker

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
2-Hexanone					
2-Methyl-4,6-dinitrophenol					
2-Methylnaphthalene					
2-Nitroaniline	3.10E-02	5.55E-02	3.62E-02	1.23E-01	0.00
2-Nitrophenol					
3,3'-Dichlorobenzidine					
3-Nitroaniline					
4,4'-DDD					
4,4'-DDE					
4,4'-DDT	2.43E-04	3.11E-04	1.05E-07	5.55E-04	0.00
4-Bromophenyl phenyl ether					
4-Chloro-3-methylphenol					
4-Chlorophenyl phenyl ether					
4-Nitroaniline					
Acenaphthene	1.40E-05	4.04E-05	8.41E-07	5.53E-05	0.00
Acenaphthylene					
Aldrin	1.97E-03	3.53E-03	3.74E-06	5.50E-03	0.00
Anthracene	5.65E-06	6.66E-06	9.50E-08	1.24E-05	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Butyl benzyl phthalate	3.83E-06	5.62E-06	5.99E-09	9.46E-06	0.00
Chrysene					
Di-n-butylphthalate	1.42E-05	1.28E-05	2.31E-08	2.70E-05	0.00
Di-n-octylphthalate	7.12E-05	7.09E-05	1.56E-08	1.42E-04	0.00
Dibenz(a,h)anthracene					
Dibenzofuran	2.13E-04	3.82E-04	6.91E-06	6.02E-04	0.00
Dieldrin	2.43E-03	4.36E-03	1.48E-05	6.81E-03	0.00
Endosulfan I					
Endosulfan II					
Endosulfan Sulfate					
Endrin	4.05E-04	1.82E-02	2.37E-06	1.86E-02	0.00
Endrin Ketone					
Ethylbenzene	1.54E-07	3.57E-07	1.32E-07	6.43E-07	0.00
Fluoranthene	5.54E-05	1.60E-04	2.38E-07	2.16E-04	0.00
Fluorene	2.13E-05	3.81E-05	5.46E-07	5.99E-05	0.00
Heptachlor	1.18E-04	1.47E-04	6.88E-07	2.66E-04	0.00
Heptachlor Epoxide	4.54E-03	5.65E-03	1.16E-05	1.02E-02	0.00
Hexachlorobenzene	1.78E-03	3.19E-03	1.27E-04	5.10E-03	0.00
Hexachlorobutadiene	7.12E-03	1.28E-02	1.30E-03	2.12E-02	0.00
Hexachlorocyclopentadiene	2.04E-04	3.65E-04	6.57E-03	7.14E-03	0.00
Hexachloroethane	1.42E-03	2.55E-03	2.07E-04	4.18E-03	0.00
Indeno(1,2,3-cd)pyrene					
Methoxychlor	1.18E-04	2.12E-04	3.81E-07	3.30E-04	0.00
N-Nitroso-di-n-propylamine					
N-Nitrosodiphenylamine					
Naphthalene	7.12E-05	7.98E-05	3.91E-04	5.42E-04	0.00
PCB-1016	8.41E-03	5.02E-03	2.32E-04	1.37E-02	0.00
PCB-1221					
PCB-1232					
PCB-1242					
PCB-1248					
PCB-1254	2.44E-02	1.46E-02	6.03E-04	3.96E-02	0.00
PCB-1260					
Pentachlorophenol	6.20E-05	5.55E-05	6.86E-07	1.18E-04	0.00
Phenanthrene					
Pyrene	7.57E-05	2.19E-04	2.62E-07	2.95E-04	0.00

Table 1.70. Systemic toxicity for the future excavation worker

----- LOCATION-SWMU 99A MEDIA-Subsurface Soil -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Toxaphene					
Vinyl Chloride					
Xylene	5.61E-09	1.36E-08	1.08E-08	3.00E-08	0.00
alpha-BHC					
alpha-Chlordane					
beta-BHC					
bis(2-Chloroethoxy)methane					
bis(2-Chloroethyl)ether					
bis(2-Chloroisopropyl)ether					
bis(2-Ethylhexyl)phthalate	4.18E-05	1.97E-04	2.56E-09	2.39E-04	0.00
cis-1,3-Dichloropropene					
delta-BHC					
gamma-BHC(Lindane)	1.97E-04	1.82E-04	5.54E-06	3.84E-04	0.00
gamma-Chlordane					
trans-1,3-Dichloropropene					
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total	6.28E+02	1.88E+03	4.59E-02	2.51E+03	
Fraction of Total	2.51E-01	7.49E-01	1.83E-05		

----- LOCATION-SWMU 99B MEDIA-Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	2.45E-02	1.10E-01		1.34E-01	23.55
Arsenic	4.01E-02	4.38E-02		8.38E-02	14.73
Beryllium	1.37E-03	6.14E-02	2.08E-07	6.28E-02	11.03
Chromium	1.23E-02	2.76E-01	5.60E-07	2.88E-01	50.67
Methylene Chloride	3.48E-05	8.19E-05	1.28E-05	1.29E-04	0.02
Pathway Total	7.83E-02	4.91E-01	1.36E-05	5.69E-01	
Fraction of Total	1.37E-01	8.62E-01	2.39E-05		

Table 1.70. Systemic toxicity for the future excavation worker without lead

----- LOCATION=AOC 204 MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
1,1-Dichloroethene	1.54E-05	3.46E-05	1.42E-04	1.92E-04	1.47
PCB-1254	4.34E-03	2.59E-03	1.07E-04	7.05E-03	53.98
PCB-1260					
Polychlorinated biphenyl					
Tetrachloroethene	2.81E-04	6.30E-04	8.45E-05	9.96E-04	7.63
Trichloroethene	2.41E-04	3.60E-03	9.72E-04	4.82E-03	36.92
Pathway Total	4.88E-03	6.86E-03	1.31E-03	1.31E-02	
Fraction of Total	3.74E-01	5.26E-01	1.00E-01		

----- LOCATION=SWMU 193A MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	2.14E-02	9.56E-02		1.17E-01	24.86
Beryllium	1.11E-03	4.96E-02	1.68E-07	5.08E-02	10.79
Chromium	1.29E-02	2.89E-01	5.87E-07	3.02E-01	64.26
Anthracene	1.34E-06	1.58E-06	2.26E-08	2.95E-06	0.00
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Chrysene					
Di-n-butylphthalate	2.68E-06	2.40E-06	4.35E-09	5.08E-06	0.00
Di-n-octylphthalate	2.09E-05	2.08E-05	4.57E-09	4.16E-05	0.01
Dibenz (a, h) anthracene					
Fluoranthene	2.69E-05	7.78E-05	1.16E-07	1.05E-04	0.02
Indeno (1, 2, 3-cd) pyrene					
Pyrene	3.08E-05	8.89E-05	1.06E-07	1.20E-04	0.03
bis (2-Ethylhexyl) phthalate	2.95E-05	1.39E-04	1.80E-09	1.69E-04	0.04
Pathway Total	3.55E-02	4.35E-01	1.01E-06	4.71E-01	
Fraction of Total	7.54E-02	9.25E-01	2.15E-06		

----- LOCATION=SWMU 193B MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Beryllium	1.22E-03	5.46E-02	1.85E-07	5.59E-02	3.19
Chromium	4.45E-02	9.96E-01	2.02E-06	1.04E+00	59.37
Vanadium	1.43E-02	6.42E-01		6.57E-01	37.45
Pathway Total	6.00E-02	1.69E+00	2.21E-06	1.75E+00	
Fraction of Total	3.42E-02	9.66E-01	1.26E-06		

----- LOCATION=SWMU 193C MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	1.79E-02	8.03E-02		9.83E-02	4.70
Beryllium	1.19E-03	5.31E-02	1.80E-07	5.43E-02	2.60

Table 1.70. Systemic toxicity for the future excavation worker without lead

----- LOCATION=SWMU 193C MEDIA=Subsurface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Cadmium	7.12E-03	6.38E-02	5.39E-08	7.09E-02	3.39
Chromium	2.49E-02	5.58E-01	1.13E-06	5.83E-01	27.87
Cobalt	5.87E-04	3.29E-04	2.67E-06	9.18E-04	0.04
Iron	1.61E-01	4.80E-01		6.41E-01	30.66
Manganese	2.88E-02	3.22E-01	4.01E-05	3.51E-01	16.78
Vanadium	6.33E-03	2.83E-01		2.90E-01	13.85
Zinc	6.90E-04	1.54E-03		2.23E-03	0.11
Xylene	4.94E-09	1.20E-08	9.48E-09	2.64E-08	0.00
Pathway Total	2.48E-01	1.84E+00	4.41E-05	2.09E+00	
Fraction of Total	1.19E-01	8.81E-01	2.11E-05		

----- LOCATION=SWMU 194 MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	1.88E-02	8.42E-02		1.03E-01	18.08
Beryllium	2.23E-03	9.97E-02	3.37E-07	1.02E-01	17.88
Cadmium	7.89E-03	7.07E-02	5.98E-08	7.86E-02	13.78
Chromium	1.22E-02	2.72E-01	5.52E-07	2.85E-01	49.92
Zinc	5.89E-04	1.32E-03		1.91E-03	0.34
Ethylbenzene	1.12E-07	2.58E-07	9.53E-08	4.66E-07	0.00
Pathway Total	4.17E-02	5.28E-01	1.04E-06	5.70E-01	
Fraction of Total	7.31E-02	9.27E-01	1.83E-06		

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	1.56E-02	7.00E-02		8.57E-02	5.86
Antimony	2.19E-02	4.91E-01		5.13E-01	35.08
Arsenic	3.48E-02	3.80E-02		7.28E-02	4.98
Barium	5.76E-03	3.68E-02	1.22E-06	4.26E-02	2.92
Beryllium	5.31E-04	2.38E-02	8.03E-08	2.43E-02	1.66
Cadmium	2.88E-03	2.58E-02	2.19E-08	2.87E-02	1.97
Chromium	9.74E-03	2.18E-01	4.42E-07	2.28E-01	15.60
Manganese	1.64E-02	1.83E-01	2.28E-05	2.00E-01	13.66
Thallium					
Zinc	1.05E-03	2.36E-03		3.42E-03	0.23
1,1-Dichloroethene	2.32E-06	5.19E-06	2.12E-05	2.87E-05	0.00
1,2,4-Trichlorobenzene	1.42E-04	1.32E-04	7.59E-06	2.82E-04	0.02
1,2-Dichlorobenzene	1.58E-05	4.43E-05	2.24E-05	8.25E-05	0.01
1,3-Dichlorobenzene	4.75E-05	1.33E-04	2.68E-10	1.80E-04	0.01
1,4-Dichlorobenzene			6.32E-06	6.32E-06	0.00
2,4,5-Trichlorophenol	1.86E-05	3.33E-05	3.50E-07	5.23E-05	0.00
2,4,6-Trichlorophenol					
2,4-Dinitrotoluene	7.12E-04	7.51E-04	2.64E-05	1.49E-03	0.10
2,6-Dinitrotoluene	1.42E-03	1.50E-03	6.49E-05	2.99E-03	0.20
2-Chloronaphthalene	1.78E-05	3.19E-05	8.34E-06	5.81E-05	0.00
2-Hexanone					
2-Methyl-4,6-dinitrophenol					
2-Methylnaphthalene					

Table 1.70. Systemic toxicity for the future excavation worker without lead

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
2-Nitroaniline	3.10E-02	5.55E-02	3.62E-02	1.23E-01	8.40
2-Nitrophenol					
3,3'-Dichlorobenzidine					
3-Nitroaniline					
4,4'-DDD					
4,4'-DDE					
4,4'-DDT	2.43E-04	3.11E-04	1.05E-07	5.55E-04	0.04
4-Bromophenyl phenyl ether					
4-Chloro-3-methylphenol					
4-Chlorophenyl phenyl ether					
4-Nitroaniline					
Acenaphthene	1.40E-05	4.04E-05	8.41E-07	5.53E-05	0.00
Acenaphthylene					
Aldrin	1.97E-03	3.53E-03	3.74E-06	5.50E-03	0.38
Anthracene	5.65E-06	6.66E-06	9.50E-08	1.24E-05	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Butyl benzyl phthalate	3.83E-06	5.62E-06	5.99E-09	9.46E-06	0.00
Chrysene					
Di-n-butylphthalate	1.42E-05	1.28E-05	2.31E-08	2.70E-05	0.00
Di-n-octylphthalate	7.12E-05	7.09E-05	1.56E-08	1.42E-04	0.01
Dibenz(a,h)anthracene					
Dibenzofuran	2.13E-04	3.82E-04	6.91E-06	6.02E-04	0.04
Dieldrin	2.43E-03	4.36E-03	1.48E-05	6.81E-03	0.47
Endosulfan I					
Endosulfan II					
Endosulfan Sulfate					
Endrin	4.05E-04	1.82E-02	2.37E-06	1.86E-02	1.27
Endrin Ketone					
Ethylbenzene	1.54E-07	3.57E-07	1.32E-07	6.43E-07	0.00
Fluoranthene	5.54E-05	1.60E-04	2.38E-07	2.16E-04	0.01
Fluorene	2.13E-05	3.81E-05	5.46E-07	5.99E-05	0.00
Heptachlor	1.18E-04	1.47E-04	6.88E-07	2.66E-04	0.02
Heptachlor Epoxide	4.54E-03	5.65E-03	1.16E-05	1.02E-02	0.70
Hexachlorobenzene	1.78E-03	3.19E-03	1.27E-04	5.10E-03	0.35
Hexachlorobutadiene	7.12E-03	1.28E-02	1.30E-03	2.12E-02	1.45
Hexachlorocyclopentadiene	2.04E-04	3.65E-04	6.57E-03	7.14E-03	0.49
Hexachloroethane	1.42E-03	2.55E-03	2.07E-04	4.18E-03	0.29
Indeno(1,2,3-cd)pyrene					
Methoxychlor	1.18E-04	2.12E-04	3.81E-07	3.30E-04	0.02
N-Nitroso-di-n-propylamine					
N-Nitrosodiphenylamine					
Naphthalene	7.12E-05	7.98E-05	3.91E-04	5.42E-04	0.04
PCB-1016	8.41E-03	5.02E-03	2.32E-04	1.37E-02	0.93
PCB-1221					
PCB-1232					
PCB-1242					
PCB-1248					
PCB-1254	2.44E-02	1.46E-02	6.03E-04	3.96E-02	2.71
PCB-1260					
Pentachlorophenol	6.20E-05	5.55E-05	6.86E-07	1.18E-04	0.01
Phenanthrene					
Pyrene	7.57E-05	2.19E-04	2.62E-07	2.95E-04	0.02
Toxaphene					
Vinyl Chloride					
Xylene	5.61E-09	1.36E-08	1.08E-08	3.00E-08	0.00

Table 1.70. Systemic toxicity for the future excavation worker without lead

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
alpha-BHC					
alpha-Chlordane					
beta-BHC					
bis(2-Chloroethoxy)methane					
bis(2-Chloroethyl) ether					
bis(2-Chloroisopropyl) ether					
bis(2-Ethylhexyl)phthalate	4.18E-05	1.97E-04	2.56E-09	2.39E-04	0.02
cis-1,3-Dichloropropene					
delta-BHC					
gamma-BHC (Lindane)	1.97E-04	1.82E-04	5.54E-06	3.84E-04	0.03
gamma-Chlordane					
trans-1,3-Dichloropropene					
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total	1.96E-01	1.22E+00	4.59E-02	1.46E+00	
Fraction of Total	1.34E-01	8.34E-01	3.14E-02		

----- LOCATION=SWMU 99B MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	2.45E-02	1.10E-01		1.34E-01	23.55
Arsenic	4.01E-02	4.38E-02		8.38E-02	14.73
Beryllium	1.37E-03	6.14E-02	2.08E-07	6.28E-02	11.03
Chromium	1.23E-02	2.76E-01	5.60E-07	2.88E-01	50.67
Methylene Chloride	3.48E-05	8.19E-05	1.28E-05	1.29E-04	0.02
Pathway Total	7.83E-02	4.91E-01	1.36E-05	5.69E-01	
Fraction of Total	1.37E-01	8.62E-01	2.39E-05		

Table 1.71 Excess lifetime cancer risks for the future industrial worker

----- LOCATION-AOC 204 MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
1,1-Dichloroethane							
1,1-Dichloroethene	8.4E-05	2.7E-06		9.2E-05		1.8E-04	13.42
PCB-1254	3.5E-05	4.9E-05				8.4E-05	6.30
PCB-1260	3.5E-05	1.5E-04				1.9E-04	13.93
Polychlorinated biphenyl	2.4E-04	3.3E-04				5.7E-04	42.87
Tetrachloroethene	1.2E-04	1.6E-04		2.4E-06		2.8E-04	20.73
Trichloroethene	2.1E-05	8.2E-06		6.3E-06		3.6E-05	2.69
Vinyl Chloride	6.6E-07	1.8E-08		5.7E-08		7.4E-07	0.06
cis-1,2-Dichloroethene							
Pathway Total	5.3E-04	7.0E-04		1.0E-04		1.3E-03	
Fraction of Total	4.0E-01	5.3E-01		7.6E-02			

----- LOCATION-SWMU 193A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Iron							
Tetraoxo-sulfate(1-)							
Trichloroethene	1.4E-07	5.5E-08		4.3E-08		2.4E-07	22.43
cis-1,2-Dichloroethene							
Technetium-99	3.2E-07					3.2E-07	29.99
Uranium-238	5.1E-07					5.1E-07	47.58
Pathway Total	9.8E-07	5.5E-08		4.3E-08		1.1E-06	
Fraction of Total	9.1E-01	5.2E-02		4.0E-02			

----- LOCATION-SWMU 193A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Ammonia							
Fluoride							
Iron							
Silica							
Tetraoxo-sulfate(1-)							
Zinc							
1,1-Dichloroethane	4.2E-07	1.4E-08		4.6E-07		8.9E-07	3.38
Pentachlorophenol	3.6E-06	8.4E-06				1.2E-05	45.25
Trichloroethene	6.5E-06	2.5E-06		1.9E-06		1.1E-05	41.52
bis(2-Ethylhexyl)phthalate	6.3E-07	2.8E-07				9.1E-07	3.47
cis-1,2-Dichloroethene							
Technetium-99	1.7E-06					1.7E-06	6.39
Pathway Total	1.3E-05	1.1E-05		2.4E-06		2.6E-05	
Fraction of Total	4.8E-01	4.2E-01		9.1E-02			

Table 1.71 Excess lifetime cancer risks for the future industrial worker

----- LOCATION-SWMU 193A MEDIA-Surface Soil -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Chromium			3.7E-10			3.7E-10	0.00
Anthracene							
Benz (a) anthracene	2.3E-08	6.4E-07	1.3E-10			6.6E-07	4.29
Benzo (a) pyrene	3.2E-07	8.8E-06	6.9E-10			9.2E-06	59.55
Benzo (b) fluoranthene	6.5E-09	1.8E-07	7.5E-11			1.9E-07	1.22
Benzo (ghi) perylene							
Chrysene	2.2E-10	6.0E-09	4.2E-12			6.2E-09	0.04
Di-n-butylphthalate							
Di-n-octylphthalate							
Dibenz (a,h) anthracene	1.7E-07	4.6E-06	8.5E-11			4.8E-06	30.97
Fluoranthene							
Indeno (1,2,3-cd) pyrene	2.0E-08	5.7E-07	1.9E-11			5.9E-07	3.81
Pyrene							
bis(2-Ethylhexyl)phthalate	4.2E-10	1.9E-08				1.9E-08	0.12
Pathway Total	5.4E-07	1.5E-05	1.4E-09			1.5E-05	
Fraction of Total	3.5E-02	9.7E-01	8.9E-05				
----- LOCATION-SWMU 193B MEDIA-McNairy Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Trichloroethene	5.0E-07	1.9E-07		1.5E-07		8.4E-07	100.0
cis-1,2-Dichloroethene							
Pathway Total	5.0E-07	1.9E-07		1.5E-07		8.4E-07	
Fraction of Total	5.9E-01	2.3E-01		1.8E-01			
----- LOCATION-SWMU 193B MEDIA-RGA Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
1,1-Dichloroethene	3.4E-06	1.1E-07		3.7E-06		7.2E-06	16.42
Acetone							
Carbon Tetrachloride	2.5E-06	3.1E-07		5.6E-07		3.4E-06	7.66
Di-n-butylphthalate							
Trichloroethene	1.9E-05	7.4E-06		5.7E-06		3.2E-05	73.75
bis(2-Ethylhexyl)phthalate	4.9E-07	2.2E-07				7.1E-07	1.63
cis-1,2-Dichloroethene							
Technetium-99	2.4E-07					2.4E-07	0.54
Pathway Total	2.6E-05	8.1E-06		1.0E-05		4.4E-05	
Fraction of Total	5.9E-01	1.8E-01		2.3E-01			
----- LOCATION-SWMU 193B MEDIA-Surface Soil -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Beryllium	1.2E-06	5.1E-04	9.6E-12			5.1E-04	100.0
Chromium			2.7E-09			2.7E-09	0.00
Vanadium							

Table 1.71 Excess lifetime cancer risks for the future industrial worker

----- LOCATION-SWMU 193B MEDIA-Surface Soil -----							
(continued)							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Pathway Total	1.2E-06	5.1E-04	2.7E-09			5.1E-04	
Fraction of Total	2.3E-03	1.0E+00	5.3E-06				
----- LOCATION-SWMU 193C MEDIA-McNairy Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Aluminum							
Antimony							
Arsenic	6.4E-05	5.7E-07				6.5E-05	15.24
Barium							
Beryllium	1.7E-04	6.1E-05				2.3E-04	53.65
Cadmium							
Chromium							
Cobalt							
Iron							
Lead							
Manganese							
Mercury							
Molybdenum							
Nickel							
Silica							
Silver							
Tetraoxo-sulfate(1-)							
Thallium							
Uranium							
Vanadium							
Zinc							
1,1,2-Trichloroethane	5.0E-07	1.9E-08		2.7E-07		7.9E-07	0.19
1,1-Dichloroethene	5.2E-06	1.7E-07		5.7E-06		1.1E-05	2.63
1,2-Dichloroethane	8.0E-07	1.5E-08		4.3E-07		1.2E-06	0.29
Benzene	2.5E-07	2.0E-08		1.4E-07		4.1E-07	0.10
Bromodichloromethane	5.4E-07	1.2E-08				5.5E-07	0.13
Carbon Tetrachloride	1.1E-06	1.4E-07		2.5E-07		1.5E-06	0.36
Chloroform	5.3E-08	8.6E-09		3.9E-07		4.5E-07	0.11
Ethylbenzene							
Polychlorinated biphenyl	1.4E-07	2.0E-07				3.3E-07	0.08
Tetrachloroethene	4.5E-07	6.1E-07		9.5E-09		1.1E-06	0.25
Trichloroethene	4.7E-08	1.8E-08		1.4E-08		8.0E-08	0.02
Vinyl Chloride	6.1E-05	1.6E-06		5.3E-06		6.8E-05	16.03
Xylene							
cis-1,2-Dichloroethene							
trans-1,2-Dichloroethene							
Radon-222				4.6E-05		4.6E-05	10.92
Pathway Total	3.0E-04	6.4E-05		5.9E-05		4.2E-04	
Fraction of Total	7.1E-01	1.5E-01		1.4E-01			

Table 1.71 Excess lifetime cancer risks for the future industrial worker

----- LOCATION=SWMU 193C MEDIA=RGA Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
1,2-Dichloroethene							
Trichloroethene	6.2E-06	2.4E-06		1.9E-06		1.0E-05	100.0
Pathway Total	6.2E-06	2.4E-06		1.9E-06		1.0E-05	
Fraction of Total	5.9E-01	2.3E-01		1.8E-01			

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Chromium			1.7E-10			1.7E-10	100.0
Lead							
Zinc							
Pathway Total			1.7E-10			1.7E-10	
Fraction of Total			1.0E+00				

----- LOCATION=SWMU 99A MEDIA=McNairy Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
1,1-Dichloroethene	2.2E-05	7.0E-07		2.4E-05		4.6E-05	60.7
Carbon Tetrachloride	1.3E-06	1.6E-07		2.8E-07		1.7E-06	2.24
Trichloroethene	1.7E-05	6.5E-06		5.0E-06		2.8E-05	36.98
cis-1,2-Dichloroethene							
Pathway Total	4.0E-05	7.3E-06		2.9E-05		7.6E-05	
Fraction of Total	5.2E-01	9.6E-02		3.8E-01			

----- LOCATION=SWMU 99A MEDIA=RGA Groundwater -----							
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Aluminum							
Arsenic	2.9E-05	2.6E-07				2.9E-05	5.19
Barium							
Beryllium	1.6E-04	5.7E-05				2.1E-04	37.83
Chromium							
Cobalt							
Copper							
Iron							
Lead							
Lithium							
Manganese							
Mercury							
Nickel							
Silica							
Sulfate							
Tetraoxo-sulfate(1-)							
Vanadium							
Zinc							

Table 1.71 Excess lifetime cancer risks for the future industrial worker

----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
1,1-Dichloroethene	3.7E-05	1.2E-06		4.1E-05		8.0E-05	14.20
Trichloroethene	2.6E-05	1.0E-05		7.7E-06		4.4E-05	7.80
bis (2-Ethylhexyl) phthalate	4.7E-07	2.1E-07				6.8E-07	0.12
cis-1,2-Dichloroethene							
Radon-222				2.0E-04		2.0E-04	34.79
Technetium-99	3.9E-07					3.9E-07	0.07
Pathway Total	2.5E-04	6.8E-05		2.4E-04		5.6E-04	
Fraction of Total	4.4E-01	1.2E-01		4.3E-01			

----- LOCATION-SWMU 99A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Barium							
Beryllium	5.0E-07	2.2E-04	4.1E-12			2.2E-04	69.57
Chromium			2.9E-10			2.9E-10	0.00
Zinc							
Acenaphthene							
Acenaphthylene							
Anthracene							
Benz (a) anthracene	1.0E-07	2.8E-06	5.7E-10			2.9E-06	0.94
Benzo (a) pyrene	6.2E-07	1.7E-05	1.4E-09			1.8E-05	5.78
Benzo (b) fluoranthene	1.5E-07	4.1E-06	1.7E-09			4.2E-06	1.36
Benzo (ghi) perylene							
Benzo (k) fluoranthene	7.3E-09	2.0E-07	9.9E-12			2.1E-07	0.07
Chrysene	1.7E-09	4.6E-08	3.3E-11			4.8E-08	0.02
Dibenz (a,h) anthracene	3.2E-07	8.9E-06	1.6E-10			9.2E-06	2.96
Dibenzofuran							
Fluoranthene							
Fluorene							
Indeno (1,2,3-cd) pyrene	1.0E-07	2.8E-06	9.5E-11			2.9E-06	0.95
PCB-1016	8.3E-08	4.8E-07	2.2E-08			5.8E-07	0.19
PCB-1254	3.4E-08	1.9E-07	8.0E-09			2.3E-07	0.08
PCB-1260	6.5E-08	3.7E-07	1.8E-08			4.6E-07	0.15
Phenanthrene							
Pyrene							
Cesium-137	1.0E-08		7.9E-14		1.0E-05	1.0E-05	3.25
Neptunium-237	1.2E-06		1.7E-09		2.7E-05	2.8E-05	9.09
Technetium-99	2.0E-07		5.2E-12		1.3E-09	2.0E-07	0.07
Thorium-234	1.3E-07		1.6E-12		3.4E-07	4.7E-07	0.15
Uranium-234	2.3E-07		8.9E-10		1.6E-09	2.3E-07	0.07
Uranium-238	1.0E-06		2.5E-09		1.6E-05	1.7E-05	5.32
Pathway Total	4.8E-06	2.5E-04	5.8E-08		5.3E-05	3.1E-04	
Fraction of Total	1.5E-02	8.1E-01	1.9E-04		1.7E-01		

----- LOCATION-SWMU 99B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Barium							
Chromium							

Table 1.71 Excess lifetime cancer risks for the future industrial worker

----- LOCATION=SWMU 99B MEDIA=RGA Groundwater -----
 (continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	External exposure	Chemical Total	% of Total
Iron							
Manganese							
Silica							
Sulfate							
Tetraoxo-sulfate(1-)							
Zinc							
Trichloroethene	8.0E-05	3.1E-05		2.4E-05		1.3E-04	52.58
Radon-222				1.2E-04		1.2E-04	47.42
Pathway Total	8.0E-05	3.1E-05		1.5E-04		2.6E-04	
Fraction of Total	3.1E-01	1.2E-01		5.7E-01			

Table 1.72 Excess lifetime cancer risks for the future resident

----- LOCATION-AOC 204 MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethane									
1,1-Dichloroethene	4.6E-04	6.9E-06		3.2E-04	3.5E-03		7.5E-04	5.0E-03	33.49
PCB-1254	1.9E-04	1.2E-04					5.4E-04	8.5E-04	5.66
PCB-1260	1.9E-04	3.8E-04					5.3E-04	1.1E-03	7.35
Polychlorinated biphenyl	1.3E-03	8.5E-04					3.7E-03	5.8E-03	38.48
Tetrachloroethene	6.3E-04	4.0E-04		8.6E-06	9.4E-05		5.9E-04	1.7E-03	11.46
Trichloroethene	1.2E-04	2.1E-05		2.2E-05	2.4E-04		1.2E-04	5.2E-04	3.46
Vinyl Chloride	3.6E-06	4.5E-08		2.0E-07	2.2E-06		8.7E-06	1.5E-05	0.10
cis-1,2-Dichloroethene									
Pathway Total	2.9E-03	1.8E-03		3.5E-04	3.8E-03		6.2E-03	1.5E-02	
Fraction of Total	1.9E-01	1.2E-01		2.4E-02	2.6E-01		4.1E-01		

----- LOCATION-SWMU 193A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
Iron									
Tetraoxo-sulfate(1-)									
Trichloroethene	7.8E-07	1.4E-07		1.5E-07	1.6E-06		8.1E-07	3.5E-06	0.85
cis-1,2-Dichloroethene									
Technetium-99	1.3E-06						4.1E-04	4.1E-04	98.37
Uranium-238	2.1E-06						1.1E-06	3.2E-06	0.78
Pathway Total	4.2E-06	1.4E-07		1.5E-07	1.6E-06		4.1E-04	4.1E-04	
Fraction of Total	1.0E-02	3.4E-04		3.6E-04	3.9E-03		9.9E-01		

----- LOCATION-SWMU 193A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
Ammonia									
Fluoride									
Iron									
Silica									
Tetraoxo-sulfate(1-)									
Zinc									
1,1-Dichloroethane	2.3E-06	3.5E-08		1.6E-06	1.8E-05		3.7E-06	2.5E-05	1.06
Pentachlorophenol	1.9E-05	2.1E-05					1.1E-05	5.2E-05	2.17
Trichloroethene	3.5E-05	6.4E-06		6.8E-06	7.4E-05		3.7E-05	1.6E-04	6.72
bis(2-Ethylhexyl)phthalate	3.4E-06	7.2E-07					2.0E-06	6.1E-06	0.26
cis-1,2-Dichloroethene									
Technetium-99	7.0E-06						2.1E-03	2.1E-03	89.79
Pathway Total	6.7E-05	2.9E-05		8.4E-06	9.2E-05		2.2E-03	2.4E-03	
Fraction of Total	2.8E-02	1.2E-02		3.6E-03	3.9E-02		9.2E-01		

Table 1.72 Excess lifetime cancer risks for the future resident

----- LOCATION-SWMU 193A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
Chromium			2.5E-09					2.5E-09	0.00
Anthracene									
Benz (a)anthracene	2.4E-07	1.9E-06	8.7E-10				2.9E-05	3.1E-05	4.32
Benzo (a) pyrene	3.3E-06	2.6E-05	4.6E-09				4.0E-04	4.2E-04	59.66
Benzo (b) fluoranthene	6.7E-08	5.3E-07	5.0E-10				8.1E-06	8.7E-06	1.22
Benzo (ghi) perylene									
Chrysene	2.2E-09	1.8E-08	2.8E-11				2.7E-07	2.9E-07	0.04
Di-n-butylphthalate									
Di-n-octylphthalate									
Dibenz (a, h) anthracene	1.7E-06	1.4E-05	5.7E-10				2.0E-04	2.2E-04	30.87
Fluoranthene									
Indeno (1,2,3-cd) pyrene	2.1E-07	1.7E-06	1.3E-10				2.5E-05	2.7E-05	3.80
Pyrene									
bis (2-Ethylhexyl) phthalate	4.3E-09	5.6E-08					5.3E-07	5.9E-07	0.08
Pathway Total	5.5E-06	4.4E-05	9.2E-09				6.6E-04	7.1E-04	
Fraction of Total	7.7E-03	6.2E-02	1.3E-05				9.3E-01		

----- LOCATION-SWMU 193B MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
Trichloroethene	2.7E-06	4.9E-07		5.2E-07	5.7E-06		2.8E-06	1.2E-05	100.
cis-1,2-Dichloroethene									
Pathway Total	2.7E-06	4.9E-07		5.2E-07	5.7E-06		2.8E-06	1.2E-05	
Fraction of Total	2.2E-01	4.0E-02		4.3E-02	4.6E-01		2.3E-01		

----- LOCATION-SWMU 193B MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethene	1.8E-05	2.8E-07		1.3E-05	1.4E-04		3.0E-05	2.0E-04	19.76
Acetone									
Carbon Tetrachloride	1.4E-05	7.8E-07		2.0E-06	2.1E-05		1.1E-05	4.9E-05	4.75
Di-n-butylphthalate									
Trichloroethene	1.0E-04	1.9E-05		2.0E-05	2.2E-04		1.1E-04	4.7E-04	45.72
bis (2-Ethylhexyl) phthalate	2.7E-06	5.6E-07					1.6E-06	4.8E-06	0.46
cis-1,2-Dichloroethene									
Technetium-99	9.9E-07						3.0E-04	3.0E-04	29.31
Pathway Total	1.4E-04	2.1E-05		3.5E-05	3.8E-04		4.5E-04	1.0E-03	
Fraction of Total	1.4E-01	2.0E-02		3.4E-02	3.7E-01		4.4E-01		

Table 1.72 Excess lifetime cancer risks for the future resident

----- LOCATION-SWMU 193B MEDIA-Surface Soil -----									
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
Beryllium	1.2E-05	1.5E-03	6.4E-11				1.5E-03	3.0E-03	100.0
Chromium			1.8E-08					1.8E-08	0.00
Vanadium									
Pathway Total	1.2E-05	1.5E-03	1.8E-08				1.5E-03	3.0E-03	
Fraction of Total	4.1E-03	5.0E-01	6.1E-06				4.9E-01		
----- LOCATION-SWMU 193C MEDIA-McNairy Groundwater -----									
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
Aluminum									
Antimony									
Arsenic	3.5E-04	1.4E-06					2.0E-04	5.5E-04	13.67
Barium									
Beryllium	9.1E-04	1.5E-04					5.1E-04	1.6E-03	39.10
Cadmium									
Chromium									
Cobalt									
Iron									
Lead									
Manganese									
Mercury									
Molybdenum									
Nickel									
Silica									
Silver									
Tetraoxo-sulfate (1-)									
Thallium									
Uranium									
Vanadium									
Zinc									
1,1,2-Trichloroethane	2.7E-06	4.8E-08		9.6E-07	1.0E-05		3.8E-06	1.8E-05	0.44
1,1-Dichloroethane	2.8E-05	4.3E-07		2.0E-05	2.2E-04		4.7E-05	3.2E-04	7.83
1,2-Dichloroethane	4.3E-06	3.9E-08		1.5E-06	1.7E-05		9.4E-06	3.2E-05	0.79
Benzene	1.4E-06	5.1E-08		4.9E-07	5.3E-06		1.8E-06	9.0E-06	0.22
Bromodichloromethane	2.9E-06	3.0E-08					3.8E-06	6.8E-06	0.17
Carbon Tetrachloride	6.2E-06	3.6E-07		8.9E-07	9.7E-06		5.2E-06	2.2E-05	0.55
Chloroform	2.9E-07	2.2E-08		1.4E-06	1.5E-05		4.0E-07	1.7E-05	0.42
Ethylbenzene									
Polychlorinated biphenyl	7.6E-07	5.0E-07					2.2E-06	3.4E-06	0.08
Tetrachloroethane	2.5E-06	1.6E-06		3.4E-08	3.7E-07		2.3E-06	6.7E-06	0.17
Trichloroethane	2.6E-07	4.7E-08		5.0E-08	5.4E-07		2.7E-07	1.2E-06	0.03
Vinyl Chloride	3.3E-04	4.1E-06		1.9E-05	2.0E-04		8.0E-04	1.4E-03	33.66
Xylene									
cis-1,2-Dichloroethane									
trans-1,2-Dichloroethane									
Radon-222				1.0E-04	1.1E-05			1.1E-04	2.85
Pathway Total	1.6E-03	1.6E-04		1.5E-04	4.9E-04		1.6E-03	4.0E-03	
Fraction of Total	4.1E-01	4.0E-02		3.7E-02	1.2E-01		3.9E-01		

Table 1.72 Excess lifetime cancer risks for the future resident

----- LOCATION-SWMU 193C MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
1,2-Dichloroethene									
Trichloroethene	3.4E-05	6.1E-06		6.5E-06	7.1E-05		3.5E-05	1.5E-04	100.0
Pathway Total	3.4E-05	6.1E-06		6.5E-06	7.1E-05		3.5E-05	1.5E-04	
Fraction of Total	2.2E-01	4.0E-02		4.3E-02	4.6E-01		2.3E-01		

----- LOCATION-SWMU 193C MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
Chromium			1.1E-09					1.1E-09	100.0
Lead									
Zinc									
Pathway Total			1.1E-09					1.1E-09	
Fraction of Total			1.0E+00						

----- LOCATION-SWMU 99A MEDIA-McNairy Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
1,1-Dichloroethene	1.2E-04	1.8E-06		8.4E-05	9.1E-04		1.9E-04	1.3E-03	75.05
Carbon Tetrachloride	6.9E-06	4.0E-07		1.0E-06	1.1E-05		5.9E-06	2.5E-05	1.43
Trichloroethene	9.1E-05	1.7E-05		1.8E-05	1.9E-04		9.5E-05	4.1E-04	23.52
cis-1,2-Dichloroethene									
Pathway Total	2.2E-04	1.9E-05		1.0E-04	1.1E-03		3.0E-04	1.7E-03	
Fraction of Total	1.2E-01	1.1E-02		5.9E-02	6.4E-01		1.7E-01		

----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
Aluminum									
Arsenic	1.6E-04	6.5E-07					9.1E-05	2.5E-04	4.43
Barium									
Beryllium	8.5E-04	1.4E-04					4.8E-04	1.5E-03	26.25
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Lithium									
Manganese									
Mercury									
Nickel									
Silica									

Table 1.72 Excess lifetime cancer risks for the future resident

----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
Sulfate									
Tetraxo-sulfate(1-)									
Vanadium									
Zinc									
1,1-Dichloroethene	2.0E-04	3.1E-06		1.4E-04	1.6E-03		3.3E-04	2.3E-03	40.28
Trichloroethene	1.4E-04	2.6E-05		2.7E-05	3.0E-04		1.5E-04	6.4E-04	11.40
bis (2-Ethylhexyl) phthalate	2.5E-06	5.3E-07					1.5E-06	4.5E-06	0.08
cis-1,2-Dichloroethene									
Radon-222				4.4E-04	4.7E-05			4.8E-04	8.65
Technetium-99	1.6E-06						5.0E-04	5.0E-04	8.91
Pathway Total	1.4E-03	1.7E-04		6.1E-04	1.9E-03		1.6E-03	5.6E-03	
Fraction of Total	2.4E-01	3.1E-02		1.1E-01	3.4E-01		2.8E-01		

----- LOCATION-SWMU 99A MEDIA-Surface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
Barium									
Beryllium	5.2E-06	6.4E-04	2.7E-11				6.2E-04	1.3E-03	0.85
Chromium			1.9E-09					1.9E-09	0.00
Zinc									
Acenaphthene									
Acenaphthylene									
Anthracene									
Benz (a) anthracene	1.0E-06	8.3E-06	3.8E-09				1.3E-04	1.4E-04	0.09
Benzo (a) pyrene	6.4E-06	5.1E-05	9.1E-09				7.7E-04	8.3E-04	0.56
Benzo (b) fluoranthene	1.5E-06	1.2E-05	1.1E-08				1.8E-04	2.0E-04	0.13
Benzo (ghi) perylene									
Benzo (k) fluoranthene	7.5E-08	6.0E-07	6.6E-11				9.0E-06	9.7E-06	0.01
Chrysene	1.7E-08	1.4E-07	2.2E-10				2.1E-06	2.2E-06	0.00
Dibenz (a,b) anthracene	3.3E-06	2.6E-05	1.1E-09				3.9E-04	4.2E-04	0.29
Dibenzofuran									
Fluoranthene									
Fluorene									
Indeno (1,2,3-cd) pyrene	1.1E-06	8.4E-06	6.4E-10				1.3E-04	1.4E-04	0.09
PCB-1016	8.6E-07	1.4E-06	1.5E-07				1.0E-04	1.1E-04	0.07
PCB-1254	3.5E-07	5.7E-07	5.3E-08				4.2E-05	4.3E-05	0.03
PCB-1260	6.7E-07	1.1E-06	1.2E-07				8.1E-05	8.2E-05	0.06
Phenanthrene									
Pyrene									
Cesium-137	5.4E-08		1.8E-13			6.8E-05	9.8E-06	7.8E-05	0.05
Neptunium-237	6.2E-06		3.8E-09			1.8E-04	1.1E-03	1.3E-03	0.85
Technetium-99	1.0E-06		1.2E-11			8.8E-09	1.3E-01	1.3E-01	96.03
Thorium-234	6.7E-07		3.6E-12			2.3E-06	1.1E-04	1.2E-04	0.08
Uranium-234	1.2E-06		2.0E-09			1.1E-08	2.0E-04	2.0E-04	0.14
Uranium-238	5.2E-06		5.6E-09			1.0E-04	8.9E-04	1.0E-03	0.67
Pathway Total	3.5E-05	7.5E-04	3.6E-07			3.6E-04	1.4E-01	1.4E-01	
Fraction of Total	2.3E-04	5.0E-03	2.5E-06			2.4E-03	9.9E-01		

Table 1.72 Excess lifetime cancer risks for the future resident

----- LOCATION=SWMU 99B MEDIA=RGA Groundwater -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	Inh. of volatiles while showering	Inh. of volatiles from household use	External exposure	Ingestion of vegetables	Chemical Total	% of Total
Barium									
Chromium									
Iron									
Manganese									
Silica									
Sulfate									
Tetraoxo-sulfate (1-)									
Zinc									
Trichloroethene	4.3E-04	7.9E-05		8.4E-05	9.1E-04		4.5E-04	2.0E-03	86.70
Radon-222				2.7E-04	2.9E-05			3.0E-04	13.30
Pathway Total	4.3E-04	7.9E-05		3.6E-04	9.4E-04		4.5E-04	2.3E-03	
Fraction of Total	1.9E-01	3.5E-02		1.6E-01	4.2E-01		2.0E-01		

Table 1.73 Excess lifetime cancer risks for the future recreational user

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium					
Anthracene					
Benz(a)anthracene	8.7E-09	1.6E-08		2.4E-08	0.68
Benzo(a)pyrene	3.0E-07	5.3E-07	4.2E-07	1.2E-06	34.97
Benzo(b)fluoranthene	6.0E-09	1.1E-08		1.7E-08	0.47
Benzo(ghi)perylene					
Chrysene	8.2E-11	1.5E-10		2.3E-10	0.01
Di-n-butylphthalate					
Di-n-octylphthalate					
Dibenz(a,h)anthracene	7.5E-07	1.4E-06		2.1E-06	59.24
Fluoranthene					
Indeno(1,2,3-cd)pyrene	5.9E-08	1.1E-07		1.7E-07	4.62
Pyrene					
bis(2-Ethylhexyl)phthalate	2.8E-11	5.0E-11		7.8E-11	0.00
Pathway Total	1.1E-06	2.0E-06	4.2E-07	3.6E-06	
Fraction of Total	3.1E-01	5.7E-01	1.2E-01		

----- LOCATION=SWMU 193B MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Beryllium	8.6E-09	3.5E-08	2.7E-10	4.4E-08	100.0
Chromium					
Vanadium					
Pathway Total	8.6E-09	3.5E-08	2.7E-10	4.4E-08	
Fraction of Total	2.0E-01	8.0E-01	6.1E-03		

----- LOCATION=SWMU 193C MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium					
Lead					
Zinc					
Pathway Total					
Fraction of Total					

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Barium					
Beryllium	2.0E-09	8.3E-09	6.3E-11	1.0E-08	0.39
Chromium					
Zinc					
Acenaphthene					
Acenaphthylene					
Anthracene					
Benz(a)anthracene	5.3E-09	2.2E-08		2.7E-08	1.01
Benzo(a)pyrene	8.0E-08	3.3E-07	1.1E-07	5.2E-07	19.48
Benzo(b)fluoranthene	1.9E-08	7.7E-08		9.5E-08	3.58
Benzo(ghi)perylene					
Benzo(k)fluoranthene	4.6E-09	1.9E-08		2.3E-08	0.87
Chrysene	8.8E-11	3.6E-10		4.4E-10	0.02
Dibenz(a,h)anthracene	2.0E-07	8.2E-07		1.0E-06	38.26
Dibenzofuran					

Table 1.73 Excess lifetime cancer risks for the future recreational user

----- LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Ingestion of venison	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Fluoranthene					
Fluorene					
Indeno(1,2,3-cd)pyrene	4.1E-08	1.7E-07		2.1E-07	7.75
PCB-1016	6.8E-09	2.8E-08	3.0E-08	6.5E-08	2.43
PCB-1254	3.4E-09	1.4E-08	1.2E-08	3.0E-08	1.11
PCB-1260	8.1E-08	3.3E-07	2.3E-08	4.4E-07	16.42
Phenanthrene					
Pyrene					
Cesium-137	2.7E-09	1.1E-08		1.4E-08	0.51
Neptunium-237	4.4E-09	1.9E-08	1.5E-10	2.3E-08	0.87
Technetium-99	1.6E-08	6.1E-08		7.8E-08	2.92
Thorium-234	3.9E-11	1.7E-10	1.4E-12	2.1E-10	0.01
Uranium-234	2.1E-10	9.1E-10	1.9E-08	2.0E-08	0.77
Uranium-238	1.4E-09	5.9E-09	8.9E-08	9.6E-08	3.61
Pathway Total	4.7E-07	1.9E-06	2.9E-07	2.7E-06	
Fraction of Total	1.8E-01	7.2E-01	1.1E-01		

Table 1.74 Excess lifetime cancer risks for the future excavation worker

----- LOCATION=AOC 204 MEDIA=Subsurface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
1,1-Dichloroethene	3.0E-08	6.7E-08	8.0E-08		1.8E-07	16.61
PCB-1254	6.2E-08	3.7E-08	1.5E-09		1.0E-07	9.49
PCB-1260	6.2E-08	3.7E-08	1.8E-09		1.0E-07	9.52
Polychlorinated biphenyl	2.5E-07	1.5E-07	3.4E-09		4.0E-07	37.71
Tetrachloroethene	5.2E-08	1.2E-07	1.0E-08		1.8E-07	16.95
Trichloroethene	5.7E-09	8.5E-08	1.2E-08		1.0E-07	9.72
Pathway Total	4.6E-07	4.9E-07	1.1E-07		1.1E-06	
Fraction of Total	4.3E-01	4.6E-01	1.0E-01			
----- LOCATION=SWMU 193A MEDIA=Subsurface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Beryllium	3.4E-06	1.5E-04	2.9E-12		1.6E-04	91.33
Chromium			2.5E-10		2.5E-10	0.00
Anthracene						
Benz (a) anthracene	1.6E-07	4.7E-07	9.6E-11		6.3E-07	0.37
Benzo (a) pyrene	2.3E-06	6.5E-06	5.1E-10		8.8E-06	5.16
Benzo (b) fluoranthene	4.6E-08	1.3E-07	5.5E-11		1.8E-07	0.11
Benzo (ghi) perylene						
Chrysene	1.5E-09	4.5E-09	3.1E-12		6.0E-09	0.00
Di-n-butylphthalate						
Di-n-octylphthalate						
Dibenz (a, h) anthracene	1.2E-06	3.4E-06	6.3E-11		4.6E-06	2.68
Fluoranthene						
Indeno (1, 2, 3-cd) pyrene	1.4E-07	4.2E-07	1.4E-11		5.6E-07	0.33
Pyrene						
bis(2-Ethylhexyl) phthalate	3.0E-09	1.4E-08			1.7E-08	0.01
Pathway Total	7.2E-06	1.6E-04	1.0E-09		1.7E-04	
Fraction of Total	4.2E-02	9.6E-01	5.8E-06			
----- LOCATION=SWMU 193B MEDIA=Subsurface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Beryllium	3.7E-06	1.7E-04	3.2E-12		1.7E-04	100.0
Chromium			8.7E-10		8.7E-10	0.00
Vanadium						
Pathway Total	3.7E-06	1.7E-04	8.7E-10		1.7E-04	
Fraction of Total	2.2E-02	9.8E-01	5.1E-06			
----- LOCATION=SWMU 193C MEDIA=Subsurface Soil -----						
Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Beryllium	3.6E-06	1.6E-04	3.1E-12		1.7E-04	100.0

Table 1.74 Excess lifetime cancer risks for the future excavation worker

----- LOCATION=SWMU 193C MEDIA=Subsurface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Cadmium			6.9E-12		6.9E-12	0.00
Chromium			4.8E-10		4.8E-10	0.00
Cobalt						
Iron						
Lead						
Manganese						
Vanadium						
Zinc						
Xylene						
Pathway Total	3.6E-06	1.6E-04	4.9E-10		1.7E-04	
Fraction of Total	2.2E-02	9.8E-01	3.0E-06			

----- LOCATION=SWMU 194 MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Beryllium	6.8E-06	3.1E-04	5.8E-12		3.1E-04	100
Cadmium			7.7E-12		7.7E-12	0.00
Chromium			2.4E-10		2.4E-10	0.00
Lead						
Zinc						
Ethylbenzene						
Pathway Total	6.8E-06	3.1E-04	2.5E-10		3.1E-04	
Fraction of Total	2.2E-02	9.8E-01	8.0E-07			

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	5.6E-06	6.1E-06	2.4E-11		1.2E-05	5.49
Barium						
Beryllium	1.6E-06	7.3E-05	1.4E-12		7.5E-05	34.96
Cadmium			2.8E-12		2.8E-12	0.00
Chromium			1.9E-10		1.9E-10	0.00
Lead						
Manganese						
Thallium						
Zinc						
1,1-Dichloroethene	4.5E-09	1.0E-08	1.2E-08		2.6E-08	0.01
1,2,4-Trichlorobenzene						
1,2-Dichlorobenzene						
1,3-Dichlorobenzene						
1,4-Dichlorobenzene	1.2E-08	3.0E-08			4.3E-08	0.02
2,4,5-Trichlorophenol						
2,4,6-Trichlorophenol	5.6E-09	1.0E-08	2.8E-10		1.6E-08	0.0
2,4-Dinitrotoluene	3.5E-07	3.6E-07			7.1E-07	0.3
2,6-Dinitrotoluene	3.5E-07	3.6E-07			7.1E-07	0.33
2-Chloronaphthalene						

Table 1.74 Excess lifetime cancer risks for the future excavation worker

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
2-Hexanone						
2-Methyl-4,6-dinitrophenol						
2-Methylnaphthalene						
2-Nitroaniline						
2-Nitrophenol						
3,3'-Dichlorobenzidine	1.7E-07	3.1E-07			4.8E-07	0.22
3-Nitroaniline						
4,4'-DDD	1.0E-08	1.3E-08			2.4E-08	0.01
4,4'-DDE	1.5E-08	1.9E-08			3.4E-08	0.02
4,4'-DDT	1.5E-08	1.9E-08	6.4E-12		3.4E-08	0.02
4-Bromophenyl phenyl ether						
4-Chloro-3-methylphenol						
4-Chlorophenyl phenyl ether						
4-Nitroaniline						
Acenaphthene						
Acenaphthylene						
Aldrin	3.6E-07	6.4E-07	6.9E-10		1.0E-06	0.47
Anthracene						
Benz(a)anthracene	5.3E-07	1.5E-06	3.1E-10		2.1E-06	0.97
Benzo(a)pyrene	5.8E-06	1.7E-05	1.3E-09		2.2E-05	10.51
Benzo(b)fluoranthene	7.0E-07	2.0E-06	8.3E-10		2.7E-06	1.27
Benzo(ghi)perylene						
Benzo(k)fluoranthene	4.5E-08	1.3E-07	6.3E-12		1.8E-07	0.08
Butyl benzyl phthalate						
Chrysene	5.6E-09	1.6E-08	1.1E-11		2.2E-08	0.01
Di-n-butylphthalate						
Di-n-octylphthalate						
Dibenz(a,h)anthracene	4.0E-06	1.2E-05	2.1E-10		1.6E-05	7.35
Dibenzofuran						
Dieldrin	7.0E-07	1.2E-06	4.3E-09		1.9E-06	0.91
Endosulfan I						
Endosulfan II						
Endosulfan Sulfate						
Endrin						
Endrin Ketone						
Ethylbenzene						
Fluoranthene						
Fluorene						
Heptachlor	9.5E-08	1.2E-07	5.6E-10		2.1E-07	0.10
Heptachlor Epoxide	1.9E-07	2.4E-07	4.9E-10		4.3E-07	0.20
Hexachlorobenzene	8.1E-07	1.5E-06	5.8E-08		2.3E-06	1.09
Hexachlorobutadiene	4.0E-08	7.1E-08	7.1E-09		1.2E-07	0.06
Hexachlorocyclopentadiene						
Hexachloroethane	7.1E-09	1.3E-08	1.0E-09		2.1E-08	0.01
Indeno(1,2,3-cd)pyrene	4.8E-07	1.4E-06	4.7E-11		1.9E-06	0.88
Methoxychlor						
N-Nitroso-di-n-propylamine	3.6E-06	1.3E-05			1.6E-05	7.65
N-Nitrosodiphenylamine	2.5E-09	8.9E-09			1.1E-08	0.01
Naphthalene						
PCB-1016	4.2E-07	2.5E-07	1.2E-08		6.8E-07	0.32
PCB-1221	3.1E-07	1.8E-07	1.3E-13		4.9E-07	0.23
PCB-1232	3.1E-07	1.8E-07	1.3E-13		4.9E-07	0.23
PCB-1242	3.1E-07	1.8E-07	1.1E-08		5.0E-07	0.23
PCB-1248	3.1E-07	1.8E-07	1.3E-13		4.9E-07	0.23
PCB-1254	3.5E-07	2.1E-07	8.6E-09		5.7E-07	0.26
PCB-1260	4.4E-07	2.6E-07	1.3E-08		7.1E-07	0.33
Pentachlorophenol	8.0E-08	7.1E-08			1.5E-07	0.07
Phenanthrene						
Pyrene						

Table 1.74 Excess lifetime cancer risks for the future excavation worker

----- LOCATION=SWMU 99A MEDIA=Subsurface Soil -----
(continued)

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Toxaphene	4.8E-07	8.6E-07	5.4E-10		1.3E-06	0.63
Vinyl Chloride	2.8E-08	6.3E-08	5.5E-08		1.5E-07	0.07
Xylene						
alpha-BHC	1.3E-07	1.2E-07	3.1E-09		2.6E-07	0.12
alpha-Chlordane						
beta-BHC	3.8E-08	3.7E-08	3.9E-10		7.6E-08	0.04
bis (2-Chloroethoxy)methane						
bis (2-Chloroethyl) ether	5.6E-07	1.0E-06	2.3E-07		1.8E-06	0.84
bis (2-Chloroisopropyl) ether	3.6E-08	6.4E-08	8.1E-09		1.1E-07	0.05
bis (2-Ethylhexyl) phthalate	4.2E-09	2.0E-08			2.4E-08	0.01
cis-1,3-Dichloropropene						
delta-BHC						
gamma-BHC (Lindane)	2.7E-08	2.5E-08			5.3E-08	0.02
gamma-Chlordane						
trans-1,3-Dichloropropene						
Cesium-137	6.7E-08		5.2E-14	6.7E-06	6.8E-06	3.18
Neptunium-237	7.1E-06		1.1E-09	1.7E-05	2.4E-05	11.20
Technetium-99	9.8E-07		2.6E-12	6.6E-10	9.8E-07	0.46
Thorium-234	8.4E-07		1.1E-12	2.3E-07	1.1E-06	0.50
Uranium-234	1.4E-06		5.6E-10	1.0E-09	1.4E-06	0.64
Uranium-238	6.0E-06		1.6E-09	9.7E-06	1.6E-05	7.34
Pathway Total	4.6E-05	1.3E-04	4.3E-07	3.3E-05	2.1E-04	
Fraction of Total	2.1E-01	6.3E-01	2.0E-03	1.6E-01		

----- LOCATION=SWMU 99B MEDIA=Subsurface Soil -----

Analyte	Ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Arsenic	6.4E-06	7.0E-06	2.8E-11		1.3E-05	6.53
Beryllium	4.2E-06	1.9E-04	3.6E-12		1.9E-04	93.46
Chromium			2.4E-10		2.4E-10	0.00
Methylene Chloride	5.6E-09	1.3E-08	6.4E-09		2.5E-08	0.01
Pathway Total	1.1E-05	2.0E-04	6.7E-09		2.1E-04	
Fraction of Total	5.2E-02	9.5E-01	3.3E-05			

Table 1.75. Summary of human health risk characterization for SWMU 99a without lead as a COPC

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Current industrial worker at current concentrations (soil only)	3.1E-4	Beryllium Benzo(a)pyrene Benzo(b)anthracene Benzo(b)fluoranthene Cesium-137 Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene Neptunium-237 Uranium-238	70 6 1 1 3 3 1 9 5	Incidental ingestion Dermal contact External exposure	2 81 17	HI < 1	-	-	-	-
Future industrial worker at current concentrations (soil only)	3.1E-4	Beryllium Benzo(a)pyrene Benzo(b)anthracene Benzo(b)fluoranthene Cesium-137 Dibenz(a,h)anthracene Neptunium-237 Uranium-238	70 6 1 1 3 3 9 5	Incidental ingestion Dermal contact External exposure	2 81 17	HI < 1	-	-	-	-
Future industrial worker at current concentrations (RGA groundwater only)	5.6E-4	1,1-Dichloroethene Arsenic Beryllium Trichloroethene Radon-222	14 5 38 8 35	Incidental ingestion Dermal contact Inhalation of vapors/particles	44 12 43	5.11	Aluminum Arsenic Chromium Iron Manganese Trichloroethene Vanadium	2 4 10 15 8 42 14	Ingestion Dermal contact Inhalation of vapors/particles	73 15 12
Future industrial worker at current concentrations (McNairy groundwater only)	7.6E-5	1,1-Dichloroethene Carbon tetrachloride Trichloroethene	61 2 37	Ingestion Dermal contact Inhalation of vapors/particles	52 10 38	1.64	cis-1,2-Dichloroethene Trichloroethene Carbon tetrachloride	11 84 4	Ingestion Dermal contact Inhalation of vapors/particles	53 17 29
Future child rural resident at current concentrations (soil only)	NA	NA	NA	NA	NA	17.2	Barium Beryllium Chromium PCB-1016 PCB-1254 Pyrene Zinc	19 4 28 18 26 < 1 4	Ingestion Dermal contact Ingestion of vegetables	1 18 81

Table 1.75. (Continued)

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Future child rural resident at current concentrations (RGA groundwater only)	NA	NA	NA	NA	NA	97.3	1,1-Dichloroethene Aluminum Arsenic Barium Beryllium Chromium <i>cis</i> -1,2-Dichloroethene Cobalt Copper Iron Lithium Manganese Mercury Nickel Trichloroethene Vanadium Zinc	1 1 2 < 1 < 1 5 < 1 < 1 < 1 9 < 1 < 1 3 < 1 < 1 68 6 < 1	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	26 2 51 21
Future child rural resident at current concentrations (McNairy groundwater only)	NA	NA	NA	NA	NA	53.1	1,1-Dichloroethene Carbon tetrachloride <i>cis</i> -1,2-Dichloroethene Trichloroethene	1 5 13 80	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	1.1 1 73 15
Future adult rural resident at current concentrations (soil only)	> 1E-2*	Beryllium Benz(a)anthracene Benzo(a)pyrene Benzo(a)fluoranthene Cesium Chrysene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene Neptunium-237 PCB-1016 PCB-1254 PCB-1260 Technetium-99 Thorium-234 Uranium-234 Uranium-238	< 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 96 < 1 < 1 < 1	Ingestion Dermal Contact External Exposure Ingestion of vegetables	< 1 < 1 < 1 99	5.05	Barium Beryllium Chromium PCB-1016 PCB-1254 Zinc	19 3 25 20 28 4	Dermal contact Ingestion of vegetables	12 88

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Table 1.75. (Continued)

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Future adult rural resident at current concentrations (RGA groundwater only)	5.6E-3	1,1-Dichloroethene Arsenic Beryllium bis(2-Ethylhexyl)phthalate Trichloroethene Radon-222 Technetium-99	40 4 26 < 1 11 9 9	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	24 3 45 28	28.3	1,1-Dichloroethene Aluminum Arsenic Barium Beryllium Chromium <i>cis</i> -1,2-Dichloroethene Iron Lithium Manganese Nickel Trichloroethene Vanadium	1 2 3 < 1 < 1 7 < 1 11 < 1 4 1 59 9	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	37 4 36 23
Future adult rural resident at current concentrations (McNairy groundwater only)	1.7E-3	1,1-Dichloroethene Carbon tetrachloride Trichloroethene	75 1 24	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	12 1 70 17	13.3	1,1-Dichloroethene <i>cis</i> -1,2-Dichloroethene Carbon tetrachloride Trichloroethene	1 13 5 80	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	18 3 60 19
Future child recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	HI < 1	-	-	-	-
Future teen recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	HI < 1	-	-	-	-
Future adult recreational user at current concentrations (soil only)	2.7E-6	Dibenz(a,h)anthracene	38	Ingestion of venison Ingestion of rabbit Ingestion of quail	11 72 11	HI < 1	-	-	-	-

Table 1.75. (Continued)

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Future excavation worker at current concentrations	2.1E-4	Aldrin	< 1	Ingestion	21	1.46	2-Nitroaniline	8	Ingestion	13
		Arsenic	5	Dermal contact	63		Antimony	35	Dermal contact	83
		Benz(a)anthracene	< 1	Inhalation of vapors/particles	< 1		Chromium	16	Inhalation of vapors/particles	3
		Benzo(a)pyrene	11	External exposure	16		Manganese	14		
		Benzo(b)fluoranthene	1				Aluminum	6		
		Beryllium	35				Arsenic	5		
		bis(2-Chloroethyl)ether	< 1				Barium	3		
		Cesium-137	3				Beryllium	2		
		Dibenz(a,h)anthracene	7				Cadmium	2		
		Dieldrin	< 1							
		Hexachlorobenzene	1							
		Indeno(1,2,3-cd)pyrene	< 1							
		Neptunium-237	11							
		N-nitroso-di-n-propylamine	8							
		Thorium-234	< 1							
		Toxaphene	< 1							
		Uranium-234	< 1							
Uranium-238	7									

Notes: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
 none = ELCR or HI is above the benchmark, but no COCs or POCs fulfill the selection criteria.
 ND = No Data (no samples were taken from the medium under consideration).
 - = There are no COCs or POCs.
 * = The ELCR is approximate because the linearized multistage model returns imprecise values at risks > 1E-2.

Table 1.76. Summary of human health risk characterization for SWMU 99b without lead as a COPC

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Current industrial worker at current concentrations (soil only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future industrial worker at current concentrations (soil only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future industrial worker at current concentrations (RGA groundwater only)	2.6E-4	Radon-222 Trichloroethene	47 53	Ingestion Dermal contact Inhalation of vapors/particles	31 12 57	7.00	Chromium Trichloroethene	3 94	Ingestion Dermal contact Inhalation of vapors/particles	54 19 26
Future industrial worker at current concentrations (McNairy groundwater only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future child rural resident at current concentrations (soil only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future child rural resident at current concentrations (RGA groundwater only)	NA	NA	NA	NA	NA	208	Barium Chromium Iron Manganese Trichloroethene	< 1 1 < 1 < 1 98	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	12 2 71 15
Future child rural resident at current concentrations (McNairy groundwater only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future adult rural resident at current concentrations (soil only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future adult rural resident at current concentrations (RGA groundwater only)	2.3E-3	Radon-222 Trichloroethene	13 87	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	19 4 58 20	52.9	Barium Chromium Iron Manganese Trichloroethene	< 1 2 < 1 < 1 97	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	20 4 58 18

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Table 1.76. (Continued)

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Future adult rural resident at current concentrations (McNairy groundwater only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future child recreational user at current concentrations (soil only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future teen recreational user at current concentrations (soil only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future adult recreational user at current concentrations (soil only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future excavation worker at current concentrations	2.1E-4	Arsenic Beryllium	7 93	Ingestion Dermal contact Inhalation of vapors/particles	5 95 < 1	HI < 1	=	=	=	=

Notes: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
 none = ELCR or HI is above the benchmark, but no COCs or POCs fulfill the selection criteria.
 ND = No Data (no samples were taken from the medium under consideration).
 - = There are no COCs or POCs.

Table 1.77. Summary of human health risk characterization for SWMU 193a without lead as a COPC

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Current industrial worker at current concentrations (soil only)	1.5E-5	Benzo(a)pyrene Dibenz(a,h)anthracene	60 31	Dermal contact Ingestion	97 4	HI < 1	-	-	-	-
Future industrial worker at current concentrations (soil only)	1.5E-5	Benzo(a)pyrene Dibenz(a,h)anthracene	60 31	Dermal contact Ingestion	97 4	HI < 1	-	-	-	-
Future industrial worker at current concentrations (RGA groundwater only)	2.6E-5	Pentachlorophenol Technetium-99 Trichloroethene 1,1-Dichloroethene bis(2-Eethylhexyl)phthalate	45 6 42 3 3	Ingestion Dermal contact Inhalation	48 42 9	1.64	Iron Trichloroethene Fluoride	62 33 4	Ingestion Dermal contact Inhalation of vapors/particles	82 9 9
Future industrial worker at current concentrations (McNairy groundwater only)	1.1E-6	none	-	none	-	4.69	Iron cis-1,2-Dichloroethene	94 6	Ingestion Dermal contact Inhalation of vapors/particles	96 2 2
Future child rural resident at current concentrations (soil only)	NA	NA	NA	NA	NA	6.25	Chromium	99	Dermal contact Ingestion of vegetables	40 59
Future child rural resident at current concentrations (RGA groundwater only)	NA	NA	NA	NA	NA	28.6	Fluoride Iron Trichloroethene cis-1,2-Trichloroethene	2 39 58 < 1	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	32 1 43 24
Future child rural resident at current concentrations (McNairy groundwater only)	NA	NA	NA	NA	NA	59.9	cis-1,2-Dichloroethene Iron Trichloroethene	17 82 < 1	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	51 < 1 13 36
Future adult rural resident at current concentrations (soil only)	7.1E-4	Benz(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene	4 60 1 31 4	Ingestion Dermal contact Ingestion of vegetables	< 1 6 93	1.66	Chromium	99	Dermal contact Ingestion of vegetables	29 70

Table 1.77. (Continued)

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Future adult rural resident at current concentrations (RGA groundwater only)	2.4E-3	1,1-Dichloroethene bis-(2-Ethylhexyl) phthalate Pentachlorophenol Technetium-99 Trichloroethene	1 < 1 2 90 7	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	3 1 4 92	8.69	Fluoride Iron Trichloroethene	2 49 48	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	43 2 29 25
Future adult rural resident at current concentrations (McNairy groundwater only)	4.1E-4	Technetium-99 Trichloroethene Uranium-238	98 < 1 < 1	Ingestion Inhalation of vapors/particles Ingestion of vegetables	1 < 1 99	21.2	cis-1,2-Dichloroethene Iron	12 87	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	59 < 1 7 33
Future child recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	HI < 1	-	-	-	=
Future teen recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	HI < 1	-	-	-	=
Future adult recreational user at current concentrations (soil only)	3.6E-6	Benzo(a)pyrene Dibenz(a,h)anthracene	35 59	Ingestion of venison Ingestion of rabbit Ingestion of quail	31 57 12	HI < 1	-	-	-	-
Future excavation worker at current concentrations	1.7E-4	Beryllium Benzo(a)pyrene Dibenz(a,h)anthracene	91 5 3	Ingestion Dermal contact	4 96	HI < 1	-	-	-	-

Notes: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
 none = ELCR or HI is above the benchmark, but no COCs or POCs fulfill the selection criteria.
 ND = No Data (no samples were taken from the medium under consideration).
 - = There are no COCs or POCs.

Table 1.78. Summary of human health risk characterization for SWMU 193b without lead as a COPC

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Current industrial worker at current concentrations (soil only)	5.1E-4	Beryllium	100	Ingestion Dermal contact	< 1 100	5.25	Beryllium Chromium Vanadium	3 60 37	Dermal contact	100
Future industrial worker at current concentrations (soil only)	5.1E-4	Beryllium	100	Ingestion Dermal contact	< 1 100	5.25	Beryllium Chromium Vanadium	3 60 37	Dermal contact	100
Future industrial worker at current concentrations (RGA groundwater only)	4.4E-5	1,1-Dichloroethene Carbon tetrachloride Trichloroethene	16 8 74	Ingestion Dermal contact Inhalation of vapors/particles	59 18 23	1.74	Carbon tetrachloride Trichloroethene	8 90	Ingestion Dermal contact Inhalation of vapors/particles	52 19 29
Future industrial worker at current concentrations (McNairy groundwater only)	< 1E-6	-	-	-	-	HI < 1	-	-	-	-
Future child rural resident at current concentrations (soil only)	NA	NA	NA	NA	NA	66.7	Beryllium Chromium Vanadium	3 68 30	Ingestion Dermal contact Ingestion of vegetables	< 1 46 53
Future child rural resident at current concentrations (RGA groundwater only)	NA	NA	NA	NA	NA	55.5	1,1-Dichloroethene Acetone Carbon tetrachloride <i>cis</i> -1,2-Dichloroethene Trichloroethene	< 1 1 9 < 1 88	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	11 2 73 15
Future child rural resident at current concentrations (McNairy groundwater only)	NA	NA	NA	NA	NA	2.69	<i>cis</i> -1,2-Dichloroethene Trichloroethene	53 47	Ingestion Inhalation of vapors/particles Ingestion of vegetables	11 71 17
Future adult rural resident at current concentrations (soil only)	3.0E-3	Beryllium	100	Ingestion Dermal contact Ingestion of vegetables	1 50 49	17.3	Beryllium Chromium Vanadium	2 69 28	Dermal contact Ingestion of vegetables	34 65
Future adult rural resident at current concentrations (RGA groundwater only)	1.0E-3	1,1-Dichloroethene Carbon tetrachloride bis(2-Ethylhexyl)phthalate Technetium-99 Trichloroethene	20 5 < 1 29 46	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	14 2 40 44	13.9	Acetone Carbon tetrachloride <i>cis</i> -1,2-Dichloroethene Trichloroethene	1 9 < 1 88	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	18 3 60 18

Table 1.78. (Continued)

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Future adult rural resident at current concentrations (McNairy groundwater only)	1.2E-5	Trichloroethene	100	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	22 4 50 23	HI < 1	-	-	-	-
Future child recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	HI < 1	-	-	-	-
Future teen recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	HI < 1	-	-	-	-
Future adult recreational user at current concentrations (soil only)	< 1E-6	-	-	-	-	HI < 1	-	-	-	-
Future excavation worker at current concentrations	1.7E-4	Beryllium	100	Ingestion Dermal contact	2 98	1.75	Chromium Vanadium	59 37	Dermal contact Ingestion	97 3

Notes: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
 none = ELCR or HI is above the benchmark, but no COCs or POCs fulfill the selection criteria.
 ND = No Data (no samples were taken from the medium under consideration).
 - = There are no COCs or POCs.

Table 1.79. Summary of human health risk characterization for SWMU 193c without lead as a COPC

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Current industrial worker at current concentrations (soil only)	< 1E-6	-	-	-	-	HI < 1	-	-	-	-
Future industrial worker at current concentrations (soil only)	< 1E-6	-	-	-	-	HI < 1	-	-	-	-
Future industrial worker at current concentrations (RGA groundwater only)	1.0E-5	Trichloroethene	100	Ingestion Dermal contact Inhalation of vapors/particles	59 23 18	1.46	1,2-Dichloroethene Trichloroethene	65 35	Ingestion Dermal contact Inhalation of vapors/particles	60 7 33
Future industrial worker at current concentrations (McNairy groundwater only)	4.2E-4	1,1-Dichloroethene 1,2-Dichloroethane Arsenic Beryllium Carbon tetrachloride Tetrachloroethene Radon-222 Vinyl chloride	3 < 1 15 54 < 1 < 1 11 16	Ingestion Dermal contact Inhalation of vapors/particles	71 15 14	9.92	Aluminum Antimony Arsenic Cadmium Chromium Iron Manganese Vanadium	4 33 4 10 6 20 3 16	Ingestion Dermal contact	86 14
Future child rural resident at current concentrations (soil only)	NA	NA	NA	NA	NA	3.04	Chromium Zinc	91 9	Dermal contact Ingestion of vegetables	37 62
Future child rural resident at current concentrations (RGA groundwater only)	NA	NA	NA	NA	NA	80.7	1,2-Dichloroethene Trichloroethene	80 20	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	7 < 1 48 45

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Table 1.79. (Continued)

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Future child rural resident at current concentrations (McNairy groundwater only)	NA	NA	NA	NA	NA	103	1,1,2-Trichloroethane 1,1-Dichloroethene 1,2-Dichloroethane Aluminum Antimony Arsenic Barium Benzene Beryllium Cadmium Carbon tetrachloride Chromium Chloroform <i>cis</i> -1,2-Dichloroethene Cobalt Iron Manganese Molybdenum Nickel <i>trans</i> -1,2-Dichloroethene Trichloroethene Silver Uranium Vanadium	< 1 < 1 < 1 4 33 4 < 1 < 1 < 1 7 2 5 < 1 < 1 < 1 21 2 1 < 1 < 1 < 1 < 1 14	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	56 4 4 37
Future adult rural resident at current concentrations (soil only)	< 1E-6	-	-	-	-	HI < 1	-	-	-	-
Future adult rural resident at current concentrations (RGA groundwater only)	1.5E-4	Trichloroethene	100	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	22 4 50 23	22	1,2-Dichloroethene Trichloroethene	82 18	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	11 < 1 36 52

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Table 1.79. (Continued)

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Future adult rural resident at current concentrations (McNairy groundwater only)	4.0E-3	1,1,2-Trichloroethane 1,1-Dichloroethene 1,2-Dichloroethane Arsenic Benzene Beryllium Bromodichloromethane Carbon tetrachloride Chloroform Polychlorinated biphenyl Radon-222 Tetrachloroethene Trichloroethene Vinyl chloride	< 1 8 < 1 14 < 1 39 < 1 < 1 < 1 < 1 < 1 3 < 1 < 1 34	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	41 4 16 39	38.5	Aluminum Antimony Arsenic Barium Benzene Beryllium Cadmium Carbon Tetrachloride Chromium Iron Manganese Molybdenum Nickel Silver Vanadium	4 33 4 < 1 < 1 < 1 8 1 5 21 3 1 < 1 1 14	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	62 5 2 31
Future child recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	HI < 1	-	-	-	-
Future teen recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	HI < 1	-	-	-	-
Future adult recreational user at current concentrations (soil only)	< 1E-6	-	-	-	-	HI < 1	-	-	-	-
Future excavation worker at current concentrations (soil only).	1.7E-4	Beryllium	100	Ingestion Dermal contact	2 98	2.09	Chromium Iron Manganese Vanadium	28 31 17 14	Ingestion Dermal contact	12 88

Notes: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
 none = ELCR or HI is above the benchmark, but no COCs or POCs fulfill the selection criteria.
 ND = No Data (no samples were taken from the medium under consideration).
 - = There are no COCs or POCs.

Table 1.80. Summary of human health risk characterization for SWMU 194 without lead as a COPC

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Current industrial worker at current concentrations (soil only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future industrial worker at current concentrations (soil only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future industrial worker at current concentrations (RGA groundwater only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future industrial worker at current concentrations (McNairy groundwater only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future child rural resident at current concentrations (soil only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future child rural resident at current concentrations (RGA groundwater only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future child rural resident at current concentrations (McNairy groundwater only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future adult rural resident at current concentrations (soil only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future adult rural resident at current concentrations (RGA groundwater only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future adult rural resident at current concentrations (McNairy groundwater only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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Table 1.80. (Continued)

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Future child recreational user at current concentrations (soil only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future teen recreational user at current concentrations (soil only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future adult recreational user at current concentrations (soil only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future excavation worker at current concentrations	3.1E-4	Beryllium	100%	Ingestion Dermal contact	2 98	HI < 1	-	-	-	-

Notes: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
 none = ELCR or HI is above the benchmark, but no COCs or POCs fulfill the selection criteria.
 ND = No Data (no samples were taken from the medium under consideration).
 - = There are no COCs or POCs.

Table 1.81. Summary of human health risk characterization for AOC 204 without lead as a COPC

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Current industrial worker at current concentrations (soil only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future industrial worker at current concentrations (soil only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future industrial worker at current concentrations (RGA groundwater only)	1.3E-3	1,1-Dichloroethene PCB-1254 PCB-1260 Polychlorinated biphenyls Tetrachloroethene Trichloroethene	13 6 14 43 21 3	Ingestion Dermal contact Inhalation of vapors/particles	40 53 8	33.3	1,2-Dichloroethane PCB-1254 Tetrachloroethene Trichloroethene	2 88 4 5	Ingestion Dermal contact Inhalation of vapors/particles	43 55 2
Future industrial worker at current concentrations (McNairy groundwater only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future child rural resident at current concentrations (soil only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future child rural resident at current concentrations (RGA groundwater only)	NA	NA	NA	NA	NA	279	1,1-Dichloroethene 1,1-Dichloroethene <i>cis</i> -1,2-Dichloroethene PCB-1254 Tetrachloroethene Trichloroethene	9 1 < 1 66 5 19	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	35 18 21 27
Future child rural resident at current concentrations (McNairy groundwater only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future adult rural resident at current concentrations (soil)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.81. (Continued)

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI	COCs	% Total HI	POCs	% Total HI
Future adult rural resident at current concentrations (RGA groundwater only)	> 1E-2*	1,1-Dichloroethene PCB-1254 PCB-1260 Polychlorinated biphenyls Tetrachloroethene Trichloroethene Vinyl chloride	33 6 7 38 11 3 < 1	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	19 12 28 41	102	1,1-Dichloroethane 1,1-Dichloroethene PCB-1254 Tetrachloroethene Trichloroethene	6 1 74 5 13	Ingestion Dermal contact Inhalation of vapors/particles Ingestion of vegetables	39 25 11 24
Future adult rural resident at current concentrations (McNairy groundwater only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future child recreational user at current concentrations (soil only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future teen recreational user at current concentrations (soil only)	NA/ND	NA/ND	NA/ND	NA/ND	NA/ND	ND	ND	ND	ND	ND
Future adult recreational user at current concentrations (soil only)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Future excavation worker at current concentrations	1.1E-6	none	-	none	-	HI < 1	-	-	-	-

Notes: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
 none = ELCR or HI is above the benchmark, but no COCs or POCs fulfill the selection criteria.
 ND = No Data (no samples were taken from the medium under consideration).
 - = There are no COCs or POCs.
 * = The ELCR is approximate because the linearized multistage model returns imprecise values at risks > 1E-2.

Table 1.82. Effect of retention of infrequently detected analytes in the COPC list on risk characterization without lead included as a COPC

SWMU	Total excess lifetime cancer risk		Total hazard index	
	with infrequent detects	Without infrequent detects	with infrequent detects	without infrequent detects
Current industrial worker				
SWMU 99a (soil)	3.1E-4	3.0E-4	<1	<1
SWMU 193a (soil)	1.5E-5	1.5E-5	<1	<1
SWMU 193b (soil)	5.1E-4	5.1E-4	5.25	5.25
SWMU 193c (soil)	1.7E-10	1.7E-10	<1	<1
Future industrial worker				
SWMU 99a (RGA)	5.6E-4	5.6E-4	5.1	5.1
SWMU 99a (McNairy)	7.6E-5	7.6E-5	1.64	1.64
SWMU 99b (RGA)	2.6E-4	2.6E-4	7.0	7.0
SWMU 193a (RGA)	2.6E-5	1.4E-5	1.64	1.63
SWMU 193a (McNairy)	1.1E-6	1.1E-6	4.69	4.43
SWMU 193b (RGA)	4.4E-5	4.4E-5	1.74	1.74
SWMU 193b (McNairy)	8.4E-7	8.4E-7	<1	<1
SWMU 193c (RGA)	1.0E-5	1.0E-5	1.46	1.46
SWMU 193c (McNairy)	4.2E-4	4.2E-4	9.92	9.92
AOC 204 (RGA)	1.3E-3	1.3E-3	33.3	33.3
Future excavation worker				
SWMU 99a (soil)	2.1E-4	2.1E-4	1.46	1.46
SWMU 99b (soil)	2.1E-4	2.1E-4	<1	<1
SWMU 193a (soil)	1.7E-4	1.7E-4	<1	<1
SWMU 193b (soil)	1.7E-4	1.7E-4	1.75	1.75
SWMU 193c (soil)	1.7E-4	1.7E-4	2.09	2.02
SWMU 194 (soil)	3.1E-4	3.1E-4	<1	<1
AOC 204 (soil)	1.1E-6	1.1E-6	<1	<1
Future rural resident (values for HI are for a child)				
SWMU 99a (RGA)	5.6E-3	5.6E-3	97.3	97.3
SWMU 99a (McNairy)	1.7E-3	1.7E-3	53.1	53.1
SWMU 99a (soil)	1.4E-1	1.4E-1	17.2	9.5
SWMU 99b (RGA)	2.3E-3	2.3E-3	208	208
SWMU 193a (RGA)	2.4E-3	2.3E-3	28.6	28.5
SWMU 193a (McNairy)	4.2E-4	4.2E-4	59.9	49.4
SWMU 193a (soil)	7.1E-4	7.1E-4	6.25	6.25
SWMU 193b (RGA)	1.0E-3	1.0E-3	55.5	55.5
SWMU 193b (McNairy)	1.2E-5	1.2E-5	2.69	2.69
SWMU 193b (soil)	3.0E-3	3.0E-3	66.7	66.7
SWMU 193c (RGA)	1.5E-4	1.5E-4	80.7	80.7
SWMU 193c (McNairy)	4.0E-3	4.0E-3	103	103
SWMU 193c (soil)	1.1E-9	1.1E-9	3.04	3.04
AOC 204 (RGA)	1.5E-2	1.5E-2	279	279
Future recreational user (values for HI are for a child)				
SWMU 99a (soil)	2.7E-6	1.6E-6	<1	<1
SWMU 193a (soil)	3.6E-6	3.6E-6	<1	<1
SWMU 193b (soil)	4.4E-8	4.4E-8	<1	<1
SWMU 193c (soil)	NV	NV	<1	<1

NV = No values

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION=AOC 204 MEDIA=RGA Groundwater -----

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Technetium-99	0/4	7.00E+00		2.8E+01		No	pCi/L

----- LOCATION=AOC 204 MEDIA=Subsurface Soil -----

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,2,2-Tetrachloroethane	0/6	1.00E-02		1.8E-02		No	mg/kg
1,1,2-Trichloroethane	0/6	1.00E-02	3.1E+00	4.6E-02	No	No	mg/kg
1,2-Dichloroethane	0/6	1.00E-02	4.3E+00	2.2E-02	No	No	mg/kg
1,2-Dichloropropane	0/6	1.00E-02	1.6E+00	8.7E-02	No	No	mg/kg
1,2-Dimethylbenzene	0/6	1.00E-02	3.9E+02		No		mg/kg
2-Butanone	0/6	1.00E-02	3.9E+02		No		mg/kg
2-Hexanone	0/6	1.00E-02					mg/kg
4-Methyl-2-pentanone	0/6	1.00E-02	3.3E+01		No		mg/kg
Acetone	0/6	1.00E-02	9.2E+01		No		mg/kg
Americium-241	0/6	7.70E+00		1.5E+00		Yes	pCi/g
Benzene	0/6	1.00E-02	1.8E+00	5.1E-02	No	No	mg/kg
Bromodichloromethane	0/6	1.00E-02	1.9E+01	1.2E-01	No	No	mg/kg
Bromoform	0/6	1.00E-02	1.6E+01	5.4E-01	No	No	mg/kg
Bromomethane	0/6	1.00E-02	6.2E-01		No		mg/kg
Carbon Disulfide	0/6	1.00E-02	4.6E+01		No		mg/kg
Carbon Tetrachloride	0/6	1.00E-02	2.7E-01	1.6E-02	No	No	mg/kg
Cesium-137	0/6	2.90E+00		1.6E-02		Yes	pCi/g
Chlorobenzene	0/6	1.00E-02	5.6E+00		No		mg/kg
Chloroethane	0/6	1.00E-02	2.8E+02		No		mg/kg
Chloroform	0/6	1.00E-02	2.4E+00	2.1E-02	No	No	mg/kg
Chloromethane	0/6	1.00E-02		1.3E-01		No	mg/kg
Cobalt-60	0/6	1.30E+00		3.3E-03		Yes	pCi/g
Dibromochloromethane	0/6	1.00E-02	1.5E+01	5.9E-02	No	No	mg/kg
Ethylbenzene	0/6	1.00E-02	1.1E+02		No		mg/kg
Methylene Chloride	0/6	1.00E-02	7.0E+01	5.0E-01	No	No	mg/kg
Protactinium-234m	0/6	4.50E+02		4.9E-03		Yes	pCi/g
Styrene	0/6	1.00E-02	1.9E+02		No		mg/kg
Technetium-99	0/6	5.10E-01		4.4E+02		No	pCi/g
Thorium-234	0/6	1.80E+01		7.2E+00		Yes	pCi/g
Toluene	0/6	1.00E-02	9.8E+01		No		mg/kg
Uranium-235	0/6	7.70E+00		1.2E-01		Yes	pCi/g

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Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION=AOC 204 MEDIA-Subsurface Soil -----
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Vinyl Chloride	0/6	1.00E+01		1.5E-03		Yes	mg/kg
cis-1,2-Dichloroethane	0/6	4.27E-01	6.1E+00		No		mg/kg
cis-1,3-Dichloropropene	0/6	1.00E-02					mg/kg
m,p-Xylene	0/6	2.00E-02	1.7E+03		No		mg/kg
trans-1,2-Dichloroethane	0/6	4.27E-01	1.1E+01		No		mg/kg
trans-1,3-Dichloropropene	0/6	1.00E-02					mg/kg

----- LOCATION=SWMU 193A MEDIA-McNairy Groundwater -----

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/5	5.00E-03	5.4E-02		No		mg/L
1,1,2,2-Tetrachloroethane	0/1	5.00E-03		5.0E-06		Yes	mg/L
1,1,2-Trichloroethane	0/1	5.00E-03	8.1E-04	1.8E-05	Yes	Yes	mg/L
1,1-Dichloroethane	0/1	5.00E-03	2.7E-02		No		mg/L
1,1-Dichloroethene	0/11	1.00E-02	1.8E-03	9.3E-07	Yes	Yes	mg/L
1,2,4-Trichlorobenzene	0/6	4.00E-02	6.6E-03		Yes		mg/L
1,2-Dichlorobenzene	0/6	4.00E-02	1.2E-02		Yes		mg/L
1,2-Dichloroethane	0/5	5.00E-03	6.7E-04	1.1E-05	Yes	Yes	mg/L
1,2-Dichloropropane	0/1	5.00E-03	2.7E-04	7.6E-05	Yes	Yes	mg/L
1,2-Dimethylbenzene	0/1	5.00E-03	4.6E-02		No		mg/L
1,3-Dichlorobenzene	0/6	4.00E-02	5.3E-04		Yes		mg/L
1,4-Dichlorobenzene	0/6	4.00E-02	5.3E-02	2.0E-04	No	Yes	mg/L
2,4,5-Trichlorophenol	0/6	4.00E-02	2.0E-02		Yes		mg/L
2,4,6-Trichlorophenol	0/6	4.00E-02		4.0E-04		Yes	mg/L
2,4-Dichlorophenol	0/6	4.00E-02	4.1E-03		Yes		mg/L
2,4-Dimethylphenol	0/6	4.00E-02	3.9E-03		Yes		mg/L
2,4-Dinitrophenol	0/1	5.00E-03	3.0E-03		Yes		mg/L
2,4-Dinitrotoluene	0/6	4.00E-02	3.0E-03	7.7E-06	Yes	Yes	mg/L
2,6-Dinitrotoluene	0/6	4.00E-02	1.5E-03	7.7E-06	Yes	Yes	mg/L
2-Butanone	0/1	1.00E-02	6.2E-02		No		mg/L
2-Chloronaphthalene	0/6	4.00E-02	1.5E-02		Yes		mg/L
2-Chlorophenol	0/6	4.00E-02	1.0E-03		Yes		mg/L
2-Hexanone	0/1	1.00E-02					mg/L
2-Methyl-4,6-dinitrophenol	0/6	4.00E-02					mg/L
2-Methylnaphthalene	0/6	4.00E-02					mg/L

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Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SWMU 193A MEDIA-McNairy Groundwater
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
2-Methylphenol	0/6	4.00E-02	7.2E-02		No		mg/L
2-Nitroaniline	0/6	4.00E-02	1.2E-05		Yes		mg/L
2-Nitrophenol	0/6	4.00E-02					mg/L
3,3'-Dichlorobenzidine	0/6	4.00E-02		1.1E-05		Yes	mg/L
3-Nitroaniline	0/6	4.00E-02					mg/L
4-Bromophenyl phenyl ether	0/6	4.00E-02					mg/L
4-Chloro-3-methylphenol	0/6	4.00E-02					mg/L
4-Chloroaniline	0/6	4.00E-02	5.6E-03		Yes		mg/L
4-Chlorophenyl phenyl ether	0/6	4.00E-02					mg/L
4-Methyl-2-pentanone	0/1	1.00E-02	5.1E-03		Yes		mg/L
4-Methylphenol	0/6	4.00E-02	7.3E-03		Yes		mg/L
4-Nitroaniline	0/6	4.00E-02					mg/L
4-Nitrophenol	0/6	4.00E-02	1.3E-02		Yes		mg/L
Acenaphthene	0/6	4.00E-02	1.1E-02		Yes		mg/L
Acenaphthylene	0/6	4.00E-02					mg/L
Anthracene	0/6	4.00E-02	5.7E-02		No		mg/L
Benz(a)anthracene	0/6	4.00E-02		1.3E-06		Yes	mg/L
Benzene	0/1	5.00E-03	4.0E-04	3.5E-05	Yes	Yes	mg/L
Benzo(a)pyrene	0/6	4.00E-02		9.5E-08		Yes	mg/L
Benzo(b)fluoranthene	0/6	4.00E-02		9.3E-07		Yes	mg/L
Benzo(ghi)perylene	0/6	4.00E-02					mg/L
Benzo(k)fluoranthene	0/6	4.00E-02		1.7E-05		Yes	mg/L
Bromodichloromethane	0/1	5.00E-03	4.0E-03	8.4E-05	Yes	Yes	mg/L
Bromoform	0/1	5.00E-03	4.0E-03	2.2E-04	Yes	Yes	mg/L
Butyl benzyl phthalate	0/1	5.00E-03	2.6E-01		No		mg/L
Carbazole	0/6	4.00E-02		2.2E-04		Yes	mg/L
Carbon Disulfide	0/1	5.00E-03	3.5E-02		No		mg/L
Carbon Tetrachloride	0/5	5.00E-03	1.2E-04	1.5E-05	Yes	Yes	mg/L
Chlorobenzene	0/1	5.00E-03	1.3E-03		Yes		mg/L
Chloroethane	0/1	5.00E-03	3.1E-01		No		mg/L
Chloroform	0/1	5.00E-03	2.0E-03	1.5E-05	Yes	Yes	mg/L
Chloromethane	0/1	5.00E-03		1.3E-04		Yes	mg/L
Chrysene	0/6	4.00E-02		1.3E-04		Yes	mg/L
Di-n-butylphthalate	0/6	4.00E-02	1.3E-01		No		mg/L
Di-n-octylphthalate	0/6	4.00E-02	6.9E-04		Yes		mg/L
Dibenz(a,h)anthracene	0/6	4.00E-02		4.6E-08		Yes	mg/L
Dibenzofuran	0/6	4.00E-02	1.6E-03		Yes		mg/L
Dibromochloromethane	0/1	5.00E-03	4.0E-03	6.2E-05	Yes	Yes	mg/L
Dimethylphthalate	0/6	4.00E-02	1.5E+01		No		mg/L

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION-SWMU 193A MEDIA-McNairy Groundwater -----
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Ethylbenzene	0/1	5.00E-03	4.5E-02		No		mg/L
Fluoranthene	0/6	4.00E-02	2.3E-02		Yes		mg/L
Fluorene	0/6	4.00E-02	7.4E-03		Yes		mg/L
Hexachlorobenzene	0/6	4.00E-02	7.5E-04	1.9E-06	Yes	Yes	mg/L
Hexachlorobutadiene	0/6	4.00E-02	2.2E-04	4.8E-05	Yes	Yes	mg/L
Hexachlorocyclopentadiene	0/6	4.00E-02	9.8E-03		Yes		mg/L
Hexachloroethane	0/6	4.00E-02	1.3E-03	3.3E-04	Yes	Yes	mg/L
Indeno (1,2,3-cd)pyrene	0/6	4.00E-02		6.3E-07		Yes	mg/L
Isophorone	0/6	4.00E-02	3.0E-01	5.5E-03	No	Yes	mg/L
Methylene Chloride	0/1	1.00E-02	6.2E-02	3.6E-04	No	Yes	mg/L
N-Nitroso-di-n-propylamine	0/6	4.00E-02		7.4E-07		Yes	mg/L
N-Nitrosodiphenylamine	0/6	4.00E-02		9.5E-04		Yes	mg/L
Naphthalene	0/6	4.00E-02	2.0E-04		Yes		mg/L
Neptunium-237	0/1	-2.00E-02		1.3E-01		No	pCi/L
Nitrobenzene	0/6	4.00E-02	1.1E-04		Yes		mg/L
Pentachlorophenol	0/6	4.00E-02	2.3E-02	2.1E-05	Yes	Yes	mg/L
Phenanthrene	0/6	4.00E-02					mg/L
Phenol	0/6	4.00E-02	9.0E-01		No		mg/L
Plutonium-239	0/1	-6.00E-02		1.2E-01		No	pCi/L
Pyrene	0/6	4.00E-02	1.8E-02		Yes		mg/L
Pyridine	0/1	5.00E-03	1.5E-03		Yes		mg/L
Styrene	0/1	5.00E-03	4.5E-02		No		mg/L
Tetrachloroethene	0/1	5.00E-03	7.9E-03	5.7E-05	No	Yes	mg/L
Toluene	0/1	5.00E-03	2.4E-02		No		mg/L
Vinyl Chloride	0/7	5.00E-03		1.7E-06		Yes	mg/L
bis (2-Chloroethoxy)methane	0/6	4.00E-02					mg/L
bis (2-Chloroethyl) ether	0/6	4.00E-02		9.2E-07		Yes	mg/L
bis (2-Chloroisopropyl) ether	0/6	4.00E-02		2.4E-05		Yes	mg/L
bis (2-Ethylhexyl) phthalate	0/6	4.00E-02	2.6E-02	3.1E-04	Yes	Yes	mg/L
cis-1,3-Dichloropropene	0/1	5.00E-03					mg/L
m,p-Xylene	0/1	1.00E-02	4.0E-01		No		mg/L
trans-1,2-Dichloroethene	0/11	2.00E+00	4.0E-03		Yes		mg/L
trans-1,3-Dichloropropene	0/1	5.00E-03					mg/L

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SWMU 193A MEDIA-RGA Groundwater

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/16	5.00E+00	5.4E-02		Yes		mg/L
1,1,2,2-Tetrachloroethane	0/3	5.00E-03		5.0E-06		Yes	mg/L
1,1,2-Trichloroethane	0/10	2.50E-01	8.1E-04	1.8E-05	Yes	Yes	mg/L
1,1-Dichloroethane	0/10	2.50E-01	2.7E-02		Yes		mg/L
1,2,4-Trichlorobenzene	0/25	4.00E-02	6.6E-03		Yes		mg/L
1,2-Dichlorobenzene	0/25	4.00E-02	1.2E-02		Yes		mg/L
1,2-Dichloroethane	0/16	5.00E+00	6.7E-04	1.1E-05	Yes	Yes	mg/L
1,2-Dichloropropane	0/3	5.00E-03	2.7E-04	7.6E-05	Yes	Yes	mg/L
1,2-Dimethylbenzene	0/3	5.00E-03	4.6E-02		No		mg/L
1,3-Dichlorobenzene	0/25	4.00E-02	5.3E-04		Yes		mg/L
1,4-Dichlorobenzene	0/25	4.00E-02	5.3E-02	2.0E-04	No	Yes	mg/L
2,4,5-Trichlorophenol	0/25	4.00E-02	2.0E-02		Yes		mg/L
2,4,6-Trichlorophenol	0/25	4.00E-02		4.0E-04		Yes	mg/L
2,4-Dichlorophenol	0/25	4.00E-02	4.1E-03		Yes		mg/L
2,4-Dimethylphenol	0/25	4.00E-02	3.9E-03		Yes		mg/L
2,4-Dinitrophenol	0/6	2.00E-02	3.0E-03		Yes		mg/L
2,4-Dinitrotoluene	0/25	4.00E-02	3.0E-03	7.7E-06	Yes	Yes	mg/L
2,6-Dinitrotoluene	0/25	4.00E-02	1.5E-03	7.7E-06	Yes	Yes	mg/L
2-Butanone	0/3	1.00E-02	6.2E-02		No		mg/L
2-Chloronaphthalene	0/25	4.00E-02	1.5E-02		Yes		mg/L
2-Chlorophenol	0/25	4.00E-02	1.0E-03		Yes		mg/L
2-Hexanone	0/3	1.00E-02					mg/L
2-Methyl-4,6-dinitrophenol	0/25	4.00E-02					mg/L
2-Methylnaphthalene	0/25	4.00E-02					mg/L
2-Methylphenol	0/25	4.00E-02	7.2E-02		No		mg/L
2-Nitroaniline	0/25	4.00E-02	1.2E-05		Yes		mg/L
2-Nitrophenol	0/25	4.00E-02					mg/L
3,3'-Dichlorobenzidine	0/25	4.00E-02		1.1E-05		Yes	mg/L
3-Nitroaniline	0/25	4.00E-02					mg/L
4-Bromophenyl phenyl ether	0/25	4.00E-02					mg/L
4-Chloro-3-methylphenol	0/25	4.00E-02					mg/L
4-Chloroaniline	0/25	4.00E-02	5.6E-03		Yes		mg/L
4-Chlorophenyl phenyl ether	0/25	4.00E-02					mg/L
4-Methyl-2-pentanone	0/3	1.00E-02	5.1E-03		Yes		mg/L
4-Methylphenol	0/25	4.00E-02	7.3E-03		Yes		mg/L
4-Nitroaniline	0/25	4.00E-02					mg/L
4-Nitrophenol	0/25	4.00E-02	1.3E-02		Yes		mg/L
Acenaphthene	0/25	4.00E-02	1.1E-02		Yes		mg/L
Acenaphthylene	0/25	4.00E-02					mg/L
Acetone	0/3	1.00E-02	2.0E-02		No		mg/L

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Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION=SWMU 193A MEDIA-RGA Groundwater
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Anthracene	0/25	4.00E-02	5.7E-02		No		mg/L
Benz (a) anthracene	0/25	4.00E-02		1.3E-06		Yes	mg/L
Benzene	0/10	2.50E-01	4.0E-04	3.5E-05	Yes	Yes	mg/L
Benzo (a) pyrene	0/25	4.00E-02		9.5E-08		Yes	mg/L
Benzo (b) fluoranthene	0/25	4.00E-02		9.3E-07		Yes	mg/L
Benzo (ghi) perylene	0/25	4.00E-02					mg/L
Benzo (k) fluoranthene	0/25	4.00E-02		1.7E-05		Yes	mg/L
Bromodichloromethane	0/10	2.50E-01	4.0E-03	8.4E-05	Yes	Yes	mg/L
Bromoform	0/3	5.00E-03	4.0E-03	2.2E-04	Yes	Yes	mg/L
Butyl benzyl phthalate	0/6	2.00E-02	2.6E-01		No		mg/L
Carbazole	0/25	4.00E-02		2.2E-04		Yes	mg/L
Carbon Disulfide	0/3	5.00E-03	3.5E-02		No		mg/L
Carbon Tetrachloride	0/16	5.00E+00	1.2E-04	1.5E-05	Yes	Yes	mg/L
Chlorobenzene	0/3	5.00E-03	1.3E-03		Yes		mg/L
Chloroethane	0/4	2.50E-01	3.1E-01		No		mg/L
Chloroform	0/12	5.00E+00	2.0E-03	1.5E-05	Yes	Yes	mg/L
Chloromethane	0/3	5.00E-03		1.3E-04		Yes	mg/L
Chromium	0/4	5.00E-02	4.2E-03		Yes		mg/L
Chrysene	0/25	4.00E-02		1.3E-04		Yes	mg/L
Di-n-butylphthalate	0/25	4.00E-02	1.3E-01		No		mg/L
Di-n-octylphthalate	0/25	4.00E-02	6.9E-04		Yes		mg/L
Dibenz (a, h) anthracene	0/25	4.00E-02		4.6E-08		Yes	mg/L
Dibenzofuran	0/25	4.00E-02	1.6E-03		Yes		mg/L
Dibromochloromethane	0/3	5.00E-03	4.0E-03	6.2E-05	Yes	Yes	mg/L
Dimethylphthalate	0/25	4.00E-02	1.5E+01		No		mg/L
Ethane	0/1	3.00E-02					mg/L
Ethylbenzene	0/10	2.50E-01	4.5E-02		Yes		mg/L
Ethylene	0/1	3.00E-02					mg/L
Fluoranthene	0/25	4.00E-02	2.3E-02		Yes		mg/L
Fluorene	0/25	4.00E-02	7.4E-03		Yes		mg/L
Hexachlorobenzene	0/25	4.00E-02	7.5E-04	1.9E-06	Yes	Yes	mg/L
Hexachlorobutadiene	0/25	4.00E-02	2.2E-04	4.8E-05	Yes	Yes	mg/L
Hexachlorocyclopentadiene	0/25	4.00E-02	9.8E-03		Yes		mg/L
Hexachloroethane	0/25	4.00E-02	1.3E-03	3.3E-04	Yes	Yes	mg/L
Indeno (1,2,3-cd) pyrene	0/25	4.00E-02		6.3E-07		Yes	mg/L
Isophorone	0/25	4.00E-02	3.0E-01	5.5E-03	No	Yes	mg/L
Methylene Chloride	0/3	1.00E-02	6.2E-02	3.6E-04	No	Yes	mg/L
N-Nitroso-di-n-propylamine	0/25	4.00E-02		7.4E-07		Yes	mg/L
N-Nitrosodiphenylamine	0/25	4.00E-02		9.5E-04		Yes	mg/L

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Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION=SWMU 193A MEDIA=RGA Groundwater
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Naphthalene	0/25	4.00E-02	2.0E-04		Yes		mg/L
Neptunium-237	0/8	2.92E+01		1.3E-01		Yes	pCi/L
Nickel	0/4	5.00E-02	3.0E-02		Yes		mg/L
Nitrobenzene	0/25	4.00E-02	1.1E-04		Yes		mg/L
Phenanthrene	0/25	4.00E-02					mg/L
Phenol	0/25	4.00E-02	9.0E-01		No		mg/L
Plutonium-239	0/4	1.00E-02		1.2E-01		No	pCi/L
Plutonium-239/240	0/4	8.00E-02		1.2E-01		No	pCi/L
Pyrene	0/25	4.00E-02	1.8E-02		Yes		mg/L
Pyridine	0/2	1.00E-02	1.5E-03		Yes		mg/L
Styrene	0/3	5.00E-03	4.5E-02		No		mg/L
Sulfide	0/1	1.00E+00					mg/L
Tetrachloroethene	0/10	2.50E-01	7.9E-03	5.7E-05	Yes	Yes	mg/L
Toluene	0/10	2.50E-01	2.4E-02		Yes		mg/L
Uranium	0/4	1.00E-03	4.5E-03		No		mg/L
Uranium-234	0/2	2.99E+01		8.7E-01		Yes	pCi/L
Uranium-238	0/2	0.00E+00		6.2E-01		No	pCi/L
Vinyl Chloride	0/39	1.00E+01		1.7E-06		Yes	mg/L
Xylene	0/7	5.00E-01	4.0E-01		Yes		mg/L
bis(2-Chloroethoxy)methane	0/25	4.00E-02					mg/L
bis(2-Chloroethyl) ether	0/25	4.00E-02		9.2E-07		Yes	mg/L
bis(2-Chloroisopropyl) ether	0/25	4.00E-02		2.4E-05		Yes	mg/L
cis-1,3-Dichloropropene	0/3	5.00E-03					mg/L
m,p-Xylene	0/3	1.00E-02	4.0E-01		No		mg/L
trans-1,3-Dichloropropene	0/3	5.00E-03					mg/L

LOCATION=SWMU 193A MEDIA=Subsurface Soil

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/6	1.00E-02	1.2E+02		No		mg/kg
1,1,2,2-Tetrachloroethane	0/6	1.00E-02		1.8E-02		No	mg/kg
1,1,2-Trichloroethane	0/6	1.00E-02	3.1E+00	4.6E-02	No	No	mg/kg
1,1-Dichloroethane	0/6	1.00E-02	6.7E+01		No		mg/kg
1,1-Dichloroethene	0/8	4.40E-01	3.5E+00	3.9E-03	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/8	5.00E-01	2.5E+01		No		mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION-SWMU 193A MEDIA-Subsurface Soil -----
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,2-Dichlorobenzene	0/8	5.00E-01	7.6E+01		No		mg/kg
1,2-Dichloroethane	0/6	1.00E-02	4.3E+00	2.2E-02	No	No	mg/kg
1,2-Dichloropropane	0/6	1.00E-02	1.6E+00	8.7E-02	No	No	mg/kg
1,2-Dimethylbenzene	0/6	1.00E-02	3.9E+02		No		mg/kg
1,3-Dichlorobenzene	0/8	5.00E-01	3.3E+01		No		mg/kg
1,4-Dichlorobenzene	0/8	5.00E-01	1.1E+03	2.9E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/8	5.00E-01	1.6E+02		No		mg/kg
2,4,6-Trichlorophenol	0/8	5.00E-01		8.1E-01		No	mg/kg
2,4-Dichlorophenol	0/8	5.00E-01	6.8E+00		No		mg/kg
2,4-Dimethylphenol	0/8	5.00E-01	3.1E+01		No		mg/kg
2,4-Dinitrophenol	0/6	5.00E-01	5.0E+00		No		mg/kg
2,4-Dinitrotoluene	0/8	5.00E-01	4.7E+00	2.1E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/8	5.00E-01	2.3E+00	2.1E-02	No	Yes	mg/kg
2-Butanone	0/1	1.00E-02	3.9E+02		No		mg/kg
2-Chloronaphthalene	0/8	5.00E-01	1.1E+02		No		mg/kg
2-Chlorophenol	0/8	5.00E-01	7.0E+00		No		mg/kg
2-Hexanone	0/6	1.00E-02					mg/kg
2-Methyl-4,6-dinitrophenol	0/8	5.00E-01					mg/kg
2-Methylnaphthalene	0/8	5.00E-01					mg/kg
2-Methylphenol	0/8	5.00E-01	7.8E+01		No		mg/kg
2-Nitroaniline	0/8	5.00E-01	7.0E-02		Yes		mg/kg
2-Nitrophenol	0/8	5.00E-01					mg/kg
3,3'-Dichlorobenzidine	0/8	5.00E-01		2.1E-02		Yes	mg/kg
3-Nitroaniline	0/8	5.00E-01					mg/kg
4-Bromophenyl phenyl ether	0/8	5.00E-01					mg/kg
4-Chloro-3-methylphenol	0/8	5.00E-01					mg/kg
4-Chloroaniline	0/8	5.00E-01	6.3E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/8	5.00E-01					mg/kg
4-Methyl-2-pentanone	0/6	1.00E-02	3.3E+01		No		mg/kg
4-Methylphenol	0/8	5.00E-01	9.6E+00		No		mg/kg
4-Nitroaniline	0/8	5.00E-01					mg/kg
4-Nitrophenol	0/8	5.00E-01	1.6E+02		No		mg/kg
Acenaphthene	0/8	5.00E-01	6.4E+01		No		mg/kg
Acenaphthylene	0/8	5.00E-01					mg/kg
Americium-241	0/8	9.40E+00		1.5E+00		Yes	pCi/g
Antimony	0/8	2.00E+01	6.4E-02		Yes		mg/kg
Arsenic	0/8	5.00E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Benzene	0/6	1.00E-02	1.8E+00	5.1E-02	No	No	mg/kg
Benzo (k) fluoranthene	0/8	5.00E-01		8.5E-02		Yes	mg/kg

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Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SWMU 193A MEDIA-Subsurface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Boron	0/8	1.00E+02	3.3E+02		No		mg/kg
Bromodichloromethane	0/6	1.00E-02	1.9E+01	1.2E-01	No	No	mg/kg
Bromoform	0/6	1.00E-02	1.6E+01	5.4E-01	No	No	mg/kg
Bromomethane	0/6	1.00E-02	6.2E-01		No		mg/kg
Butyl benzyl phthalate	0/6	5.00E-01	3.7E+02		No		mg/kg
Cadmium	0/8	2.00E+00	3.8E-01	3.3E+03	Yes	No	mg/kg
Carbazole	0/8	5.00E-01		6.1E-01		No	mg/kg
Carbon Disulfide	0/6	1.00E-02	4.6E+01		No		mg/kg
Carbon Tetrachloride	0/6	1.00E-02	2.7E-01	1.6E-02	No	No	mg/kg
Cesium-137	0/8	1.10E+00		1.6E-02		Yes	pCi/g
Chlorobenzene	0/6	1.00E-02	5.6E+00		No		mg/kg
Chloroethane	0/6	1.00E-02	2.8E+02		No		mg/kg
Chloroform	0/6	1.00E-02	2.4E+00	2.1E-02	No	No	mg/kg
Chloromethane	0/6	1.00E-02		1.3E-01		No	mg/kg
Cobalt-60	0/8	4.00E+00		3.3E-03		Yes	pCi/g
Cyanide	0/8	1.00E+00	2.3E+01		No		mg/kg
Dibenzofuran	0/8	5.00E-01	6.3E+00		No		mg/kg
Dibromochloromethane	0/6	1.00E-02	1.5E+01	5.9E-02	No	No	mg/kg
Dimethylphthalate	0/8	5.00E-01	2.4E+04		No		mg/kg
Ethylbenzene	0/6	1.00E-02	1.1E+02		No		mg/kg
Fluorene	0/8	5.00E-01	6.3E+01		No		mg/kg
Hexachlorobenzene	0/8	5.00E-01	1.3E+00	5.4E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/8	5.00E-01	3.0E-01	1.0E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/8	5.00E-01	1.0E+00		No		mg/kg
Hexachloroethane	0/8	5.00E-01	1.5E+00	5.8E-01	No	No	mg/kg
Isophorone	0/8	5.00E-01	3.0E+02	9.9E+00	No	No	mg/kg
Lead	0/8	2.00E+01	1.0E-04		Yes		mg/kg
Mercury	0/8	2.00E-01	1.4E-01		Yes		mg/kg
Methylene Chloride	0/6	1.20E-02	7.0E+01	5.0E-01	No	No	mg/kg
N-Nitroso-di-n-propylamine	0/8	5.00E-01		7.3E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/8	5.00E-01		1.0E+00		No	mg/kg
Naphthalene	0/8	5.00E-01	1.3E+01		No		mg/kg
Nitrobenzene	0/8	5.00E-01	6.1E-01		No		mg/kg
PCB-1016	0/8	1.24E-01	2.3E-01	9.9E-03	No	Yes	mg/kg
PCB-1221	0/8	1.24E-01		1.1E-02		Yes	mg/kg
PCB-1232	0/8	1.24E-01		1.1E-02		Yes	mg/kg
PCB-1242	0/8	1.24E-01		9.7E-03		Yes	mg/kg
PCB-1248	0/8	1.24E-01		1.1E-02		Yes	mg/kg
PCB-1254	0/8	1.24E-01	6.6E-02	9.9E-03	Yes	Yes	mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION=SWMU 193A MEDIA=Subsurface Soil -----
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
PCB-1260	0/8	1.24E-01		9.8E-03		Yes	mg/kg
PCB-1268	0/2	1.00E-01					mg/kg
Pentachlorophenol	0/8	5.00E-01	7.9E+01	1.3E-01	No	Yes	mg/kg
Phenanthrene	0/8	5.00E-01					mg/kg
Phenol	0/8	5.00E-01	1.4E+03		No		mg/kg
Polychlorinated biphenyl	0/2	1.00E-01		1.0E-02		Yes	mg/kg
Protactinium-234m	0/8	5.80E+02		4.9E-03		Yes	pCi/g
Pyridine	0/1	3.80E-01	1.3E+00		No		mg/kg
Selenium	0/8	5.00E+00	1.2E+01		No		mg/kg
Styrene	0/6	1.00E-02	1.9E+02		No		mg/kg
Technetium-99	0/8	1.37E+00		4.4E+02		No	pCi/g
Tetrachloroethene	0/6	1.00E-02	1.2E+01	1.3E-01	No	No	mg/kg
Thallium	0/8	1.50E+01					mg/kg
Thorium-234	0/8	2.10E+01		7.2E+00		Yes	pCi/g
Toluene	0/6	1.00E-02	9.8E+01		No		mg/kg
Trichloroethene	0/8	4.40E-01	1.2E+00	9.1E-02	No	Yes	mg/kg
Uranium-235	0/8	8.20E+00		1.2E-01		Yes	pCi/g
Vinyl Chloride	0/8	1.00E+02		1.5E-03		Yes	mg/kg
bis(2-Chloroethoxy)methane	0/8	5.00E-01					mg/kg
bis(2-Chloroethyl) ether	0/8	5.00E-01		5.9E-03		Yes	mg/kg
bis(2-Chloroisopropyl) ether	0/8	5.00E-01		1.1E-01		Yes	mg/kg
cis-1,2-Dichloroethene	0/8	5.00E-01	6.1E+00		No		mg/kg
cis-1,3-Dichloropropene	0/6	1.00E-02					mg/kg
m,p-Xylene	0/6	2.00E-02	1.7E+03		No		mg/kg
trans-1,2-Dichloroethene	0/8	5.00E-01	1.1E+01		No		mg/kg
trans-1,3-Dichloropropene	0/6	1.00E-02					mg/kg

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/3	1.00E-02	1.2E+02		No		mg/kg
1,1,2,2-Tetrachloroethane	0/3	1.00E-02		1.8E-02		No	mg/kg
1,1,2-Trichloroethane	0/3	1.00E-02	3.1E+00	4.6E-02	No	No	mg/kg
1,1-Dichloroethane	0/3	1.00E-02	6.7E+01		No		mg/kg
1,1-Dichloroethene	0/4	3.07E-01	3.5E+00	3.9E-03	No	Yes	mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION=SWMU 193A MEDIA=Surface Soil -----
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,2,4-Trichlorobenzene	0/4	5.00E-01	2.5E+01		No		mg/kg
1,2-Dichlorobenzene	0/4	5.00E-01	7.6E+01		No		mg/kg
1,2-Dichloroethane	0/3	1.00E-02	4.3E+00	2.2E-02	No	No	mg/kg
1,2-Dichloropropane	0/3	1.00E-02	1.6E+00	8.7E-02	No	No	mg/kg
1,2-Dimethylbenzene	0/3	1.00E-02	3.9E+02		No		mg/kg
1,3-Dichlorobenzene	0/4	5.00E-01	3.3E+01		No		mg/kg
1,4-Dichlorobenzene	0/4	5.00E-01	1.1E+03	2.9E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/4	5.00E-01	1.6E+02		No		mg/kg
2,4,6-Trichlorophenol	0/4	5.00E-01		8.1E-01		No	mg/kg
2,4-Dichlorophenol	0/4	5.00E-01	6.8E+00		No		mg/kg
2,4-Dimethylphenol	0/4	5.00E-01	3.1E+01		No		mg/kg
2,4-Dinitrophenol	0/3	5.00E-01	5.0E+00		No		mg/kg
2,4-Dinitrotoluene	0/4	5.00E-01	4.7E+00	2.1E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/4	5.00E-01	2.3E+00	2.1E-02	No	Yes	mg/kg
2-Chloronaphthalene	0/4	5.00E-01	1.1E+02		No		mg/kg
2-Chlorophenol	0/4	5.00E-01	7.0E+00		No		mg/kg
2-Hexanone	0/3	1.00E-02					mg/kg
2-Methyl-4,6-dinitrophenol	0/4	5.00E-01					mg/kg
2-Methylnaphthalene	0/4	5.00E-01					mg/kg
2-Methylphenol	0/4	5.00E-01	7.8E+01		No		mg/kg
2-Nitroaniline	0/4	5.00E-01	7.0E-02		Yes		mg/kg
2-Nitrophenol	0/4	5.00E-01					mg/kg
3,3'-Dichlorobenzidine	0/4	5.00E-01		2.1E-02		Yes	mg/kg
3-Nitroaniline	0/4	5.00E-01					mg/kg
4-Bromophenyl phenyl ether	0/4	5.00E-01					mg/kg
4-Chloro-3-methylphenol	0/4	5.00E-01					mg/kg
4-Chloroaniline	0/4	5.00E-01	6.3E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/4	5.00E-01					mg/kg
4-Methyl-2-pentanone	0/3	1.00E-02	3.3E+01		No		mg/kg
4-Methylphenol	0/4	5.00E-01	9.6E+00		No		mg/kg
4-Nitroaniline	0/4	5.00E-01					mg/kg
4-Nitrophenol	0/4	5.00E-01	1.6E+02		No		mg/kg
Acenaphthene	0/4	5.00E-01	6.4E+01		No		mg/kg
Acenaphthylene	0/4	5.00E-01					mg/kg
Americium-241	0/4	7.20E+00		1.5E+00		Yes	pCi/g
Antimony	0/4	2.00E+01	6.4E-02		Yes		mg/kg
Arsenic	0/4	5.00E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Benzene	0/3	1.00E-02	1.8E+00	5.1E-02	No	No	mg/kg
Benzo(k)fluoranthene	0/4	5.00E-01		8.5E-02		Yes	mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SWMU 193A MEDIA-Surface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Boron	0/4	1.00E+02	3.3E+02		No		mg/kg
Bromodichloromethane	0/3	1.00E-02	1.9E+01	1.2E-01	No	No	mg/kg
Bromoform	0/3	1.00E-02	1.6E+01	5.4E-01	No	No	mg/kg
Bromomethane	0/3	1.00E-02	6.2E-01		No		mg/kg
Butyl benzyl phthalate	0/3	5.00E-01	3.7E+02		No		mg/kg
Cadmium	0/4	2.00E+00	3.8E-01	3.3E+03	Yes	No	mg/kg
Carbazole	0/4	5.00E-01		6.1E-01		No	mg/kg
Carbon Disulfide	0/3	1.00E-02	4.6E+01		No		mg/kg
Carbon Tetrachloride	0/3	1.00E-02	2.7E-01	1.6E-02	No	No	mg/kg
Cesium-137	0/4	9.00E-01		1.6E-02		Yes	pCi/g
Chlorobenzene	0/3	1.00E-02	5.6E+00		No		mg/kg
Chloroethane	0/3	1.00E-02	2.8E+02		No		mg/kg
Chloroform	0/3	1.00E-02	2.4E+00	2.1E-02	No	No	mg/kg
Chloromethane	0/3	1.00E-02		1.3E-01		No	mg/kg
Cobalt-60	0/4	4.00E+00		3.3E-03		Yes	pCi/g
Cyanide	0/4	1.00E+00	2.3E+01		No		mg/kg
Dibenzofuran	0/4	5.00E-01	6.3E+00		No		mg/kg
Dibromochloromethane	0/3	1.00E-02	1.5E+01	5.9E-02	No	No	mg/kg
Dimethylphthalate	0/4	5.00E-01	2.4E+04		No		mg/kg
Ethylbenzene	0/3	1.00E-02	1.1E+02		No		mg/kg
Fluorene	0/4	5.00E-01	6.3E+01		No		mg/kg
Hexachlorobenzene	0/4	5.00E-01	1.3E+00	5.4E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/4	5.00E-01	3.0E-01	1.0E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/4	5.00E-01	1.0E+00		No		mg/kg
Hexachloroethane	0/4	5.00E-01	1.5E+00	5.8E-01	No	No	mg/kg
Isophorone	0/4	5.00E-01	3.0E+02	9.9E+00	No	No	mg/kg
Lead	0/4	2.00E+01	1.0E-04		Yes		mg/kg
Mercury	0/4	2.00E-01	1.4E-01		Yes		mg/kg
Methylene Chloride	0/3	1.20E-02	7.0E+01	5.0E-01	No	No	mg/kg
N-Nitroso-di-n-propylamine	0/4	5.00E-01		7.3E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/4	5.00E-01		1.0E+00		No	mg/kg
Naphthalene	0/4	5.00E-01	1.3E+01		No		mg/kg
Nitrobenzene	0/4	5.00E-01	6.1E-01		No		mg/kg
PCB-1016	0/4	1.14E-01	2.3E-01	9.9E-03	No	Yes	mg/kg
PCB-1221	0/4	1.14E-01		1.1E-02		Yes	mg/kg
PCB-1232	0/4	1.14E-01		1.1E-02		Yes	mg/kg
PCB-1242	0/4	1.14E-01		9.7E-03		Yes	mg/kg
PCB-1248	0/4	1.14E-01		1.1E-02		Yes	mg/kg
PCB-1254	0/4	1.14E-01	6.6E-02	9.9E-03	Yes	Yes	mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SWMU 193A MEDIA-Surface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
PCB-1260	0/4	1.14E-01		9.8E-03		Yes	mg/kg
PCB-1268	0/1	1.00E-01					mg/kg
Pentachlorophenol	0/4	5.00E-01	7.9E+01	1.3E-01	No	Yes	mg/kg
Phenanthrene	0/4	5.00E-01					mg/kg
Phenol	0/4	5.00E-01	1.4E+03		No		mg/kg
Polychlorinated biphenyl	0/1	1.00E-01		1.0E-02		Yes	mg/kg
Protactinium-234m	0/4	5.80E+02		4.9E-03		Yes	pCi/g
Pyridine	0/1	3.80E-01	1.3E+00		No		mg/kg
Selenium	0/4	5.00E+00	1.2E+01		No		mg/kg
Silver	0/4	4.00E+00	6.1E+00		No		mg/kg
Styrene	0/3	1.00E-02	1.9E+02		No		mg/kg
Technetium-99	0/4	1.09E+00		4.4E+02		No	pCi/g
Tetrachloroethene	0/3	1.00E-02	1.2E+01	1.3E-01	No	No	mg/kg
Thallium	0/4	1.50E+01					mg/kg
Thorium-234	0/4	1.80E+01		7.2E+00		Yes	pCi/g
Toluene	0/3	1.00E-02	9.8E+01		No		mg/kg
Trichloroethene	0/4	3.07E-01	1.2E+00	9.1E-02	No	Yes	mg/kg
Uranium-235	0/4	6.30E+00		1.2E-01		Yes	pCi/g
Vinyl Chloride	0/4	3.07E-01		1.5E-03		Yes	mg/kg
bis(2-Chloroethoxy)methane	0/4	5.00E-01					mg/kg
bis(2-Chloroethyl) ether	0/4	5.00E-01		5.9E-03		Yes	mg/kg
bis(2-Chloroisopropyl) ether	0/4	5.00E-01		1.1E-01		Yes	mg/kg
cis-1,2-Dichloroethene	0/4	3.07E-01	6.1E+00		No		mg/kg
cis-1,3-Dichloropropene	0/3	1.00E-02					mg/kg
m,p-Xylene	0/3	2.00E-02	1.7E+03		No		mg/kg
trans-1,2-Dichloroethene	0/4	3.07E-01	1.1E+01		No		mg/kg
trans-1,3-Dichloropropene	0/3	1.00E-02					mg/kg

LOCATION-SWMU 193B MEDIA-McNairy Groundwater

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/1	5.00E-03	5.4E-02		No		mg/L
1,1-Dichloroethene	0/2	1.00E-02	1.8E-03	9.3E-07	Yes	Yes	mg/L
1,2,4-Trichlorobenzene	0/1	1.00E-01	6.6E-03		Yes		mg/L
1,2-Dichlorobenzene	0/1	1.00E-01	1.2E-02		Yes		mg/L

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium.

----- LOCATION-SWMU 193B MEDIA-McNairy Groundwater -----
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,2-Dichloroethane	0/1	2.00E+00	6.7E-04	1.1E-05	Yes	Yes	mg/L
1,3-Dichlorobenzene	0/1	1.00E-01	5.3E-04		Yes		mg/L
1,4-Dichlorobenzene	0/1	1.00E-01	5.3E-02	2.0E-04	Yes	Yes	mg/L
2,4,5-Trichlorophenol	0/1	1.00E-01	2.0E-02		Yes		mg/L
2,4,6-Trichlorophenol	0/1	1.00E-01		4.0E-04		Yes	mg/L
2,4-Dichlorophenol	0/1	1.00E-01	4.1E-03		Yes		mg/L
2,4-Dimethylphenol	0/1	1.00E-01	3.9E-03		Yes		mg/L
2,4-Dinitrotoluene	0/1	1.00E-01	3.0E-03	7.7E-06	Yes	Yes	mg/L
2,6-Dinitrotoluene	0/1	1.00E-01	1.5E-03	7.7E-06	Yes	Yes	mg/L
2-Chloronaphthalene	0/1	1.00E-01	1.5E-02		Yes		mg/L
2-Chlorophenol	0/1	1.00E-01	1.0E-03		Yes		mg/L
2-Methyl-4,6-dinitrophenol	0/1	1.00E-01					mg/L
2-Methylnaphthalene	0/1	1.00E-01					mg/L
2-Methylphenol	0/1	1.00E-01	7.2E-02		Yes		mg/L
2-Nitroaniline	0/1	1.00E-01	1.2E-05		Yes		mg/L
2-Nitrophenol	0/1	1.00E-01					mg/L
3,3'-Dichlorobenzidine	0/1	1.00E-01		1.1E-05		Yes	mg/L
3-Nitroaniline	0/1	1.00E-01					mg/L
4-Bromophenyl phenyl ether	0/1	1.00E-01					mg/L
4-Chloro-3-methylphenol	0/1	1.00E-01					mg/L
4-Chloroaniline	0/1	1.00E-01	5.6E-03		Yes		mg/L
4-Chlorophenyl phenyl ether	0/1	1.00E-01					mg/L
4-Methylphenol	0/1	1.00E-01	7.3E-03		Yes		mg/L
4-Nitroaniline	0/1	1.00E-01					mg/L
4-Nitrophenol	0/1	1.00E-01	1.3E-02		Yes		mg/L
Acenaphthene	0/1	1.00E-01	1.1E-02		Yes		mg/L
Acenaphthylene	0/1	1.00E-01					mg/L
Anthracene	0/1	1.00E-01	5.7E-02		Yes		mg/L
Benz(a)anthracene	0/1	1.00E-01		1.3E-06		Yes	mg/L
Benzo(a)pyrene	0/1	1.00E-01		9.5E-08		Yes	mg/L
Benzo(b)fluoranthene	0/1	1.00E-01		9.3E-07		Yes	mg/L
Benzo(ghi)perylene	0/1	1.00E-01					mg/L
Benzo(k)fluoranthene	0/1	1.00E-01		1.7E-05		Yes	mg/L
Carbazole	0/1	1.00E-01		2.2E-04		Yes	mg/L
Carbon Tetrachloride	0/1	5.00E-03	1.2E-04	1.5E-05	Yes	Yes	mg/L
Chloroform	0/1	5.00E-03	2.0E-03	1.5E-05	Yes	Yes	mg/L
Chrysene	0/1	1.00E-01		1.3E-04		Yes	mg/L
Di-n-butylphthalate	0/1	1.00E-01	1.3E-01		No		mg/L
Di-n-octylphthalate	0/1	1.00E-01	6.9E-04		Yes		mg/L

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION-SWMU 193B MEDIA-McNairy Groundwater -----
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Dibenz (a, h) anthracene	0/1	1.00E-01		4.6E-08		Yes	mg/L
Dibenzofuran	0/1	1.00E-01	1.6E-03		Yes		mg/L
Diethylphthalate	0/1	1.00E-01	1.2E+00		No		mg/L
Dimethylphthalate	0/1	1.00E-01	1.5E+01		No		mg/L
Fluoranthene	0/1	1.00E-01	2.3E-02		Yes		mg/L
Fluorene	0/1	1.00E-01	7.4E-03		Yes		mg/L
Hexachlorobenzene	0/1	1.00E-01	7.5E-04	1.9E-06	Yes	Yes	mg/L
Hexachlorobutadiene	0/1	1.00E-01	2.2E-04	4.8E-05	Yes	Yes	mg/L
Hexachlorocyclopentadiene	0/1	1.00E-01	9.8E-03		Yes		mg/L
Hexachloroethane	0/1	1.00E-01	1.3E-03	3.3E-04	Yes	Yes	mg/L
Indeno (1, 2, 3-cd) pyrene	0/1	1.00E-01		6.3E-07		Yes	mg/L
Isophorone	0/1	1.00E-01	3.0E-01	5.5E-03	No	Yes	mg/L
N-Nitroso-di-n-propylamine	0/1	1.00E-01		7.4E-07		Yes	mg/L
N-Nitrosodiphenylamine	0/1	1.00E-01		9.5E-04		Yes	mg/L
Naphthalene	0/1	1.00E-01	2.0E-04		Yes		mg/L
Nitrobenzene	0/1	1.00E-01	1.1E-04		Yes		mg/L
Pentachlorophenol	0/1	1.00E-01	2.3E-02	2.1E-05	Yes	Yes	mg/L
Phenanthrene	0/1	1.00E-01					mg/L
Phenol	0/1	1.00E-01	9.0E-01		No		mg/L
Pyrene	0/1	1.00E-01	1.8E-02		Yes		mg/L
Technetium-99	0/2	5.70E+00		2.8E+01		No	pCi/L
Vinyl Chloride	0/2	1.00E-02		1.7E-06		Yes	mg/L
bis (2-Chloroethoxy) methane	0/1	1.00E-01					mg/L
bis (2-Chloroethyl) ether	0/1	1.00E-01		9.2E-07		Yes	mg/L
bis (2-Chloroisopropyl) ether	0/1	1.00E-01		2.4E-05		Yes	mg/L
bis (2-Ethylhexyl) phthalate	0/1	1.00E-01	2.6E-02	3.1E-04	Yes	Yes	mg/L
trans-1,2-Dichloroethane	0/2	2.00E+00	4.0E-03		Yes		mg/L

----- LOCATION-SWMU 193B MEDIA-RGA Groundwater -----

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/5	5.00E-02	5.4E-02		No		mg/L
1,1,2,2-Tetrachloroethane	0/2	5.00E-03		5.0E-06		Yes	mg/L
1,1,2-Trichloroethane	0/2	5.00E-03	8.1E-04	1.8E-05	Yes	Yes	mg/L
1,1-Dichloroethane	0/2	5.00E-03	2.7E-02		No		mg/L

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION=SWMU 193B MEDIA=RGA Groundwater -----
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,2,4-Trichlorobenzene	0/10	2.00E-02	6.6E-03		Yes		mg/L
1,2-Dichlorobenzene	0/10	2.00E-02	1.2E-02		Yes		mg/L
1,2-Dichloroethane	0/5	2.00E+00	6.7E-04	1.1E-05	Yes	Yes	mg/L
1,2-Dichloropropane	0/2	5.00E-03	2.7E-04	7.6E-05	Yes	Yes	mg/L
1,2-Dimethylbenzene	0/2	5.00E-03	4.6E-02		No		mg/L
1,3-Dichlorobenzene	0/10	2.00E-02	5.3E-04		Yes		mg/L
1,4-Dichlorobenzene	0/10	2.00E-02	5.3E-02	2.0E-04	No	Yes	mg/L
2,4,5-Trichlorophenol	0/10	2.00E-02	2.0E-02		Yes		mg/L
2,4,6-Trichlorophenol	0/10	2.00E-02		4.0E-04		Yes	mg/L
2,4-Dichlorophenol	0/10	2.00E-02	4.1E-03		Yes		mg/L
2,4-Dimethylphenol	0/10	2.00E-02	3.9E-03		Yes		mg/L
2,4-Dinitrophenol	0/1	5.00E-03	3.0E-03		Yes		mg/L
2,4-Dinitrotoluene	0/10	2.00E-02	3.0E-03	7.7E-06	Yes	Yes	mg/L
2,6-Dinitrotoluene	0/10	2.00E-02	1.5E-03	7.7E-06	Yes	Yes	mg/L
2-Butanone	0/2	1.00E-02	6.2E-02		No		mg/L
2-Chloronaphthalene	0/10	2.00E-02	1.5E-02		Yes		mg/L
2-Chlorophenol	0/10	2.00E-02	1.0E-03		Yes		mg/L
2-Hexanone	0/2	1.00E-02					mg/L
2-Methyl-4,6-dinitrophenol	0/10	2.00E-02					mg/L
2-Methylnaphthalene	0/10	2.00E-02					mg/L
2-Methylphenol	0/10	2.00E-02	7.2E-02		No		mg/L
2-Nitroaniline	0/10	2.00E-02	1.2E-05		Yes		mg/L
2-Nitrophenol	0/10	2.00E-02					mg/L
3,3'-Dichlorobenzidine	0/10	2.00E-02		1.1E-05		Yes	mg/L
3-Nitroaniline	0/10	2.00E-02					mg/L
4-Bromophenyl phenyl ether	0/10	2.00E-02					mg/L
4-Chloro-3-methylphenol	0/10	2.00E-02					mg/L
4-Chloroaniline	0/10	2.00E-02	5.6E-03		Yes		mg/L
4-Chlorophenyl phenyl ether	0/10	2.00E-02					mg/L
4-Methyl-2-pentanone	0/2	1.00E-02	5.1E-03		Yes		mg/L
4-Methylphenol	0/10	2.00E-02	7.3E-03		Yes		mg/L
4-Nitroaniline	0/10	2.00E-02					mg/L
4-Nitrophenol	0/10	2.00E-02	1.3E-02		Yes		mg/L
Acenaphthene	0/10	2.00E-02	1.1E-02		Yes		mg/L
Acenaphthylene	0/10	2.00E-02					mg/L
Anthracene	0/10	2.00E-02	5.7E-02		No		mg/L
Benz(a)anthracene	0/10	2.00E-02		1.3E-06		Yes	mg/L
Benzene	0/2	5.00E-03	4.0E-04	3.5E-05	Yes	Yes	mg/L
Benzo(a)pyrene	0/10	2.00E-02		9.5E-08		Yes	mg/L

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION=SMMU 193B MEDIA=RGA Groundwater
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Benzo (b) fluoranthene	0/10	2.00E-02		9.3E-07		Yes	mg/L
Benzo (ghi) perylene	0/10	2.00E-02					mg/L
Benzo (k) fluoranthene	0/10	2.00E-02		1.7E-05		Yes	mg/L
Bromodichloromethane	0/2	5.00E-03	4.0E-03	8.4E-05	Yes	Yes	mg/L
Bromoform	0/2	5.00E-03	4.0E-03	2.2E-04	Yes	Yes	mg/L
Butyl benzyl phthalate	0/1	5.00E-03	2.6E-01		No		mg/L
Carbazole	0/10	2.00E-02		2.2E-04		Yes	mg/L
Carbon Disulfide	0/2	5.00E-03	3.5E-02		No		mg/L
Chlorobenzene	0/2	5.00E-03	1.3E-03		Yes		mg/L
Chloroethane	0/2	5.00E-03	3.1E-01		No		mg/L
Chloroform	0/5	5.00E-02	2.0E-03	1.5E-05	Yes	Yes	mg/L
Chloromethane	0/2	5.00E-03		1.3E-04		Yes	mg/L
Chrysene	0/10	2.00E-02		1.3E-04		Yes	mg/L
Di-n-octylphthalate	0/10	2.00E-02	6.9E-04		Yes		mg/L
Dibenz (a, h) anthracene	0/10	2.00E-02		4.6E-08		Yes	mg/L
Dibenzofuran	0/10	2.00E-02	1.6E-03		Yes		mg/L
Dibromochloromethane	0/2	5.00E-03	4.0E-03	6.2E-05	Yes	Yes	mg/L
Diethylphthalate	0/10	2.00E-02	1.2E+00		No		mg/L
Dimethylphthalate	0/10	2.00E-02	1.5E+01		No		mg/L
Ethylbenzene	0/2	5.00E-03	4.5E-02		No		mg/L
Fluoranthene	0/10	2.00E-02	2.3E-02		No		mg/L
Fluorene	0/10	2.00E-02	7.4E-03		Yes		mg/L
Hexachlorobenzene	0/10	2.00E-02	7.5E-04	1.9E-06	Yes	Yes	mg/L
Hexachlorobutadiene	0/10	2.00E-02	2.2E-04	4.8E-05	Yes	Yes	mg/L
Hexachlorocyclopentadiene	0/10	2.00E-02	9.8E-03		Yes		mg/L
Hexachloroethane	0/10	2.00E-02	1.3E-03	3.3E-04	Yes	Yes	mg/L
Indeno (1, 2, 3-cd) pyrene	0/10	2.00E-02		6.3E-07		Yes	mg/L
Isophorone	0/10	2.00E-02	3.0E-01	5.5E-03	No	Yes	mg/L
Methylene Chloride	0/2	1.00E-02	6.2E-02	3.6E-04	No	Yes	mg/L
N-Nitroso-di-n-propylamine	0/10	2.00E-02		7.4E-07		Yes	mg/L
N-Nitrosodiphenylamine	0/10	2.00E-02		9.5E-04		Yes	mg/L
Naphthalene	0/10	2.00E-02	2.0E-04		Yes		mg/L
Neptunium-237	0/1	-2.34E-03		1.3E-01		No	pCi/L
Nitrobenzene	0/10	2.00E-02	1.1E-04		Yes		mg/L
Pentachlorophenol	0/10	2.00E-02	2.3E-02	2.1E-05	No	Yes	mg/L
Phenanthrene	0/10	2.00E-02					mg/L
Phenol	0/10	2.00E-02	9.0E-01		No		mg/L
Pyrene	0/10	2.00E-02	1.8E-02		Yes		mg/L
Pyridine	0/1	5.00E-03	1.5E-03		Yes		mg/L

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SWMU 193B MEDIA-RGA Groundwater
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Styrene	0/2	5.00E-03	4.5E-02		No		mg/L
Tetrachloroethene	0/2	5.00E-03	7.9E-03	5.7E-05	No	Yes	mg/L
Toluene	0/2	5.00E-03	2.4E-02		No		mg/L
Vinyl Chloride	0/17	1.00E-01		1.7E-06		Yes	mg/L
bis(2-Chloroethoxy)methane	0/10	2.00E-02					mg/L
bis(2-Chloroethyl)ether	0/10	2.00E-02		9.2E-07		Yes	mg/L
bis(2-Chloroisopropyl)ether	0/10	2.00E-02		2.4E-05		Yes	mg/L
cis-1,3-Dichloropropene	0/2	5.00E-03					mg/L
m,p-Xylene	0/2	1.00E-02	4.0E-01		No		mg/L
trans-1,3-Dichloropropene	0/2	5.00E-03					mg/L

LOCATION-SWMU 193B MEDIA-Subsurface Soil

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/3	1.00E-02	1.2E+02		No		mg/kg
1,1,2,2-Tetrachloroethane	0/3	1.00E-02		1.8E-02		No	mg/kg
1,1,2-Trichloroethane	0/3	1.00E-02	3.1E+00	4.6E-02	No	No	mg/kg
1,1-Dichloroethane	0/3	1.00E-02	6.7E+01		No		mg/kg
1,1-Dichloroethene	0/4	4.09E-01	3.5E+00	3.9E-03	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/4	5.00E-01	2.5E+01		No		mg/kg
1,2-Dichlorobenzene	0/4	5.00E-01	7.6E+01		No		mg/kg
1,2-Dichloroethane	0/3	1.00E-02	4.3E+00	2.2E-02	No	No	mg/kg
1,2-Dichloropropane	0/3	1.00E-02	1.6E+00	8.7E-02	No	No	mg/kg
1,2-Dimethylbenzene	0/3	1.00E-02	3.9E+02		No		mg/kg
1,3-Dichlorobenzene	0/4	5.00E-01	3.3E+01		No		mg/kg
1,4-Dichlorobenzene	0/4	5.00E-01	1.1E+03	2.9E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/4	5.00E-01	1.6E+02		No		mg/kg
2,4,6-Trichlorophenol	0/4	5.00E-01		8.1E-01		No	mg/kg
2,4-Dichlorophenol	0/4	5.00E-01	6.8E+00		No		mg/kg
2,4-Dimethylphenol	0/4	5.00E-01	3.1E+01		No		mg/kg
2,4-Dinitrophenol	0/4	5.00E-01	5.0E+00		No		mg/kg
2,4-Dinitrotoluene	0/4	5.00E-01	4.7E+00	2.1E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/4	5.00E-01	2.3E+00	2.1E-02	No	Yes	mg/kg
2-Chloronaphthalene	0/4	5.00E-01	1.1E+02		No		mg/kg
2-Chlorophenol	0/4	5.00E-01	7.0E+00		No		mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION=SWMU 193B MEDIA=Subsurface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
2-Hexanone	0/3	1.00E-02					mg/kg
2-Methyl-4,6-dinitrophenol	0/4	5.00E-01					mg/kg
2-Methylnaphthalene	0/4	5.00E-01					mg/kg
2-Methylphenol	0/4	5.00E-01	7.8E+01		No		mg/kg
2-Nitroaniline	0/4	5.00E-01	7.0E-02		Yes		mg/kg
2-Nitrophenol	0/4	5.00E-01					mg/kg
3,3'-Dichlorobenzidine	0/4	5.00E-01		2.1E-02		Yes	mg/kg
3-Nitroaniline	0/4	5.00E-01					mg/kg
4-Bromophenyl phenyl ether	0/4	5.00E-01					mg/kg
4-Chloro-3-methylphenol	0/4	5.00E-01					mg/kg
4-Chloroaniline	0/4	5.00E-01	6.3E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/4	5.00E-01					mg/kg
4-Methyl-2-pentanone	0/3	1.00E-02	3.3E+01		No		mg/kg
4-Methylphenol	0/4	5.00E-01	9.6E+00		No		mg/kg
4-Nitroaniline	0/4	5.00E-01					mg/kg
4-Nitrophenol	0/4	5.00E-01	1.6E+02		No		mg/kg
Acenaphthene	0/4	5.00E-01	6.4E+01		No		mg/kg
Acenaphthylene	0/4	5.00E-01					mg/kg
Americium-241	0/4	1.00E+01		1.5E+00		Yes	pCi/g
Anthracene	0/4	5.00E-01	6.5E+02		No		mg/kg
Antimony	0/4	2.00E+01	6.4E-02		Yes		mg/kg
Arsenic	0/4	5.00E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Benz(a)anthracene	0/4	5.00E-01		8.5E-03		Yes	mg/kg
Benzene	0/3	1.00E-02	1.8E+00	5.1E-02	No	No	mg/kg
Benzo(a)pyrene	0/4	5.00E-01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	0/4	5.00E-01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	0/4	5.00E-01					mg/kg
Benzo(k)fluoranthene	0/4	5.00E-01		8.5E-02		Yes	mg/kg
Boron	0/4	1.00E+02	3.3E+02		No		mg/kg
Bromodichloromethane	0/3	1.00E-02	1.9E+01	1.2E-01	No	No	mg/kg
Bromoform	0/3	1.00E-02	1.6E+01	5.4E-01	No	No	mg/kg
Bromomethane	0/3	1.00E-02	6.2E-01		No		mg/kg
Butyl benzyl phthalate	0/4	5.00E-01	3.7E+02		No		mg/kg
Cadmium	0/4	2.00E+00	3.8E-01	3.3E+03	Yes	No	mg/kg
Carbazole	0/4	5.00E-01		6.1E-01		No	mg/kg
Carbon Disulfide	0/3	1.00E-02	4.6E+01		No		mg/kg
Carbon Tetrachloride	0/3	1.00E-02	2.7E-01	1.6E-02	No	No	mg/kg
Cesium-137	0/4	2.70E+00		1.6E-02		Yes	pCi/g
Chlorobenzene	0/3	1.00E-02	5.6E+00		No		mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION=SWMU 193B MEDIA=Subsurface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Chloroethane	0/3	1.00E-02	2.8E+02		No		mg/kg
Chloroform	0/3	1.00E-02	2.4E+00	2.1E-02	No	No	mg/kg
Chloromethane	0/3	1.00E-02		1.3E-01		No	mg/kg
Chrysene	0/4	5.00E-01		8.5E-01		No	mg/kg
Cobalt-60	0/4	1.30E+00		3.3E-03		Yes	pCi/g
Cyanide	0/2	1.00E+00	2.3E+01		No		mg/kg
Di-n-butylphthalate	0/4	5.00E-01	2.6E+02		No		mg/kg
Di-n-octylphthalate	0/4	5.00E-01	4.9E+01		No		mg/kg
Dibenz (a, b) anthracene	0/4	5.00E-01		8.5E-04		Yes	mg/kg
Dibenzofuran	0/4	5.00E-01	6.3E+00		No		mg/kg
Dibromochloromethane	0/3	1.00E-02	1.5E+01	5.9E-02	No	No	mg/kg
Diethylphthalate	0/4	5.00E-01	2.0E+03		No		mg/kg
Dimethylphthalate	0/4	5.00E-01	2.4E+04		No		mg/kg
Ethylbenzene	0/3	1.00E-02	1.1E+02		No		mg/kg
Fluoranthene	0/4	5.00E-01	4.3E+01		No		mg/kg
Fluorene	0/4	5.00E-01	6.3E+01		No		mg/kg
Hexachlorobenzene	0/4	5.00E-01	1.3E+00	5.4E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/4	5.00E-01	3.0E-01	1.0E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/4	5.00E-01	1.0E+00		No		mg/kg
Hexachloroethane	0/4	5.00E-01	1.5E+00	5.8E-01	No	No	mg/kg
Indeno (1,2,3-cd) pyrene	0/4	5.00E-01		8.5E-03		Yes	mg/kg
Isophorone	0/4	5.00E-01	3.0E+02	9.9E+00	No	No	mg/kg
Lead	0/4	2.00E+01	1.0E-04		Yes		mg/kg
Mercury	0/4	2.00E-01	1.4E-01		Yes		mg/kg
Methylene Chloride	0/3	1.00E-02	7.0E+01	5.0E-01	No	No	mg/kg
N-Nitroso-di-n-propylamine	0/4	5.00E-01		7.3E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/4	5.00E-01		1.0E+00		No	mg/kg
Naphthalene	0/4	5.00E-01	1.3E+01		No		mg/kg
Nitrobenzene	0/4	5.00E-01	6.1E-01		No		mg/kg
PCB-1016	0/4	1.20E-01	2.3E-01	9.9E-03	No	Yes	mg/kg
PCB-1221	0/4	1.20E-01		1.1E-02		Yes	mg/kg
PCB-1232	0/4	1.20E-01		1.1E-02		Yes	mg/kg
PCB-1242	0/4	1.20E-01		9.7E-03		Yes	mg/kg
PCB-1248	0/4	1.20E-01		1.1E-02		Yes	mg/kg
PCB-1254	0/4	1.20E-01	6.6E-02	9.9E-03	Yes	Yes	mg/kg
PCB-1260	0/4	1.20E-01		9.8E-03		Yes	mg/kg
Pentachlorophenol	0/4	5.00E-01	7.9E+01	1.3E-01	No	Yes	mg/kg
Phenanthrene	0/4	5.00E-01					mg/kg
Phenol	0/4	5.00E-01	1.4E+03		No		mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SWMU 193B MEDIA-Subsurface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Protactinium-234m	0/4	6.10E+02		4.9E-03		Yes	pCi/g
Pyrene	0/4	5.00E-01	3.2E+01		No		mg/kg
Selenium	0/4	5.00E+00	1.2E+01		No		mg/kg
Silver	0/4	4.00E+00	6.1E+00		No		mg/kg
Styrene	0/3	1.00E-02	1.9E+02		No		mg/kg
Technetium-99	0/4	2.51E+00		4.4E+02		No	pCi/g
Tetrachloroethene	0/3	1.00E-02	1.2E+01	1.3E-01	No	No	mg/kg
Thallium	0/4	1.50E+01					mg/kg
Thorium-234	0/4	1.60E+01		7.2E+00		Yes	pCi/g
Trichloroethene	0/4	4.09E-01	1.2E+00	9.1E-02	No	Yes	mg/kg
Uranium-235	0/4	6.30E+00		1.2E-01		Yes	pCi/g
Vinyl Chloride	0/4	1.00E+02		1.5E-03		Yes	mg/kg
bis(2-Chloroethoxy)methane	0/4	5.00E-01					mg/kg
bis(2-Chloroethyl)ether	0/4	5.00E-01		5.9E-03		Yes	mg/kg
bis(2-Chloroisopropyl)ether	0/4	5.00E-01		1.1E-01		Yes	mg/kg
bis(2-Ethylhexyl)phthalate	0/4	5.00E-01	1.4E+01	2.8E-01	No	Yes	mg/kg
cis-1,2-Dichloroethene	0/4	5.00E-01	6.1E+00		No		mg/kg
cis-1,3-Dichloropropene	0/3	1.00E-02					mg/kg
m,p-Xylene	0/3	2.00E-02	1.7E+03		No		mg/kg
trans-1,2-Dichloroethene	0/4	5.00E-01	1.1E+01		No		mg/kg
trans-1,3-Dichloropropene	0/3	1.00E-02					mg/kg

LOCATION-SWMU 193B MEDIA-Surface Soil

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/2	1.00E-02	1.2E+02		No		mg/kg
1,1,2,2-Tetrachloroethane	0/2	1.00E-02		1.8E-02		No	mg/kg
1,1,2-Trichloroethane	0/2	1.00E-02	3.1E+00	4.6E-02	No	No	mg/kg
1,1-Dichloroethane	0/2	1.00E-02	6.7E+01		No		mg/kg
1,1-Dichloroethene	0/2	3.12E-01	3.5E+00	3.9E-03	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/2	5.00E-01	2.5E+01		No		mg/kg
1,2-Dichlorobenzene	0/2	5.00E-01	7.6E+01		No		mg/kg
1,2-Dichloroethane	0/2	1.00E-02	4.3E+00	2.2E-02	No	No	mg/kg
1,2-Dichloropropane	0/2	1.00E-02	1.6E+00	8.7E-02	No	No	mg/kg
1,2-Dimethylbenzene	0/2	1.00E-02	3.9E+02		No		mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION=SWMU 193B MEDIA=Surface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,3-Dichlorobenzene	0/2	5.00E-01	3.3E+01		No		mg/kg
1,4-Dichlorobenzene	0/2	5.00E-01	1.1E+03	2.9E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/2	5.00E-01	1.6E+02		No		mg/kg
2,4,6-Trichlorophenol	0/2	5.00E-01		8.1E-01		No	mg/kg
2,4-Dichlorophenol	0/2	5.00E-01	6.8E+00		No		mg/kg
2,4-Dimethylphenol	0/2	5.00E-01	3.1E+01		No		mg/kg
2,4-Dinitrophenol	0/2	5.00E-01	5.0E+00		No		mg/kg
2,4-Dinitrotoluene	0/2	5.00E-01	4.7E+00	2.1E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/2	5.00E-01	2.3E+00	2.1E-02	No	Yes	mg/kg
2-Chloronaphthalene	0/2	5.00E-01	1.1E+02		No		mg/kg
2-Chlorophenol	0/2	5.00E-01	7.0E+00		No		mg/kg
2-Hexanone	0/2	1.00E-02					mg/kg
2-Methyl-4,6-dinitrophenol	0/2	5.00E-01					mg/kg
2-Methylnaphthalene	0/2	5.00E-01					mg/kg
2-Methylphenol	0/2	5.00E-01	7.8E+01		No		mg/kg
2-Nitroaniline	0/2	5.00E-01	7.0E-02		Yes		mg/kg
2-Nitrophenol	0/2	5.00E-01					mg/kg
3,3'-Dichlorobenzidine	0/2	5.00E-01		2.1E-02		Yes	mg/kg
3-Nitroaniline	0/2	5.00E-01					mg/kg
4-Bromophenyl phenyl ether	0/2	5.00E-01					mg/kg
4-Chloro-3-methylphenol	0/2	5.00E-01					mg/kg
4-Chloroaniline	0/2	5.00E-01	6.3E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/2	5.00E-01					mg/kg
4-Methyl-2-pentanone	0/2	1.00E-02	3.3E+01		No		mg/kg
4-Methylphenol	0/2	5.00E-01	9.6E+00		No		mg/kg
4-Nitroaniline	0/2	5.00E-01					mg/kg
4-Nitrophenol	0/2	5.00E-01	1.6E+02		No		mg/kg
Acenaphthene	0/2	5.00E-01	6.4E+01		No		mg/kg
Acenaphthylene	0/2	5.00E-01					mg/kg
Americium-241	0/2	1.00E+01		1.5E+00		Yes	pCi/g
Anthracene	0/2	5.00E-01	6.5E+02		No		mg/kg
Antimony	0/2	2.00E+01	6.4E-02		Yes		mg/kg
Arsenic	0/2	5.00E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Benz(a)anthracene	0/2	5.00E-01		8.5E-03		Yes	mg/kg
Benzene	0/2	1.00E-02	1.8E+00	5.1E-02	No	No	mg/kg
Benzo(a)pyrene	0/2	5.00E-01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	0/2	5.00E-01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	0/2	5.00E-01					mg/kg
Benzo(k)fluoranthene	0/2	5.00E-01		8.5E-02		Yes	mg/kg

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Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SWMU 193B MEDIA-Surface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Boron	0/2	1.00E+02	3.3E+02		No		mg/kg
Bromodichloromethane	0/2	1.00E-02	1.9E+01	1.2E-01	No	No	mg/kg
Bromoform	0/2	1.00E-02	1.6E+01	5.4E-01	No	No	mg/kg
Bromomethane	0/2	1.00E-02	6.2E-01		No		mg/kg
Butyl benzyl phthalate	0/2	5.00E-01	3.7E+02		No		mg/kg
Cadmium	0/2	2.00E+00	3.8E-01	3.3E+03	Yes	No	mg/kg
Carbazole	0/2	5.00E-01		6.1E-01		No	mg/kg
Carbon Disulfide	0/2	1.00E-02	4.6E+01		No		mg/kg
Carbon Tetrachloride	0/2	1.00E-02	2.7E-01	1.6E-02	No	No	mg/kg
Cesium-137	0/2	2.60E+00		1.6E-02		Yes	pCi/g
Chlorobenzene	0/2	1.00E-02	5.6E+00		No		mg/kg
Chloroethane	0/2	1.00E-02	2.8E+02		No		mg/kg
Chloroform	0/2	1.00E-02	2.4E+00	2.1E-02	No	No	mg/kg
Chloromethane	0/2	1.00E-02		1.3E-01		No	mg/kg
Chrysene	0/2	5.00E-01		8.5E-01		No	mg/kg
Cobalt-60	0/2	1.30E+00		3.3E-03		Yes	pCi/g
Cyanide	0/1	1.00E+00	2.3E+01		No		mg/kg
Di-n-butylphthalate	0/2	5.00E-01	2.6E+02		No		mg/kg
Di-n-octylphthalate	0/2	5.00E-01	4.9E+01		No		mg/kg
Dibenz(a,h)anthracene	0/2	5.00E-01		8.5E-04		Yes	mg/kg
Dibenzofuran	0/2	5.00E-01	6.3E+00		No		mg/kg
Dibromochloromethane	0/2	1.00E-02	1.5E+01	5.9E-02	No	No	mg/kg
Diethylphthalate	0/2	5.00E-01	2.0E+03		No		mg/kg
Dimethylphthalate	0/2	5.00E-01	2.4E+04		No		mg/kg
Ethylbenzene	0/2	1.00E-02	1.1E+02		No		mg/kg
Fluoranthene	0/2	5.00E-01	4.3E+01		No		mg/kg
Fluorene	0/2	5.00E-01	6.3E+01		No		mg/kg
Hexachlorobenzene	0/2	5.00E-01	1.3E+00	5.4E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/2	5.00E-01	3.0E-01	1.0E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/2	5.00E-01	1.0E+00		No		mg/kg
Hexachloroethane	0/2	5.00E-01	1.5E+00	5.8E-01	No	No	mg/kg
Indeno(1,2,3-cd)pyrene	0/2	5.00E-01		8.5E-03		Yes	mg/kg
Isophorone	0/2	5.00E-01	3.0E+02	9.9E+00	No	No	mg/kg
Lead	0/2	2.00E+01	1.0E-04		Yes		mg/kg
Mercury	0/2	2.00E-01	1.4E-01		Yes		mg/kg
Methylene Chloride	0/2	1.00E-02	7.0E+01	5.0E-01	No	No	mg/kg
N-Nitroso-di-n-propylamine	0/2	5.00E-01		7.3E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/2	5.00E-01		1.0E+00		No	mg/kg
Naphthalene	0/2	5.00E-01	1.3E+01		No		mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION=SWMU 193B MEDIA=Surface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Nitrobenzene	0/2	5.00E-01	6.1E-01		No		mg/kg
PCB-1016	0/2	1.20E-01	2.3E-01	9.9E-03	No	Yes	mg/kg
PCB-1221	0/2	1.20E-01		1.1E-02		Yes	mg/kg
PCB-1232	0/2	1.20E-01		1.1E-02		Yes	mg/kg
PCB-1242	0/2	1.20E-01		9.7E-03		Yes	mg/kg
PCB-1248	0/2	1.20E-01		1.1E-02		Yes	mg/kg
PCB-1254	0/2	1.20E-01	6.6E-02	9.9E-03	Yes	Yes	mg/kg
PCB-1260	0/2	1.20E-01		9.8E-03		Yes	mg/kg
Pentachlorophenol	0/2	5.00E-01	7.9E+01	1.3E-01	No	Yes	mg/kg
Phenanthrene	0/2	5.00E-01					mg/kg
Phenol	0/2	5.00E-01	1.4E+03		No		mg/kg
Protactinium-234m	0/2	6.10E+02		4.9E-03		Yes	pCi/g
Pyrene	0/2	5.00E-01	3.2E+01		No		mg/kg
Selenium	0/2	5.00E+00	1.2E+01		No		mg/kg
Silver	0/2	4.00E+00	6.1E+00		No		mg/kg
Styrene	0/2	1.00E-02	1.9E+02		No		mg/kg
Technetium-99	0/2	2.51E+00		4.4E+02		No	pCi/g
Tetrachloroethene	0/2	1.00E-02	1.2E+01	1.3E-01	No	No	mg/kg
Thallium	0/2	1.50E+01					mg/kg
Thorium-234	0/2	1.60E+01		7.2E+00		Yes	pCi/g
Trichloroethene	0/2	3.12E-01	1.2E+00	9.1E-02	No	Yes	mg/kg
Uranium-235	0/2	6.30E+00		1.2E-01		Yes	pCi/g
Vinyl Chloride	0/2	1.00E+02		1.5E-03		Yes	mg/kg
bis(2-Chloroethoxy)methane	0/2	5.00E-01					mg/kg
bis(2-Chloroethyl) ether	0/2	5.00E-01		5.9E-03		Yes	mg/kg
bis(2-Chloroisopropyl) ether	0/2	5.00E-01		1.1E-01		Yes	mg/kg
bis(2-Ethylhexyl)phthalate	0/2	5.00E-01	1.4E+01	2.8E-01	No	Yes	mg/kg
cis-1,2-Dichloroethene	0/2	5.00E-01	6.1E+00		No		mg/kg
cis-1,3-Dichloropropene	0/2	1.00E-02					mg/kg
m,p-Xylene	0/2	2.00E-02	1.7E+03		No		mg/kg
trans-1,2-Dichloroethene	0/2	5.00E-01	1.1E+01		No		mg/kg
trans-1,3-Dichloropropene	0/2	1.00E-02					mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION-SWMU 193C MEDIA-RGA Groundwater -----

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/2	1.00E-03	5.4E-02		No		mg/L
Benzene	0/1	5.00E-03	4.0E-04	3.5E-05	Yes	Yes	mg/L
Ethylbenzene	0/1	5.00E-03	4.5E-02		No		mg/L
Toluene	0/1	5.00E-03	2.4E-02		No		mg/L
Xylene	0/1	5.00E-03	4.0E-01		No		mg/L

----- LOCATION-SWMU 193C MEDIA-Subsurface Soil -----

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/38	5.00E-03	1.2E+02		No		mg/kg
1,2-Dichloroethene	0/55	5.00E-03	1.0E+01		No		mg/kg
Antimony	0/20	2.00E+01	6.4E-02		Yes		mg/kg
Benzene	0/20	5.00E-03	1.8E+00	5.1E-02	No	No	mg/kg
Chromium, hexavalent	0/20	5.00E-01	4.8E-01	4.9E+02	Yes	No	mg/kg
Ethylbenzene	0/20	5.00E-03	1.1E+02		No		mg/kg
Mercury	0/20	2.00E-01	1.4E-01		Yes		mg/kg
Polychlorinated biphenyl	0/12	1.00E-01		1.0E-02		Yes	mg/kg
Selenium	0/20	5.00E+00	1.2E+01		No		mg/kg
Silver	0/20	4.00E+00	6.1E+00		No		mg/kg
Thallium	0/20	1.50E+01					mg/kg
Toluene	0/20	5.00E-03	9.8E+01		No		mg/kg
Trichloroethene	0/55	5.00E-03	1.2E+00	9.1E-02	No	No	mg/kg

----- LOCATION-SWMU 193C MEDIA-Surface Soil -----

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Antimony	0/5	2.00E+01	6.4E-02		Yes		mg/kg
Arsenic	0/5	5.00E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Beryllium	0/5	5.00E-01	1.6E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	0/5	2.00E+00	3.8E-01	3.3E+03	Yes	No	mg/kg
Chromium, hexavalent	0/5	5.00E-01	4.8E-01	4.9E+02	Yes	No	mg/kg
Mercury	0/5	2.00E-01	1.4E-01		Yes		mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SWMU 193C MEDIA-Surface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Selenium	0/5	5.00E+00	1.2E+01		No		mg/kg
Silver	0/5	4.00E+00	6.1E+00		No		mg/kg
Thallium	0/5	1.50E+01					mg/kg

LOCATION-SWMU 194 MEDIA-Subsurface Soil

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/21	1.00E-03	1.2E+02		No		mg/kg
1,2-Dichloroethane	0/22	5.00E-03	1.0E+01		No		mg/kg
Antimony	0/12	2.00E+01	6.4E-02		Yes		mg/kg
Benzene	0/19	5.00E-03	1.8E+00	5.1E-02	No	No	mg/kg
Boron	0/12	1.00E+02	3.3E+02		No		mg/kg
Chromium, hexavalent	0/12	5.00E-01	4.6E-01	4.9E+02	Yes	No	mg/kg
Cyanide	0/12	1.00E+00	2.3E+01		No		mg/kg
Mercury	0/12	2.00E-01	1.4E-01		Yes		mg/kg
Polychlorinated biphenyl	0/6	1.00E-01		1.0E-02		Yes	mg/kg
Selenium	0/12	1.00E+00	1.2E+01		No		mg/kg
Silver	0/12	4.00E+00	6.1E+00		No		mg/kg
Thallium	0/12	1.50E+01					mg/kg
Toluene	0/19	5.00E-03	9.8E+01		No		mg/kg
Trichloroethene	0/22	1.00E-03	1.2E+00	9.1E-02	No	No	mg/kg
Xylene	0/19	5.00E-03	1.7E+03		No		mg/kg

LOCATION-SWMU 99A MEDIA-McNairy Groundwater

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,2-Dichloroethane	0/4	2.00E+00	6.7E-04	1.1E-05	Yes	Yes	mg/L
Chloroform	0/1	5.00E-02	2.0E-03	1.5E-05	Yes	Yes	mg/L
Vinyl Chloride	0/1	1.00E-01		1.7E-06		Yes	mg/L
trans-1,2-Dichloroethene	0/4	2.00E+00	4.0E-03		Yes		mg/L

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION=SWMU 99A MEDIA=RGa Groundwater

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/25	1.00E-01	5.4E-02		Yes		mg/L
1,1,2,2-Tetrachloroethane	0/2	1.00E-01		5.0E-06		Yes	mg/L
1,1,2-Trichloroethane	0/19	1.00E-01	8.1E-04	1.8E-05	Yes	Yes	mg/L
1,1-Dichloroethane	0/19	1.00E-01	2.7E-02		Yes		mg/L
1,2,4-Trichlorobenzene	0/10	2.00E-02	6.6E-03		Yes		mg/L
1,2-Dichlorobenzene	0/10	2.00E-02	1.2E-02		Yes		mg/L
1,2-Dichloroethane	0/25	2.00E+00	6.7E-04	1.1E-05	Yes	Yes	mg/L
1,2-Dichloropropane	0/2	1.00E-01	2.7E-04	7.6E-05	Yes	Yes	mg/L
1,2-Dimethylbenzene	0/2	1.00E-01	4.6E-02		Yes		mg/L
1,3-Dichlorobenzene	0/10	2.00E-02	5.3E-04		Yes		mg/L
1,4-Dichlorobenzene	0/10	2.00E-02	5.3E-02	2.0E-04	No	Yes	mg/L
2,4,5-Trichlorophenol	0/10	2.00E-02	2.0E-02		Yes		mg/L
2,4,6-Trichlorophenol	0/10	2.00E-02		4.0E-04		Yes	mg/L
2,4-Dichlorophenol	0/10	2.00E-02	4.1E-03		Yes		mg/L
2,4-Dimethylphenol	0/10	2.00E-02	3.9E-03		Yes		mg/L
2,4-Dinitrophenol	0/2	5.00E-03	3.0E-03		Yes		mg/L
2,4-Dinitrotoluene	0/10	2.00E-02	3.0E-03	7.7E-06	Yes	Yes	mg/L
2,6-Dinitrotoluene	0/10	2.00E-02	1.5E-03	7.7E-06	Yes	Yes	mg/L
2-Butanone	0/2	2.00E-01	6.2E-02		Yes		mg/L
2-Chloronaphthalene	0/10	2.00E-02	1.5E-02		Yes		mg/L
2-Chlorophenol	0/10	2.00E-02	1.0E-03		Yes		mg/L
2-Hexanone	0/2	2.00E-01					mg/L
2-Methyl-4,6-dinitrophenol	0/10	2.00E-02					mg/L
2-Methylnaphthalene	0/10	2.00E-02					mg/L
2-Methylphenol	0/10	2.00E-02	7.2E-02		No		mg/L
2-Nitroaniline	0/10	2.00E-02	1.2E-05		Yes		mg/L
2-Nitrophenol	0/10	2.00E-02					mg/L
3,3'-Dichlorobenzidine	0/10	2.00E-02		1.1E-05		Yes	mg/L
3-Nitroaniline	0/10	2.00E-02					mg/L
4-Bromophenyl phenyl ether	0/10	2.00E-02					mg/L
4-Chloro-3-methylphenol	0/10	2.00E-02					mg/L
4-Chloroaniline	0/10	2.00E-02	5.6E-03		Yes		mg/L
4-Chlorophenyl phenyl ether	0/10	2.00E-02					mg/L
4-Methyl-2-pentanone	0/2	2.00E-01	5.1E-03		Yes		mg/L
4-Methylphenol	0/10	2.00E-02	7.3E-03		Yes		mg/L
4-Nitroaniline	0/10	2.00E-02					mg/L
4-Nitrophenol	0/10	2.00E-02	1.3E-02		Yes		mg/L
Acenaphthene	0/10	2.00E-02	1.1E-02		Yes		mg/L
Acenaphthylene	0/10	2.00E-02					mg/L
Acetone	0/2	2.00E-01	2.0E-02		Yes		mg/L

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SWMU 99A MEDIA-RGA Groundwater
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Anthracene	0/10	2.00E-02	5.7E-02		No		mg/L
Antimony	0/19	2.50E-01	5.6E-04		Yes		mg/L
Benz (a) anthracene	0/10	2.00E-02		1.3E-06		Yes	mg/L
Benzene	0/19	1.00E-01	4.0E-04	3.5E-05	Yes	Yes	mg/L
Benzo (a) pyrene	0/10	2.00E-02		9.5E-08		Yes	mg/L
Benzo (b) fluoranthene	0/10	2.00E-02		9.3E-07		Yes	mg/L
Benzo (ghi) perylene	0/10	2.00E-02					mg/L
Benzo (k) fluoranthene	0/10	2.00E-02		1.7E-05		Yes	mg/L
Boron	0/10	2.00E+00	1.4E-01		Yes		mg/L
Bromodichloromethane	0/19	1.00E-01	4.0E-03	8.4E-05	Yes	Yes	mg/L
Bromoform	0/2	1.00E-01	4.0E-03	2.2E-04	Yes	Yes	mg/L
Butyl benzyl phthalate	0/2	5.00E-03	2.6E-01		No		mg/L
Cadmium	0/19	1.00E-01	6.6E-04		Yes		mg/L
Carbazole	0/10	2.00E-02		2.2E-04		Yes	mg/L
Carbon Disulfide	0/2	1.00E-01	3.5E-02		Yes		mg/L
Carbon Tetrachloride	0/25	1.00E-01	1.2E-04	1.5E-05	Yes	Yes	mg/L
Chlorobenzene	0/2	1.00E-01	1.3E-03		Yes		mg/L
Chloroethane	0/2	1.00E-01	3.1E-01		No		mg/L
Chloroform	0/20	1.00E-01	2.0E-03	1.5E-05	Yes	Yes	mg/L
Chloromethane	0/2	1.00E-01		1.3E-04		Yes	mg/L
Chrysene	0/10	2.00E-02		1.3E-04		Yes	mg/L
Cyanide	0/30	2.00E-02	2.8E-02		No		mg/L
Di-n-butylphthalate	0/10	2.00E-02	1.3E-01		No		mg/L
Di-n-octylphthalate	0/10	2.00E-02	6.9E-04		Yes		mg/L
Dibenz (a, b) anthracene	0/10	2.00E-02		4.6E-08		Yes	mg/L
Dibenzofuran	0/10	2.00E-02	1.6E-03		Yes		mg/L
Dibromochloromethane	0/2	1.00E-01	4.0E-03	6.2E-05	Yes	Yes	mg/L
Diethylphthalate	0/10	2.00E-02	1.2E+00		No		mg/L
Dimethylphthalate	0/10	2.00E-02	1.5E+01		No		mg/L
Ethylbenzene	0/19	1.00E-01	4.5E-02		Yes		mg/L
Fluoranthene	0/10	2.00E-02	2.3E-02		No		mg/L
Fluorene	0/10	2.00E-02	7.4E-03		Yes		mg/L
Hexachlorobenzene	0/10	2.00E-02	7.5E-04	1.9E-06	Yes	Yes	mg/L
Hexachlorobutadiene	0/10	2.00E-02	2.2E-04	4.8E-05	Yes	Yes	mg/L
Hexachlorocyclopentadiene	0/10	2.00E-02	9.8E-03		Yes		mg/L
Hexachloroethane	0/10	2.00E-02	1.3E-03	3.3E-04	Yes	Yes	mg/L
Indeno (1, 2, 3-cd) pyrene	0/10	2.00E-02		6.3E-07		Yes	mg/L
Isophorone	0/10	2.00E-02	3.0E-01	5.5E-03	No	Yes	mg/L
Methylene Chloride	0/2	2.00E-01	6.2E-02	3.6E-04	Yes	Yes	mg/L

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION-SWMU 99A MEDIA-RGA Groundwater -----
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Molybdenum	0/5	1.00E-01	7.5E-03		Yes		mg/L
N-Nitroso-di-n-propylamine	0/10	2.00E-02		7.4E-07		Yes	mg/L
N-Nitrosodiphenylamine	0/10	2.00E-02		9.5E-04		Yes	mg/L
Naphthalene	0/10	2.00E-02	2.0E-04		Yes		mg/L
Nitrobenzene	0/10	2.00E-02	1.1E-04		Yes		mg/L
Pentachlorophenol	0/10	2.00E-02	2.3E-02	2.1E-05	No	Yes	mg/L
Phenanthrene	0/10	2.00E-02					mg/L
Phenol	0/10	2.00E-02	9.0E-01		No		mg/L
Polychlorinated biphenyl	0/2	1.70E-04		8.0E-06		Yes	mg/L
Pyrene	0/10	2.00E-02	1.8E-02		Yes		mg/L
Pyridine	0/2	5.00E-03	1.5E-03		Yes		mg/L
Selenium	0/17	5.00E-03	7.5E-03		No		mg/L
Silver	0/17	6.00E-02	7.5E-03		Yes		mg/L
Styrene	0/2	1.00E-01	4.5E-02		Yes		mg/L
Tetrachloroethene	0/19	1.00E-01	7.9E-03	5.7E-05	Yes	Yes	mg/L
Thallium	0/12	2.00E-01					mg/L
Toluene	0/19	1.00E-01	2.4E-02		Yes		mg/L
Total Phosphate as Phosphorus	0/3	2.00E+00	3.0E-05		Yes		mg/L
Uranium	0/11	1.00E-03	4.5E-03		No		mg/L
Vinyl Chloride	0/28	1.00E-01		1.7E-06		Yes	mg/L
Xylene	0/17	1.00E-01	4.0E-01		No		mg/L
bis(2-Chloroethoxy)methane	0/10	2.00E-02					mg/L
bis(2-Chloroethyl)ether	0/10	2.00E-02		9.2E-07		Yes	mg/L
bis(2-Chloroisopropyl)ether	0/10	2.00E-02		2.4E-05		Yes	mg/L
cis-1,3-Dichloropropene	0/2	1.00E-01					mg/L
m,p-Xylene	0/2	2.00E-01	4.0E-01		No		mg/L
trans-1,3-Dichloropropene	0/2	1.00E-01					mg/L

----- LOCATION-SWMU 99A MEDIA-Subsurface Soil -----

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,2-Dimethylbenzene	0/3	1.00E-02	3.9E+02		No		mg/kg
Americium-241	0/21	1.30E+01		1.5E+00		Yes	pCi/g
Boron	0/17	1.00E+02	3.3E+02		No		mg/kg
Carbazole	0/17	5.00E-01		6.1E-01		No	mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION-SWMU 99A MEDIA-Subsurface Soil -----
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Cobalt-60	0/21	4.60E+00		3.3E-03		Yes	pCi/g
Dichlorodifluoromethane	0/2	2.00E-02	2.0E+01		No		mg/kg
PCB-1268	0/1	1.00E-01					mg/kg
Plutonium-239/240	0/1	5.70E-01		2.0E+00		No	pCi/g
Polychlorinated biphenyl	0/1	1.00E-01		1.0E-02		Yes	mg/kg
Protactinium-234m	0/21	5.00E+02		4.9E-03		Yes	pCi/g
Pyridine	0/1	4.80E-01	1.3E+00		No		mg/kg
cis-1,2-Dichloroethene	0/5	5.27E-01	6.1E+00		No		mg/kg
m,p-Xylene	0/3	2.00E-02	1.7E+03		No		mg/kg
trans-1,2-Dichloroethene	0/5	5.27E-01	1.1E+01		No		mg/kg

----- LOCATION-SWMU 99A MEDIA-Surface Soil -----

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1-Dichloroethene	0/2	2.64E-01	3.5E+00	3.9E-03	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/13	5.00E-01	2.5E+01		No		mg/kg
1,2-Dichlorobenzene	0/13	5.00E-01	7.6E+01		No		mg/kg
1,3-Dichlorobenzene	0/13	5.00E-01	3.3E+01		No		mg/kg
1,4-Dichlorobenzene	0/13	5.00E-01	1.1E+03	2.9E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/13	5.00E-01	1.6E+02		No		mg/kg
2,4,6-Trichlorophenol	0/13	5.00E-01		8.1E-01		No	mg/kg
2,4-Dichlorophenol	0/13	5.00E-01	6.8E+00		No		mg/kg
2,4-Dimethylphenol	0/13	5.00E-01	3.1E+01		No		mg/kg
2,4-Dinitrophenol	0/1	4.80E-01	5.0E+00		No		mg/kg
2,4-Dinitrotoluene	0/13	5.00E-01	4.7E+00	2.1E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/13	5.00E-01	2.3E+00	2.1E-02	No	Yes	mg/kg
2-Chloronaphthalene	0/13	5.00E-01	1.1E+02		No		mg/kg
2-Chlorophenol	0/13	5.00E-01	7.0E+00		No		mg/kg
2-Methyl-4,6-dinitrophenol	0/13	5.00E-01					mg/kg
2-Methylnaphthalene	0/13	5.00E-01					mg/kg
2-Methylphenol	0/13	5.00E-01	7.8E+01		No		mg/kg
2-Nitroaniline	0/13	5.00E-01	7.0E-02		Yes		mg/kg
2-Nitrophenol	0/13	5.00E-01					mg/kg
3,3'-Dichlorobenzidine	0/13	5.00E-01		2.1E-02		Yes	mg/kg
3-Nitroaniline	0/13	5.00E-01					mg/kg

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Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION=SWMU 99A MEDIA=Surface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
4-Bromophenyl phenyl ether	0/13	5.00E-01					mg/kg
4-Chloro-3-methylphenol	0/13	5.00E-01					mg/kg
4-Chloroaniline	0/13	5.00E-01	6.3E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/13	5.00E-01					mg/kg
4-Methylphenol	0/13	5.00E-01	9.6E+00		No		mg/kg
4-Nitroaniline	0/13	5.00E-01					mg/kg
4-Nitrophenol	0/13	5.00E-01	1.6E+02		No		mg/kg
Americium-241	0/16	1.30E+01		1.5E+00		Yes	pCi/g
Antimony	0/13	2.00E+01	6.4E-02		Yes		mg/kg
Boron	0/13	1.00E+02	3.3E+02		No		mg/kg
Butyl benzyl phthalate	0/1	4.80E-01	3.7E+02		No		mg/kg
Cadmium	0/13	2.00E+00	3.8E-01	3.3E+03	Yes	No	mg/kg
Carbazole	0/13	5.00E-01		6.1E-01		No	mg/kg
Cobalt-60	0/16	4.60E+00		3.3E-03		Yes	pCi/g
Cyanide	0/11	1.00E+00	2.3E+01		No		mg/kg
Di-n-butylphthalate	0/13	5.00E-01	2.6E+02		No		mg/kg
Di-n-octylphthalate	0/13	5.00E-01	4.9E+01		No		mg/kg
Diethylphthalate	0/13	5.00E-01	2.0E+03		No		mg/kg
Dimethylphthalate	0/13	5.00E-01	2.4E+04		No		mg/kg
Hexachlorobenzene	0/13	5.00E-01	1.3E+00	5.4E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/13	5.00E-01	3.0E-01	1.0E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/13	5.00E-01	1.0E+00		No		mg/kg
Hexachloroethane	0/13	5.00E-01	1.5E+00	5.8E-01	No	No	mg/kg
Isophorone	0/13	5.00E-01	3.0E+02	9.9E+00	No	No	mg/kg
Lead	0/13	2.00E+01	1.0E-04		Yes		mg/kg
Mercury	0/13	2.00E-01	1.4E-01		Yes		mg/kg
N-Nitroso-di-n-propylamine	0/13	5.00E-01		7.3E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/13	5.00E-01		1.0E+00		No	mg/kg
Naphthalene	0/13	5.00E-01	1.3E+01		No		mg/kg
Nitrobenzene	0/13	5.00E-01	6.1E-01		No		mg/kg
PCB-1221	0/16	5.45E-01		1.1E-02		Yes	mg/kg
PCB-1232	0/16	5.45E-01		1.1E-02		Yes	mg/kg
PCB-1242	0/16	5.45E-01		9.7E-03		Yes	mg/kg
PCB-1248	0/16	5.45E-01		1.1E-02		Yes	mg/kg
PCB-1268	0/1	1.00E-01					mg/kg
Pentachlorophenol	0/13	5.00E-01	7.9E+01	1.3E-01	No	Yes	mg/kg
Phenol	0/13	5.00E-01	1.4E+03		No		mg/kg
Plutonium-239/240	0/1	5.70E-01		2.0E+00		No	pCi/g
Polychlorinated biphenyl	0/1	1.00E-01		1.0E-02		Yes	mg/kg

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Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

----- LOCATION-SWMU 99A MEDIA-Surface Soil -----
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Protactinium-234m	0/16	5.00E+02		4.9E-03		Yes	pCi/g
Pyridine	0/1	4.80E-01	1.3E+00		No		mg/kg
Selenium	0/11	1.00E+00	1.2E+01		No		mg/kg
Silver	0/13	4.00E+00	6.1E+00		No		mg/kg
Thallium	0/13	1.50E+01					mg/kg
Trichloroethene	0/2	2.64E-01	1.2E+00	9.1E-02	No	Yes	mg/kg
Uranium-235	0/16	9.90E+00		1.2E-01		Yes	pCi/g
Vinyl Chloride	0/2	2.64E-01		1.5E-03		Yes	mg/kg
bis(2-Chloroethoxy)methane	0/13	5.00E-01					mg/kg
bis(2-Chloroethyl) ether	0/13	5.00E-01		5.9E-03		Yes	mg/kg
bis(2-Chloroisopropyl) ether	0/13	5.00E-01		1.1E-01		Yes	mg/kg
bis(2-Ethylhexyl) phthalate	0/13	5.00E-01	1.4E+01	2.8E-01	No	Yes	mg/kg
cis-1,2-Dichloroethene	0/2	2.64E-01	6.1E+00		No		mg/kg
trans-1,2-Dichloroethene	0/2	2.64E-01	1.1E+01		No		mg/kg

----- LOCATION-SWMU 99B MEDIA-RGA Groundwater -----

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/15	5.00E-01	5.4E-02		Yes		mg/L
1,1,2-Trichloroethane	0/15	5.00E-01	8.1E-04	1.8E-05	Yes	Yes	mg/L
1,1-Dichloroethane	0/15	5.00E-01	2.7E-02		Yes		mg/L
1,1-Dichloroethene	0/15	5.00E-01	1.8E-03	9.3E-07	Yes	Yes	mg/L
1,2-Dichloroethane	0/15	5.00E-01	6.7E-04	1.1E-05	Yes	Yes	mg/L
Aluminum	0/3	1.00E+00	1.5E+00		No		mg/L
Antimony	0/7	2.50E-01	5.6E-04		Yes		mg/L
Arsenic	0/7	5.00E-03	4.5E-04	3.5E-06	Yes	Yes	mg/L
Benzene	0/15	5.00E-01	4.0E-04	3.5E-05	Yes	Yes	mg/L
Beryllium	0/7	2.50E-02	2.6E-03	1.0E-06	Yes	Yes	mg/L
Bromodichloromethane	0/15	5.00E-01	4.0E-03	8.4E-05	Yes	Yes	mg/L
Cadmium	0/7	1.00E-01	6.6E-04		Yes		mg/L
Carbon Tetrachloride	0/15	5.00E-01	1.2E-04	1.5E-05	Yes	Yes	mg/L
Chloroform	0/15	5.00E-01	2.0E-03	1.5E-05	Yes	Yes	mg/L
Cobalt	0/7	1.00E-01	9.1E-02		Yes		mg/L
Ethylbenzene	0/15	5.00E-01	4.5E-02		Yes		mg/L
Lead	0/7	2.50E-01	1.5E-07		Yes		mg/L

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SWMU 99B MEDIA-RGA Groundwater
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Mercury	0/7	2.00E-04	4.4E-04		No		mg/L
Molybdenum	0/3	1.00E-01	7.5E-03		Yes		mg/L
Nickel	0/7	1.00E-01	3.0E-02		Yes		mg/L
Polychlorinated biphenyl	0/1	1.70E-04		8.0E-06		Yes	mg/L
Potassium	0/6	1.05E+01					mg/L
Selenium	0/7	5.00E-03	7.5E-03		No		mg/L
Silver	0/7	6.00E-02	7.5E-03		Yes		mg/L
Tetrachloroethene	0/15	5.00E-01	7.9E-03	5.7E-05	Yes	Yes	mg/L
Toluene	0/15	5.00E-01	2.4E-02		Yes		mg/L
Total Phosphate as Phosphorus	0/3	2.00E+00	3.0E-05		Yes		mg/L
Uranium	0/7	1.00E-03	4.5E-03		No		mg/L
Vinyl Chloride	0/15	1.00E+00		1.7E-06		Yes	mg/L
Xylene	0/15	1.00E+00	4.0E-01		Yes		mg/L
cis-1,2-Dichloroethene	0/15	5.00E-01	2.0E-03		Yes		mg/L
trans-1,2-Dichloroethene	0/15	5.00E-01	4.0E-03		Yes		mg/L

LOCATION-SWMU 99B MEDIA-Subsurface Soil

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
1,1,1-Trichloroethane	0/7	1.20E+00	1.2E+02		No		mg/kg
1,1,2,2-Tetrachloroethane	0/7	1.20E+00		1.8E-02		Yes	mg/kg
1,1,2-Trichloroethane	0/7	1.20E+00	3.1E+00	4.6E-02	No	Yes	mg/kg
1,1-Dichloroethane	0/7	1.20E+00	6.7E+01		No		mg/kg
1,1-Dichloroethene	0/7	1.20E+00	3.5E+00	3.9E-03	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/8	5.00E-01	2.5E+01		No		mg/kg
1,2-Dichlorobenzene	0/8	5.00E-01	7.6E+01		No		mg/kg
1,2-Dichloroethane	0/7	1.20E+00	4.3E+00	2.2E-02	No	Yes	mg/kg
1,2-Dichloropropane	0/7	1.20E+00	1.6E+00	8.7E-02	No	Yes	mg/kg
1,2-Dimethylbenzene	0/7	1.20E+00	3.9E+02		No		mg/kg
1,3-Dichlorobenzene	0/8	5.00E-01	3.3E+01		No		mg/kg
1,4-Dichlorobenzene	0/8	5.00E-01	1.1E+03	2.9E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/8	5.00E-01	1.6E+02		No		mg/kg
2,4,6-Trichlorophenol	0/8	5.00E-01		8.1E-01		No	mg/kg
2,4-Dichlorophenol	0/8	5.00E-01	6.8E+00		No		mg/kg
2,4-Dimethylphenol	0/8	5.00E-01	3.1E+01		No		mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION=SWMU 99B MEDIA=Subsurface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
2,4-Dinitrotoluene	0/8	5.00E-01	4.7E+00	2.1E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/8	5.00E-01	2.3E+00	2.1E-02	No	Yes	mg/kg
2-Butanone	0/7	1.20E+00	3.9E+02		No		mg/kg
2-Chloronaphthalene	0/8	5.00E-01	1.1E+02		No		mg/kg
2-Chlorophenol	0/8	5.00E-01	7.0E+00		No		mg/kg
2-Hexanone	0/7	1.20E+00					mg/kg
2-Methyl-4,6-dinitrophenol	0/8	5.00E-01					mg/kg
2-Methylnaphthalene	0/8	5.00E-01					mg/kg
2-Methylphenol	0/8	5.00E-01	7.8E+01		No		mg/kg
2-Nitroaniline	0/8	5.00E-01	7.0E-02		Yes		mg/kg
2-Nitrophenol	0/8	5.00E-01					mg/kg
3,3'-Dichlorobenzidine	0/8	5.00E-01		2.1E-02		Yes	mg/kg
3-Nitroaniline	0/8	5.00E-01					mg/kg
4-Bromophenyl phenyl ether	0/8	5.00E-01					mg/kg
4-Chloro-3-methylphenol	0/8	5.00E-01					mg/kg
4-Chloroaniline	0/8	5.00E-01	6.3E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/8	5.00E-01					mg/kg
4-Methyl-2-pentanone	0/7	1.20E+00	3.3E+01		No		mg/kg
4-Methylphenol	0/8	5.00E-01	9.6E+00		No		mg/kg
4-Nitroaniline	0/8	5.00E-01					mg/kg
4-Nitrophenol	0/8	5.00E-01	1.6E+02		No		mg/kg
Acenaphthene	0/8	5.00E-01	6.4E+01		No		mg/kg
Acenaphthylene	0/8	5.00E-01					mg/kg
Americium-241	0/8	1.30E+01		1.5E+00		Yes	pCi/g
Anthracene	0/8	5.00E-01	6.5E+02		No		mg/kg
Antimony	0/8	2.00E+01	6.4E-02		Yes		mg/kg
Benz (a) anthracene	0/8	5.00E-01		8.5E-03		Yes	mg/kg
Benzene	0/7	1.20E+00	1.8E+00	5.1E-02	No	Yes	mg/kg
Benzo (a) pyrene	0/8	5.00E-01		8.5E-04		Yes	mg/kg
Benzo (b) fluoranthene	0/8	5.00E-01		8.5E-03		Yes	mg/kg
Benzo (ghi) perylene	0/8	5.00E-01					mg/kg
Benzo (k) fluoranthene	0/8	5.00E-01		8.5E-02		Yes	mg/kg
Boron	0/8	1.00E+02	3.3E+02		No		mg/kg
Bromodichloromethane	0/7	1.20E+00	1.9E+01	1.2E-01	No	Yes	mg/kg
Bromoform	0/7	1.20E+00	1.6E+01	5.4E-01	No	Yes	mg/kg
Bromomethane	0/7	1.20E+00	6.2E-01		Yes		mg/kg
Cadmium	0/8	2.00E+00	3.8E-01	3.3E+03	Yes	No	mg/kg
Carbazole	0/8	5.00E-01		6.1E-01		No	mg/kg
Carbon Disulfide	0/7	1.20E+00	4.6E+01		No		mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION=SWMU 99B MEDIA=Subsurface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Carbon Tetrachloride	0/7	1.20E+00	2.7E-01	1.6E-02	Yes	Yes	mg/kg
Cesium-137	0/8	4.00E+00		1.6E-02		Yes	pCi/g
Chlorobenzene	0/7	1.20E+00	5.6E+00		No		mg/kg
Chloroethane	0/7	1.20E+00	2.8E+02		No		mg/kg
Chloroform	0/7	1.20E+00	2.4E+00	2.1E-02	No	Yes	mg/kg
Chloromethane	0/7	1.20E+00		1.3E-01		Yes	mg/kg
Chrysene	0/8	5.00E-01		8.5E-01	No	No	mg/kg
Cobalt-60	0/8	1.70E+00		3.3E-03		Yes	pCi/g
Cyanide	0/7	1.00E+00	2.3E+01		No		mg/kg
Di-n-butylphthalate	0/8	5.00E-01	2.6E+02		No		mg/kg
Di-n-octylphthalate	0/8	5.00E-01	4.9E+01		No		mg/kg
Dibenz (a, h) anthracene	0/8	5.00E-01		8.5E-04		Yes	mg/kg
Dibenzofuran	0/8	5.00E-01	6.3E+00		No		mg/kg
Dibromochloromethane	0/7	1.20E+00	1.5E+01	5.9E-02	No	Yes	mg/kg
Diethylphthalate	0/8	5.00E-01	2.0E+03		No		mg/kg
Dimethylphthalate	0/8	5.00E-01	2.4E+04		No		mg/kg
Ethylbenzene	0/7	1.20E+00	1.1E+02		No		mg/kg
Fluoranthene	0/8	5.00E-01	4.3E+01		No		mg/kg
Fluorene	0/8	5.00E-01	6.3E+01		No		mg/kg
Hexachlorobenzene	0/8	5.00E-01	1.3E+00	5.4E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/8	5.00E-01	3.0E-01	1.0E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/8	5.00E-01	1.0E+00		No		mg/kg
Hexachloroethane	0/8	5.00E-01	1.5E+00	5.8E-01	No	No	mg/kg
Indeno (1, 2, 3-cd) pyrene	0/8	5.00E-01		8.5E-03		Yes	mg/kg
Isophorone	0/8	5.00E-01	3.0E+02	9.9E+00	No	No	mg/kg
Lead	0/8	2.00E+01	1.0E-04		Yes		mg/kg
Mercury	0/8	2.00E-01	1.4E-01		Yes		mg/kg
N-Nitroso-di-n-propylamine	0/8	5.00E-01		7.3E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/8	5.00E-01		1.0E+00		No	mg/kg
Naphthalene	0/8	5.00E-01	1.3E+01		No		mg/kg
Nitrobenzene	0/8	5.00E-01	6.1E-01		No		mg/kg
PCB-1016	0/6	1.25E-01	2.3E-01	9.9E-03	No	Yes	mg/kg
PCB-1221	0/6	1.25E-01		1.1E-02		Yes	mg/kg
PCB-1232	0/6	1.25E-01		1.1E-02		Yes	mg/kg
PCB-1242	0/6	1.25E-01		9.7E-03		Yes	mg/kg
PCB-1248	0/6	1.25E-01		1.1E-02		Yes	mg/kg
PCB-1254	0/6	1.25E-01	6.6E-02	9.9E-03	Yes	Yes	mg/kg
PCB-1260	0/6	1.25E-01		9.8E-03		Yes	mg/kg
Pentachlorophenol	0/8	5.00E-01	7.9E+01	1.3E-01	No	Yes	mg/kg

Table 1.83. Comparison of maximum quantitation limits to human health risk-based screening criteria by location and medium

LOCATION-SMMU 99B MEDIA-Subsurface Soil
(continued)

Analyte	Frequency of Detection	Maximum non-detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Phenanthrene	0/8	5.00E-01					mg/kg
Phenol	0/8	5.00E-01	1.4E+03		No		mg/kg
Protactinium-234m	0/8	7.70E+02		4.9E-03		Yes	pCi/g
Pyrene	0/8	5.00E-01	3.2E+01		No		mg/kg
Selenium	0/4	1.00E+00	1.2E+01		No		mg/kg
Silver	0/8	4.00E+00	6.1E+00		No		mg/kg
Styrene	0/7	1.20E+00	1.9E+02		No		mg/kg
Technetium-99	0/8	9.40E-01		4.4E+02		No	pCi/g
Tetrachloroethene	0/7	1.20E+00	1.2E+01	1.3E-01	No	Yes	mg/kg
Thallium	0/8	1.50E+01					mg/kg
Thorium-234	0/8	2.50E+01		7.2E+00		Yes	pCi/g
Toluene	0/7	1.20E+00	9.8E+01		No		mg/kg
Trichloroethene	0/7	1.20E+00	1.2E+00	9.1E-02	Yes	Yes	mg/kg
Uranium-235	0/8	9.90E+00		1.2E-01		Yes	pCi/g
Vinyl Chloride	0/7	1.00E+02		1.5E-03		Yes	mg/kg
bis (2-Chloroethoxy)methane	0/8	5.00E-01					mg/kg
bis (2-Chloroethyl)ether	0/8	5.00E-01		5.9E-03		Yes	mg/kg
bis (2-Chloroisopropyl)ether	0/8	5.00E-01		1.1E-01		Yes	mg/kg
bis (2-Ethylhexyl)phthalate	0/8	5.00E-01	1.4E+01	2.8E-01	No	Yes	mg/kg
cis-1,2-Dichloroethene	0/7	1.20E+00	6.1E+00		No		mg/kg
cis-1,3-Dichloropropene	0/7	1.20E+00					mg/kg
m,p-Xylene	0/7	2.50E+00	1.7E+03		No		mg/kg
trans-1,2-Dichloroethene	0/7	1.20E+00	1.1E+01		No		mg/kg
trans-1,3-Dichloropropene	0/7	1.20E+00					mg/kg

Table 1.84. Effect of retention of common laboratory contaminants in the COPC list on risk characterization without lead included as a COPC

SWMU	Total excess lifetime cancer risk		Total hazard index	
	with lab contaminants	Without lab contaminants	with lab contaminants	Without lab contaminants
Current industrial worker				
SWMU 99a (soil)	3.1E-4	3.1E-4	<1	<1
SWMU 193a (soil)	1.5E-5	1.5E-5	<1	<1
SWMU 193b (soil)	5.1E-4	5.1E-4	5.25	5.25
SWMU 193c (soil)	1.7E-10	1.7E-10	<1	<1
Future industrial worker				
SWMU 99a (RGA)	5.6E-4	5.6E-4	5.1	5.1
SWMU 99a (McNairy)	7.6E-5	7.6E-5	1.64	1.64
SWMU 99b (RGA)	2.6E-4	2.6E-4	7.0	7.0
SWMU 193a (RGA)	2.6E-5	2.6E-5	1.64	1.63
SWMU 193a (McNairy)	1.1E-6	1.1E-6	4.69	4.69
SWMU 193b (RGA)	4.4E-5	4.3E-5	1.74	1.73
SWMU 193b (McNairy)	8.4E-7	8.4E-7	<1	<1
SWMU 193c (RGA)	1.0E-5	1.0E-5	1.46	1.46
SWMU 193c (McNairy)	4.2E-4	4.2E-4	9.92	9.92
AOC 204 (RGA)	1.3E-3	1.3E-3	33.3	33.3
Future excavation worker				
SWMU 99a (soil)	2.1E-4	2.1E-4	1.46	1.46
SWMU 99b (soil)	2.1E-4	2.1E-4	<1	<1
SWMU 193a (soil)	1.7E-4	1.7E-4	<1	<1
SWMU 193b (soil)	1.7E-4	1.7E-4	1.75	1.75
SWMU 193c (soil)	1.7E-4	1.7E-4	2.09	2.09
SWMU 194 (soil)	3.1E-4	3.1E-4	<1	<1
AOC 204 (soil)	1.1E-6	1.1E-6	<1	<1
Future rural resident (values for HI are for a child)				
SWMU 99a (RGA)	5.6E-3	5.6E-3	97.3	97.2
SWMU 99a (McNairy)	1.8E-3	1.8E-3	53.1	53.1
SWMU 99a (soil)	1.4E-1	1.4E-1	17.2	17.2
SWMU 99b (RGA)	2.3E-3	2.3E-3	208	208
SWMU 193a (RGA)	2.4E-3	2.4E-3	28.6	28.5
SWMU 193a (McNairy)	4.2E-4	4.2E-4	59.9	59.9
SWMU 193a (soil)	7.1E-4	7.1E-4	6.25	6.24
SWMU 193b (RGA)	1.0E-3	1.0E-3	55.5	54.8
SWMU 193b (McNairy)	1.2E-5	1.2E-5	2.69	2.69
SWMU 193b (soil)	3.0E-3	3.0E-3	66.7	66.7
SWMU 193c (RGA)	1.5E-4	1.5E-4	80.7	80.7
SWMU 193c (McNairy)	4.0E-3	4.0E-3	103	103
SWMU 193c (soil)	1.1E-9	1.1E-9	3.04	3.04
AOC 204 (RGA)	1.5E-2	1.5E-2	279	279
Future recreational user (values for HI are for a child)				
SWMU 99a (soil)	2.7E-6	2.7E-6	<1	<1
SWMU 193a (soil)	3.6E-6	3.6E-6	<1	<1
SWMU 193b (soil)	4.4E-8	4.4E-8	<1	<1
SWMU 193c (soil)	NV	NV	<1	<1

NV = No values

Table 1.85. Comparison of background concentrations to human health risk-based screening criteria

----- Media-Subsurface soil -----

Analyte	Background concentration	HI	ELCR	Exceed HI	Exceed ELCR	Units
Aluminum	12000.00	7.32E+02		Yes		mg/kg
Antimony	0.21	6.35E-02		Yes		mg/kg
Arsenic	7.90	6.93E-01	9.24E-03	Yes	Yes	mg/kg
Barium	170.00	3.70E+01		Yes		mg/kg
Beryllium	0.69	1.60E-01	1.04E-04	Yes	Yes	mg/kg
Cadmium	0.21	3.85E-01	3.26E+03	No	No	mg/kg
Calcium	6100.00					mg/kg
Cesium-137	0.28		1.56E-02		Yes	pCi/g
Chromium (III)	43.00	6.05E+01		No		mg/kg
Cobalt	13.00	2.09E+02		No		mg/kg
Copper	25.00	7.36E+01		No		mg/kg
Iron	28000.00	3.14E+02		Yes		mg/kg
Lead	23.00	1.05E-04		Yes		mg/kg
Magnesium	2100.00					mg/kg
Manganese	820.00	1.43E+01		Yes		mg/kg
Mercury	0.13	1.38E-01		No		mg/kg
Nickel	22.00	3.40E+01		No		mg/kg
Potassium	950.00					mg/kg
Potassium-40	16.00		5.33E-02		Yes	pCi/g
Radium-226	1.50		4.82E-03		Yes	pCi/g
Selenium	0.70	1.21E+01		No		mg/kg
Silver	2.70	6.12E+00		No		mg/kg
Sodium	340.00					mg/kg
Technetium-99	2.80		4.40E+02		No	pCi/g
Thallium	0.34					mg/kg
Thorium-228	1.60		5.25E-03		Yes	pCi/g
Thorium-230	1.40		1.62E+01		No	pCi/g
Thorium-232	1.50		1.87E+01		No	pCi/g
Uranium	4.60	1.08E+01		No		mg/kg
Uranium-234	2.40		1.38E+01		No	pCi/g
Uranium-235	0.14		1.22E-01		Yes	pCi/g
Uranium-238	1.20		4.73E-01		Yes	pCi/g
Vanadium	37.00	5.62E-01		Yes		mg/kg
Zinc	60.00	4.01E+02		No		mg/kg

----- Media-Surface soil -----

Analyte	Background concentration	HI	ELCR	Exceed HI	Exceed ELCR	Units
Aluminum	13000.00	7.32E+02		Yes		mg/kg
Antimony	0.21	6.35E-02		Yes		mg/kg
Arsenic	12.00	6.93E-01	9.24E-03	Yes	Yes	mg/kg
Barium	200.00	3.70E+01		Yes		mg/kg
Beryllium	0.67	1.60E-01	1.04E-04	Yes	Yes	mg/kg
Cadmium	0.21	3.85E-01	3.26E+03	No	No	mg/kg
Calcium	200000.00					mg/kg
Cesium-137	0.49		1.56E-02		Yes	pCi/g
Chromium (III)	16.00	6.05E+01		No		mg/kg
Cobalt	14.00	2.09E+02		No		mg/kg
Copper	19.00	7.36E+01		No		mg/kg
Iron	28000.00	3.14E+02		Yes		mg/kg
Lead	36.00	1.05E-04		Yes		mg/kg
Magnesium	7700.00					mg/kg
Manganese	1500.00	1.43E+01		Yes		mg/kg
Mercury	0.20	1.38E-01		Yes		mg/kg
Neptunium-237	0.10		6.82E-02		Yes	pCi/g
Nickel	21.00	3.40E+01		No		mg/kg
Plutonium-238	0.07		1.67E-02		Yes	pCi/g
Plutonium-239	0.03		1.35E-01		No	pCi/g
Potassium	1300.00					mg/kg
Potassium-40	16.00		5.33E-02		Yes	pCi/g

Table 1.85. Comparison of background concentrations to human health risk-based screening criteria

----- Media=Surface soil -----
(continued)

Analyte	Background concentration	HI	ELCR	Exceed HI	Exceed ELCR	Units
Radium-226	1.50		4.82E-03		Yes	pCi/g
Selenium	0.80	1.21E+01		No		mg/kg
Silver	2.30	6.12E+00		No		mg/kg
Sodium	320.00					mg/kg
Strontium-90	4.70		1.11E+01		No	pCi/g
Technetium-99	2.50		4.40E+02		No	pCi/g
Thallium	0.21					mg/kg
Thorium-228	1.60		5.25E-03		Yes	pCi/g
Thorium-230	1.50		1.62E+01		No	pCi/g
Thorium-232	1.50		1.87E+01		No	pCi/g
Uranium	4.90	1.08E+01		No		mg/kg
Uranium-234	2.50		1.38E+01		No	pCi/g
Uranium-235	0.14		1.22E-01		Yes	pCi/g
Uranium-238	1.20		4.73E-01		Yes	pCi/g
Vanadium	38.00	5.62E-01		Yes		mg/kg
Zinc	65.00	4.01E+02		No		mg/kg

Table 1.86. Effect of using provisional and withdrawn toxicity values on risk characterization with lead excluded as a COPC

SWMU	Total excess lifetime cancer risk		Total hazard index	
	with provisional and withdrawn toxicity values	Without provisional and withdrawn toxicity values	With provisional and withdrawn toxicity values	Without provisional and withdrawn toxicity values
Current industrial worker				
SWMU 99a (soil)	3.1E-4	7.5E-5	<1	<1
SWMU 193a (soil)	1.5E-5	9.2E-6	<1	<1
SWMU 193b (soil)	5.1E-4	2.7E-9	5.25	5.25
SWMU 193c (soil)	1.7E-10	1.7E-10	<1	<1
Future industrial worker				
SWMU 99a (RGA)	5.6E-4	3.1E-4	5.11	2.61
SWMU 99a (McNairy)	7.6E-5	5.3E-5	1.64	<1
SWMU 99b (RGA)	2.6E-4	1.5E-4	7.0	2.22
SWMU 193a (RGA)	2.6E-5	1.7E-5	1.64	<1
SWMU 193a (McNairy)	1.1E-6	8.8E-7	4.69	<1
SWMU 193b (RGA)	4.4E-5	1.7E-5	1.74	<1
SWMU 193b (McNairy)	8.4E-7	1.5E-7	<1	<1
SWMU 193c (RGA)	1.1E-5	1.9E-6	1.46	1.09
SWMU 193c (McNairy)	4.2E-4	2.0E-4	9.92	7.55
AOC 204	1.3E-3	1.0E-3	33.3	32.1
Future excavation worker				
SWMU 99a (soil)	2.1E-4	1.2E-4	1.46	1.29
SWMU 99b (soil)	2.1E-4	1.4E-5	<1	<1
SWMU 193a (soil)	1.7E-4	8.8E-6	<1	<1
SWMU 193b (soil)	1.7E-4	8.7E-10	1.75	1.75
SWMU 193c (soil)	1.7E-4	5.0E-10	2.09	1.35
SWMU 194 (soil)	3.1E-4	2.5E-10	<1	<1
AOC 204 (soil)	1.1E-6	7.8E-7	<1	<1
Future rural resident (values for HI are for a child)				
SWMU 99a (RGA)	5.6E-3	3.8E-3	97.3	68.5
SWMU 99a (McNairy)	1.8E-3	1.6E-3	53.1	41.6
SWMU 99a (soil)	1.5E-1	1.5E-1	17.2	17.2
SWMU 99b (RGA)	2.3E-3	1.3E-3	208	152
SWMU 193a (RGA)	2.4E-3	2.3E-3	28.6	12.9
SWMU 193a (McNairy)	4.2E-4	4.1E-4	59.9	10.7
SWMU 193a (soil)	7.1E-4	4.3E-4	6.25	6.25
SWMU 193b (RGA)	1.0E-3	8.0E-4	55.5	42.2
SWMU 193b (McNairy)	1.2E-5	6.2E-6	2.69	2.34
SWMU 193b (soil)	3.0E-3	1.8E-8	66.7	66.7
SWMU 193c (RGA)	1.5E-4	7.8E-5	80.7	76.4
SWMU 193c (McNairy)	4.0E-3	2.4E-3	103	76.2
SWMU 193c (soil)	1.1E-9	1.1E-9	3.04	3.04
AOC 204 (RGA)	1.5E-2	1.3E-2	279	265
Future recreational user (values for HI are for a child)				
SWMU 99a (soil)	2.7E-6	1.3E-6	<1	<1
SWMU 193a (soil)	3.6E-6	1.3E-6	<1	<1
SWMU 193b (soil)	4.4E-8	NC	<1	<1
SWMU 193c (soil)	NC	NC	<1	<1

NC = No COPCs with toxicity information

Table 1.87. Summary of uncertainties affecting risk assessment

Description of uncertainty	Estimated effect ^a		
	Small	Moderate	Large
Uncertainties related to data and data evaluation			
Inclusion of infrequently detected analytes	X		
Inclusion of infrequently analyzed for analytes	X		
Lack of consideration of temporal patterns in detection of analytes	X		
Quantitation limits for some analytes exceeding their respective human health risk-based screening criteria	X	X	
Inclusion of common laboratory contaminants in data	X		
Lack of analyte comparison to concentrations of these analytes in associated blanks	X		
Removal of analytes from the COPC list on the basis of a toxicity screen	X		
Removal of inorganic analytes in soil from the COPC list on the basis of a comparison to background concentrations	X		
Lack of approved groundwater background concentrations for comparison for the COPC list	X		
Characterization of exposure point concentrations for environmental media under current conditions	X		
Characterization of exposure point concentrations for environmental media under future conditions	X		
Use of groundwater data from samples collected from boreholes versus monitoring wells	X	X	
Migration of groundwater to off-site receptors underestimating risk		X	
Use of total water samples versus filtered		X	
Uncertainties related to exposure assessment			
Incorporation of biota fate and transport modeling into risk estimates	X	X	
Use of reasonable maximum exposure parameters versus average exposure parameters for all exposure routes and pathways	X		
Evaluation of groundwater separately from soil in future land use scenarios	X		
Lack of consideration of livestock scenarios	X		
Lack of consideration of an intruder/infrequent recreator land use scenario	X		
Summation of risk across areas and across scenarios	X		
Use of KDEP default values instead of EPA default values when estimating dermal absorbed dose for the HI and ELCR	X	X	
Use of site-specific exposure values on systemic toxicity and ELCR for the excavation worker	X	X	X

Table 1.87. (Continued)

Description of uncertainty	Estimated effect ^a		
	Small	Moderate	Large
Migration of groundwater to offsite receptors may underestimate risk		X	
Use of site-specific exposure values on systemic toxicity and ELCR for the current industrial worker	X	X	
Use of site-specific exposure values on ELCR for the excavation worker	X	X	X
Use of chronic toxicity values for the excavation worker use scenario	X		
Uncertainties related to toxicity assessment			
Use of provisional toxicity values for the systemic toxicity of lead			X
Use of provisional or withdrawn toxicity values for systemic toxicity and ELCR	X	X	
Use of KDEP default values for calculating the dermally absorbed dose of systemic toxicants			X
Route to route extrapolation in the derivation of toxicity values	X		
Derivation of toxicity values			
Chemicals		X	
Radionuclides	X		
Selection of toxicity values for polychlorinated biphenyls	X		
Calculation of absorbed dose toxicity values from administered dose toxicity values	X		
Uncertainties related to risk characterization			
Combination of chemical-specific risk values and pathway risk value	X		
Excluding "hot-spot" soil samples from the risk characterization of SWMU 99a	X	X	
Combination of risk from chemical exposure with those from radionuclide exposure	X	X	

^a Definitions of effect are:

- Small Uncertainty should not cause the risk estimate to vary by more than one order of magnitude.
- Moderate Uncertainty should cause the risk estimate to vary between one and two orders of magnitude.
- Large Uncertainty may cause the risk estimate to vary by more than two orders of magnitude.

Table 1.88. Remedial goal options for WAG 28^a

----- LANDUSE-Future Industrial LOCATION-SWMU 193A MEDIA-Surface Soil -----										
Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benzo(a)pyrene	2.50E-01	9.17E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg
Dibenz(a,h)anthracene	1.30E-01	4.77E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg
----- LANDUSE-Future Industrial LOCATION-SWMU 193B MEDIA-Surface Soil -----										
Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Beryllium	1.57E+00	5.08E-04	1.66E-01	9.5E-01	9.5E+00	2.8E+01	3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	8.87E+01	2.70E-09	3.12E+00	2.8E+00	2.8E+01	8.5E+01				mg/kg
Vanadium	6.50E+01		1.96E+00	3.3E+00	3.3E+01	1.0E+02				mg/kg
----- LANDUSE-Future Industrial LOCATION-SWMU 193C MEDIA-Surface Soil -----										
Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Chromium	5.47E+00	1.67E-10	1.93E-01	2.8E+00	2.8E+01	8.5E+01				mg/kg
Lead	2.49E+01		3.62E+03	6.9E-04	6.9E-03	2.1E-02				mg/kg
----- LANDUSE-Future Industrial LOCATION-SWMU 99A MEDIA-Surface Soil -----										
Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Beryllium	6.67E-01	2.16E-04	7.03E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Benz(a)anthracene	7.96E-01	2.92E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	4.89E-01	1.79E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	1.15E+00	4.22E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Dibenz(a,h)anthracene	2.51E-01	9.19E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg
Indeno(1,2,3-cd)pyrene	8.01E-01	2.93E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Cesium-137	1.06E+00	1.01E-05					1.0E-01	1.0E+00	1.0E+01	pCi/g
Neptunium-237	1.28E+01	2.82E-05					4.5E-01	4.5E+00	4.5E+01	pCi/g
Uranium-238	5.17E+01	1.65E-05					3.1E+00	3.1E+01	3.1E+02	pCi/g

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Table 1.88. Remedial goal options for WAG 28

----- LANDUSE=Industrial LOCATION=SWMU 193A MEDIA=Surface Soil -----										
Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benzo(a)pyrene	2.50E-01	9.17E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg
Dibenz(a,h)anthracene	1.30E-01	4.77E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg
----- LANDUSE=Industrial LOCATION=SWMU 193B MEDIA=Surface Soil -----										
Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Beryllium	1.57E+00	5.08E-04	1.66E-01	9.5E-01	9.5E+00	2.8E+01	3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	8.87E+01	2.70E-09	3.12E+00	2.8E+00	2.8E+01	8.5E+01				mg/kg
Vanadium	6.50E+01		1.96E+00	3.3E+00	3.3E+01	1.0E+02				mg/kg
----- LANDUSE=Industrial LOCATION=SWMU 193C MEDIA=Surface Soil -----										
Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Chromium	5.47E+00	1.67E-10	1.93E-01	2.8E+00	2.8E+01	8.5E+01				mg/kg
Lead	2.49E+01		3.62E+03	6.9E-04	6.9E-03	2.1E-02				mg/kg
----- LANDUSE=Industrial LOCATION=SWMU 99A MEDIA=Surface Soil -----										
Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Beryllium	6.67E-01	2.16E-04	7.03E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Benz(a)anthracene	7.96E-01	2.92E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	4.89E-01	1.79E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	1.15E+00	4.22E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Dibenz(a,h)anthracene	2.51E-01	9.19E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg
Indeno(1,2,3-cd)pyrene	8.01E-01	2.93E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Cesium-137	1.06E+00	1.01E-05					1.0E-01	1.0E+00	1.0E+01	pCi/g
Neptunium-237	1.28E+01	2.82E-05					4.5E-01	4.5E+00	4.5E+01	pCi/g
Uranium-238	5.17E+01	1.65E-05					3.1E+00	3.1E+01	3.1E+02	pCi/g

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Table 1.88. Remedial goal options for WAG 28

----- LANDUSE-Recreational LOCATION=SWMU 193A MEDIA=Surface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benzo (a) pyrene	2.50E-01	1.25E-06					2.0E-01	2.0E+00	2.0E+01	mg/kg
Dibenz (a, h) anthracene	1.30E-01	2.12E-06					6.1E-02	6.1E-01	6.1E+00	mg/kg

----- LANDUSE-Recreational LOCATION=SWMU 193C MEDIA=Surface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Lead	2.49E+01		7.21E+00	3.5E-01	3.5E+00	1.0E+01				mg/kg

----- LANDUSE-Recreational LOCATION=SWMU 99A MEDIA=Surface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Dibenz (a, h) anthracene	2.51E-01	1.02E-06					2.5E-01	2.5E+00	2.5E+01	mg/kg

----- LANDUSE-Residential LOCATION=SWMU 193A MEDIA=Surface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Chromium	1.22E+01	2.51E-09	6.22E+00	2.0E-01	2.0E+00	5.9E+00				mg/kg
Benz (a) anthracene	1.80E-01	3.07E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo (a) pyrene	2.50E-01	4.25E-04					5.9E-04	5.9E-03	5.9E-02	mg/kg
Benzo (b) fluoranthene	5.10E-02	8.66E-06					5.9E-03	5.9E-02	5.9E-01	mg/kg
Dibenz (a, h) anthracene	1.30E-01	2.20E-04					5.9E-04	5.9E-03	5.9E-02	mg/kg
Indeno (1, 2, 3-cd) pyrene	1.60E-01	2.71E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg

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Table 1.88. Remedial goal options for WAG 28

----- LANDUSE=Residential LOCATION=SWMU 193B MEDIA=Surface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Beryllium	1.57E+00	2.98E-03	1.69E+00	9.3E-02	9.3E-01	2.8E+00	5.3E-04	5.3E-03	5.3E-02	mg/kg
Chromium	8.87E+01	1.82E-08	4.51E+01	2.0E-01	2.0E+00	5.9E+00				mg/kg
Vanadium	6.50E+01		1.99E+01	3.3E-01	3.3E+00	9.8E+00				mg/kg

----- LANDUSE=Residential LOCATION=SWMU 193C MEDIA=Surface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Chromium	5.47E+00	1.12E-09	2.78E+00	2.0E-01	2.0E+00	5.9E+00				mg/kg
Lead	2.49E+01		2.47E+05	1.0E-05	1.0E-04	3.0E-04				mg/kg
Zinc	4.16E+01		2.60E-01	1.6E+01	1.6E+02	4.8E+02				mg/kg

----- LANDUSE=Residential LOCATION=SWMU 99A MEDIA=Surface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Barium	2.08E+02		3.25E+00	6.4E+00	6.4E+01	1.9E+02				mg/kg
Beryllium	6.67E-01	1.26E-03	7.16E-01	9.3E-02	9.3E-01	2.8E+00	5.3E-04	5.3E-03	5.3E-02	mg/kg
Chromium	9.40E+00	1.93E-09	4.78E+00	2.0E-01	2.0E+00	5.9E+00				mg/kg
Zinc	1.13E+02		7.06E-01	1.6E+01	1.6E+02	4.8E+02				mg/kg
Benzo(a)anthracene	7.96E-01	1.36E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(a)pyrene	4.89E-01	8.31E-04					5.9E-04	5.9E-03	5.9E-02	mg/kg
Benzo(b)fluoranthene	1.15E+00	1.95E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(k)fluoranthene	5.72E-01	9.67E-06					5.9E-02	5.9E-01	5.9E+00	mg/kg
Chrysene	1.31E+00	2.24E-06					5.9E-01	5.9E+00	5.9E+01	mg/kg
Dibenz(a,h)anthracene	2.51E-01	4.24E-04					5.9E-04	5.9E-03	5.9E-02	mg/kg
Indeno(1,2,3-cd)pyrene	8.01E-01	1.35E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
PCB-1016	2.38E-01	1.06E-04	3.17E+00	7.5E-03	7.5E-02	2.2E-01	2.3E-03	2.3E-02	2.3E-01	mg/kg
PCB-1254	9.60E-02	4.26E-05	4.48E+00	2.1E-03	2.1E-02	6.4E-02	2.3E-03	2.3E-02	2.3E-01	mg/kg
PCB-1260	1.87E-01	8.24E-05					2.3E-03	2.3E-02	2.3E-01	mg/kg
Cesium-137	1.06E+00	7.76E-05					1.4E-02	1.4E-01	1.4E+00	pCi/g
Neptunium-237	1.28E+01	1.26E-03					1.0E-02	1.0E-01	1.0E+00	pCi/g
Technetium-99	4.61E+02	1.42E-01					3.2E-03	3.2E-02	3.2E-01	pCi/g
Thorium-234	2.16E+01	1.18E-04					1.8E-01	1.8E+00	1.8E+01	pCi/g
Uranium-234	1.64E+01	2.02E-04					8.1E-02	8.1E-01	8.1E+00	pCi/g

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Table 1.88. Remedial goal options for WAG 28

----- LANDUSE=Residential LOCATION=SWMU 99A MEDIA=Surface Soil -----
 (continued)

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Uranium-238	5.17E+01	9.99E-04					5.2E-02	5.2E-01	5.2E+00	pCi/g

Table 1.88. Remedial goal options for WAG 28

----- LANDUSE=Excavation LOCATION=SWMU 193A MEDIA=Subsurface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Beryllium	6.38E-01	1.56E-04	5.08E-02				4.1E-03	4.1E-02	4.1E-01	mg/kg
Benzo (a) pyrene	2.50E-01	8.81E-06					2.8E-02	2.8E-01	2.8E+00	mg/kg
Dibenz (a, h) anthracene	1.30E-01	4.58E-06					2.8E-02	2.8E-01	2.8E+00	mg/kg

----- LANDUSE=Excavation LOCATION=SWMU 193B MEDIA=Subsurface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Beryllium	7.02E-01	1.72E-04	5.59E-02				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	3.84E+01	8.66E-10	1.04E+00	3.7E+00	3.7E+01	1.1E+02				mg/kg
Vanadium	2.89E+01		6.57E-01	4.4E+00	4.4E+01	1.3E+02				mg/kg

----- LANDUSE=Excavation LOCATION=SWMU 193C MEDIA=Subsurface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Beryllium	6.83E-01	1.67E-04	5.43E-02				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	2.15E+01	4.85E-10	5.83E-01	3.7E+00	3.7E+01	1.1E+02				mg/kg
Iron	1.39E+04		6.41E-01	2.2E+03	2.2E+04	6.5E+04				mg/kg
Lead	1.36E+01		1.88E+03	7.2E-04	7.2E-03	2.2E-02				mg/kg
Manganese	3.81E+02		3.51E-01	1.1E+02	1.1E+03	3.3E+03				mg/kg
Vanadium	1.27E+01		2.90E-01	4.4E+00	4.4E+01	1.3E+02				mg/kg

----- LANDUSE=Excavation LOCATION=SWMU 194 MEDIA=Subsurface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	5.41E+03		1.03E-01	5.3E+03	5.3E+04	1.6E+05				mg/kg
Beryllium	1.28E+00	3.13E-04	1.02E-01	1.3E+00	1.3E+01	3.8E+01	4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	1.05E+01	2.37E-10	2.85E-01	3.7E+00	3.7E+01	1.1E+02				mg/kg
Lead	1.58E+01		2.19E+03	7.2E-04	7.2E-03	2.2E-02				mg/kg

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Table 1.88. Remedial goal options for WAG 28

----- LANDUSE=Excavation LOCATION=SWMU 99A MEDIA=Subsurface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Antimony	2.52E+00		5.13E-01	4.9E-01	4.9E+00	1.5E+01				mg/kg
Arsenic	3.00E+00	1.17E-05	7.28E-02				2.6E-01	2.6E+00	2.6E+01	mg/kg
Beryllium	3.05E-01	7.46E-05	2.43E-02				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	8.41E+00	1.90E-10	2.28E-01	3.7E+00	3.7E+01	1.1E+02				mg/kg
Lead	1.81E+01		2.50E+03	7.2E-04	7.2E-03	2.2E-02				mg/kg
Manganese	2.17E+02		2.00E-01	1.1E+02	1.1E+03	3.3E+03				mg/kg
2-Nitroaniline	5.35E-01		1.23E-01	4.4E-01	4.4E+00	1.3E+01				mg/kg
Aldrin	1.70E-02	1.00E-06	5.50E-03				1.7E-02	1.7E-01	1.7E+00	mg/kg
Benz (a) anthracene	5.87E-01	2.07E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Benzo (a) pyrene	6.37E-01	2.24E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Benzo (b) fluoranthene	7.70E-01	2.71E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Dibenz (a, h) anthracene	4.45E-01	1.57E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Dieldrin	3.50E-02	1.94E-06	6.81E-03				1.8E-02	1.8E-01	1.8E+00	mg/kg
Hexachlorobenzene	4.10E-01	2.33E-06	5.10E-03				1.8E-01	1.8E+00	1.8E+01	mg/kg
Indeno (1, 2, 3-cd) pyrene	5.34E-01	1.88E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
N-Nitroso-di-n-propylamine	4.10E-01	1.63E-05					2.5E-02	2.5E-01	2.5E+00	mg/kg
Toxaphene	3.50E-01	1.33E-06					2.6E-01	2.6E+00	2.6E+01	mg/kg
bis (2-Chloroethyl) ether	4.10E-01	1.79E-06					2.3E-01	2.3E+00	2.3E+01	mg/kg
Cesium-137	9.51E-01	6.78E-06					1.4E-01	1.4E+00	1.4E+01	pCi/g
Neptunium-237	1.07E+01	2.39E-05					4.5E-01	4.5E+00	4.5E+01	pCi/g
Thorium-234	1.95E+01	1.07E-06					1.8E+01	1.8E+02	1.8E+03	pCi/g
Uranium-234	1.38E+01	1.36E-06					1.0E+01	1.0E+02	1.0E+03	pCi/g
Uranium-238	4.35E+01	1.57E-05					2.8E+00	2.8E+01	2.8E+02	pCi/g

----- LANDUSE=Excavation LOCATION=SWMU 99B MEDIA=Subsurface Soil -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Arsenic	3.46E+00	1.35E-05	8.38E-02				2.6E-01	2.6E+00	2.6E+01	mg/kg
Beryllium	7.89E-01	1.93E-04	6.28E-02				4.1E-03	4.1E-02	4.1E-01	mg/kg

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Table 1.88. Remedial goal options for WAG 28

----- LANDUSE-Future Industrial LOCATION=AOC 204 MEDIA=RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
1,1-Dichloroethane	5.00E+00		6.92E-01		7.2E-01	7.2E+00	2.2E+01				mg/L
1,1-Dichloroethene	4.00E-02	1.78E-04	6.86E-02	7.0E-03				2.2E-04	2.2E-03	2.2E-02	mg/L
PCB-1254	2.50E-02	8.37E-05	2.93E+01		8.5E-05	8.5E-04	2.6E-03	3.0E-04	3.0E-03	3.0E-02	mg/L
PCB-1260	2.50E-02	1.85E-04						1.4E-04	1.4E-03	1.4E-02	mg/L
Polychlorinated biphenyl	1.70E-01	5.69E-04		5.0E-04				3.0E-04	3.0E-03	3.0E-02	mg/L
Tetrachloroethene	6.41E-01	2.75E-04	1.49E+00	5.0E-03	4.3E-02	4.3E-01	1.3E+00	2.3E-03	2.3E-02	2.3E-01	mg/L
Trichloroethene	5.51E-01	3.57E-05	1.74E+00	5.0E-03	3.2E-02	3.2E-01	9.5E-01	1.5E-02	1.5E-01	1.5E+00	mg/L

----- LANDUSE-Future Industrial LOCATION=SWMU 193A MEDIA=RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Iron	3.02E+01		1.01E+00		3.0E+00	3.0E+01	9.0E+01				mg/L
Pentachlorophenol	8.47E-03	1.19E-05	9.28E-03	1.0E-03				7.1E-04	7.1E-03	7.1E-02	mg/L
Trichloroethene	1.69E-01	1.09E-05	5.33E-01	5.0E-03	3.2E-02	3.2E-01	9.5E-01	1.5E-02	1.5E-01	1.5E+00	mg/L
Technetium-99	1.92E+02	1.68E-06						1.1E+02	1.1E+03	1.1E+04	pCi/L

----- LANDUSE-Future Industrial LOCATION=SWMU 193B MEDIA=RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
1,1-Dichloroethene	1.62E-03	7.21E-06	2.78E-03	7.0E-03				2.2E-04	2.2E-03	2.2E-02	mg/L
Carbon Tetrachloride	5.50E-03	3.36E-06	1.38E-01	5.0E-03	4.0E-03	4.0E-02	1.2E-01	1.6E-03	1.6E-02	1.6E-01	mg/L
Trichloroethene	5.00E-01	3.24E-05	1.58E+00	5.0E-03	3.2E-02	3.2E-01	9.5E-01	1.5E-02	1.5E-01	1.5E+00	mg/L

----- LANDUSE-Future Industrial LOCATION=SWMU 193C MEDIA=RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
1,2-Dichloroethene	5.62E-01		9.48E-01		5.9E-02	5.9E-01	1.8E+00				mg/L
Trichloroethene	1.62E-01	1.05E-05	5.11E-01	5.0E-03	3.2E-02	3.2E-01	9.5E-01	1.5E-02	1.5E-01	1.5E+00	mg/L

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Table 1.88. Remedial goal options for WAG 28

----- LANDUSE-Future Industrial LOCATION-SWMU 99A MEDIA-RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	1.08E+01		1.10E-01		9.9E+00	9.9E+01	3.0E+02				mg/L
Arsenic	5.51E-03	2.91E-05	1.81E-01	5.0E-02	3.0E-03	3.0E-02	9.1E-02	1.9E-04	1.9E-03	1.9E-02	mg/L
Beryllium	1.04E-02	2.12E-04	6.91E-02	4.0E-03				4.9E-05	4.9E-04	4.9E-03	mg/L
Chromium	1.27E-01		4.89E-01		2.6E-02	2.6E-01	7.8E-01				mg/L
Iron	2.32E+01		7.74E-01		3.0E+00	3.0E+01	9.0E+01				mg/L
Lead	8.13E-02		8.14E+03	0.0E+00	1.0E-06	1.0E-05	3.0E-05				mg/L
Manganese	1.66E+00		3.86E-01		4.3E-01	4.3E+00	1.3E+01				mg/L
Vanadium	3.67E-01		7.00E-01		5.2E-02	5.2E-01	1.6E+00				mg/L
1,1-Dichloroethene	1.79E-02	7.97E-05	3.07E-02	7.0E-03				2.2E-04	2.2E-03	2.2E-02	mg/L
Trichloroethene	6.76E-01	4.38E-05	2.13E+00	5.0E-03	3.2E-02	3.2E-01	9.5E-01	1.5E-02	1.5E-01	1.5E+00	mg/L
Radon-222	6.62E+02	1.95E-04						3.4E+00	3.4E+01	3.4E+02	pCi/L

----- LANDUSE-Future Industrial LOCATION-SWMU 99B MEDIA-RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Chromium	6.19E-02		2.39E-01		2.6E-02	2.6E-01	7.8E-01				mg/L
Trichloroethene	2.08E+00	1.35E-04	6.55E+00	5.0E-03	3.2E-02	3.2E-01	9.5E-01	1.5E-02	1.5E-01	1.5E+00	mg/L
Radon-222	4.12E+02	1.21E-04						3.4E+00	3.4E+01	3.4E+02	pCi/L

----- LANDUSE-Residential LOCATION-AOC 204 MEDIA-RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
1,1-Dichloroethane	5.00E+00		2.48E+01		2.0E-02	2.0E-01	6.0E-01				mg/L
1,1-Dichloroethene	4.00E-02	5.04E-03	2.78E+00	7.0E-03	1.4E-03	1.4E-02	4.3E-02	7.9E-06	7.9E-05	7.9E-04	mg/L
PCB-1254	2.50E-02	8.52E-04	1.84E+02		1.4E-05	1.4E-04	4.1E-04	2.9E-05	2.9E-04	2.9E-03	mg/L
PCB-1260	2.50E-02	1.11E-03						2.3E-05	2.3E-04	2.3E-03	mg/L
Polychlorinated biphenyl	1.70E-01	5.79E-03		5.0E-04				2.9E-05	2.9E-04	2.9E-03	mg/L
Tetrachloroethene	6.41E-01	1.72E-03	1.28E+01	5.0E-03	5.0E-03	5.0E-02	1.5E-01	3.7E-04	3.7E-03	3.7E-02	mg/L
Trichloroethene	5.51E-01	5.21E-04	5.40E+01	5.0E-03	1.0E-03	1.0E-02	3.1E-02	1.1E-03	1.1E-02	1.1E-01	mg/L
Vinyl Chloride	1.00E-04	1.47E-05		2.0E-03				6.8E-06	6.8E-05	6.8E-04	mg/L
cis-1,2-Dichloroethene	6.00E-03		3.69E-01	7.0E-02	1.6E-03	1.6E-02	4.9E-02				mg/L

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Table 1.88. Remedial goal options for WAG 28

----- LANDUSE=Residential LOCATION=SWMU 193A MEDIA=RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Fluoride	4.20E-01		4.64E-01	4.0E+00	9.1E-02	9.1E-01	2.7E+00				mg/L
Iron	3.02E+01		1.12E+01		2.7E-01	2.7E+00	8.1E+00				mg/L
1,1-Dichloroethene	2.00E-04	2.52E-05	1.39E-02	7.0E-03				7.9E-06	7.9E-05	7.9E-04	mg/L
Pentachlorophenol	8.47E-03	5.16E-05	4.88E-02	1.0E-03				1.6E-04	1.6E-03	1.6E-02	mg/L
Trichloroethene	1.69E-01	1.60E-04	1.65E+01	5.0E-03	1.0E-03	1.0E-02	3.1E-02	1.1E-03	1.1E-02	1.1E-01	mg/L
bis(2-Ethylhexyl)phthalate	1.29E-02	6.14E-06	7.98E-02	6.0E-03				2.1E-03	2.1E-02	2.1E-01	mg/L
cis-1,2-Dichloroethene	2.91E-03		1.79E-01	7.0E-02	1.6E-03	1.6E-02	4.9E-02				mg/L
Technetium-99	1.92E+02	2.13E-03						9.0E-02	9.0E-01	9.0E+00	pCi/L

----- LANDUSE=Residential LOCATION=SWMU 193B MEDIA=RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
1,1-Dichloroethene	1.62E-03	2.04E-04	1.12E-01	7.0E-03	1.4E-03	1.4E-02	4.3E-02	7.9E-06	7.9E-05	7.9E-04	mg/L
Acetone	3.30E-02		6.08E-01		5.4E-03	5.4E-02	1.6E-01				mg/L
Carbon Tetrachloride	5.50E-03	4.91E-05	5.20E+00	5.0E-03	1.1E-04	1.1E-03	3.2E-03	1.1E-04	1.1E-03	1.1E-02	mg/L
Trichloroethene	5.00E-01	4.72E-04	4.90E+01	5.0E-03	1.0E-03	1.0E-02	3.1E-02	1.1E-03	1.1E-02	1.1E-01	mg/L
bis(2-Ethylhexyl)phthalate	1.01E-02	4.79E-06	6.24E-02	6.0E-03				2.1E-03	2.1E-02	2.1E-01	mg/L
cis-1,2-Dichloroethene	8.22E-03		5.05E-01	7.0E-02	1.6E-03	1.6E-02	4.9E-02				mg/L
Technetium-99	2.73E+01	3.03E-04						9.0E-02	9.0E-01	9.0E+00	pCi/L

----- LANDUSE=Residential LOCATION=SWMU 193C MEDIA=RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
1,2-Dichloroethene	5.62E-01		6.48E+01		8.7E-04	8.7E-03	2.6E-02				mg/L
Trichloroethene	1.62E-01	1.53E-04	1.59E+01	5.0E-03	1.0E-03	1.0E-02	3.1E-02	1.1E-03	1.1E-02	1.1E-01	mg/L

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Table 1.88. Remedial goal options for WAG 28

----- LANDUSE=Residential LOCATION=SWMU 99A MEDIA=RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	1.08E+01		1.21E+00		9.0E-01	9.0E+00	2.7E+01				mg/L
Arsenic	5.51E-03	2.48E-04	2.06E+00	5.0E-02	2.7E-04	2.7E-03	8.0E-03	2.2E-05	2.2E-04	2.2E-03	mg/L
Barium	3.43E-01		5.51E-01	2.0E+00	6.2E-02	6.2E-01	1.9E+00				mg/L
Beryllium	1.04E-02	1.47E-03	6.24E-01	4.0E-03	1.7E-03	1.7E-02	5.0E-02	7.1E-06	7.1E-05	7.1E-04	mg/L
Chromium	1.27E-01		4.88E+00		2.6E-03	2.6E-02	7.8E-02				mg/L
Cobalt	9.44E-02		1.79E-01		5.3E-02	5.3E-01	1.6E+00				mg/L
Copper	7.98E-02		2.41E-01	1.3E+00	3.3E-02	3.3E-01	9.9E-01				mg/L
Iron	2.32E+01		8.60E+00		2.7E-01	2.7E+00	8.1E+00				mg/L
Lead	8.13E-02		9.05E+04	0.0E+00	9.0E-08	9.0E-07	2.7E-06				mg/L
Lithium	7.44E-02		4.15E-01		1.8E-02	1.8E-01	5.4E-01				mg/L
Manganese	1.66E+00		3.10E+00		5.4E-02	5.4E-01	1.6E+00				mg/L
Mercury	4.32E-04		2.14E-01	2.0E-03	2.0E-04	2.0E-03	6.0E-03				mg/L
Nickel	1.53E-01		8.99E-01	1.0E-01	1.7E-02	1.7E-01	5.1E-01				mg/L
Vanadium	3.67E-01		6.31E+00		5.8E-03	5.8E-02	1.7E-01				mg/L
Zinc	2.25E-01		1.08E-01		2.1E-01	2.1E+00	6.3E+00				mg/L
1,1-Dichloroethene	1.79E-02	2.25E-03	1.24E+00	7.0E-03	1.4E-03	1.4E-02	4.3E-02	7.9E-06	7.9E-05	7.9E-04	mg/L
Trichloroethene	6.76E-01	6.38E-04	6.62E+01	5.0E-03	1.0E-03	1.0E-02	3.1E-02	1.1E-03	1.1E-02	1.1E-01	mg/L
bis(2-Ethylhexyl)phthalate	9.56E-03	4.55E-06	5.91E-02	6.0E-03				2.1E-03	2.1E-02	2.1E-01	mg/L
cis-1,2-Dichloroethene	7.04E-03		4.33E-01	7.0E-02	1.6E-03	1.6E-02	4.9E-02				mg/L
Radon-222	6.62E+02	4.84E-04						1.4E+00	1.4E+01	1.4E+02	pCi/L
Technetium-99	4.50E+01	4.98E-04						9.0E-02	9.0E-01	9.0E+00	pCi/L

----- LANDUSE=Residential LOCATION=SWMU 99B MEDIA=RGA Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Barium	4.91E-01		7.87E-01	2.0E+00	6.2E-02	6.2E-01	1.9E+00				mg/L
Chromium	6.19E-02		2.38E+00		2.6E-03	2.6E-02	7.8E-02				mg/L
Iron	2.24E+00		8.32E-01		2.7E-01	2.7E+00	8.1E+00				mg/L
Manganese	2.60E-01		4.85E-01		5.4E-02	5.4E-01	1.6E+00				mg/L
Trichloroethene	2.08E+00	1.96E-03	2.04E+02	5.0E-03	1.0E-03	1.0E-02	3.1E-02	1.1E-03	1.1E-02	1.1E-01	mg/L
Radon-222	4.12E+02	3.01E-04						1.4E+00	1.4E+01	1.4E+02	pCi/L

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Table 1.88. Remedial goal options for WAG 28

----- LANDUSE-Future Industrial LOCATION-SWMU 193A MEDIA-McNairy Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Iron	1.32E+02		4.42E+00		3.0E+00	3.0E+01	9.0E+01				mg/L
cis-1,2-Dichloroethene	1.70E-01		2.63E-01	7.0E-02	6.5E-02	6.5E-01	1.9E+00				mg/L

----- LANDUSE-Future Industrial LOCATION-SWMU 193C MEDIA-McNairy Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	3.82E+01		3.87E-01		9.9E+00	9.9E+01	3.0E+02				mg/L
Antimony	1.14E-01		3.30E+00	6.0E-03	3.5E-03	3.5E-02	1.0E-01				mg/L
Arsenic	1.22E-02	6.46E-05	4.02E-01	5.0E-02	3.0E-03	3.0E-02	9.1E-02	1.9E-04	1.9E-03	1.9E-02	mg/L
Beryllium	1.11E-02	2.27E-04	7.40E-02	4.0E-03				4.9E-05	4.9E-04	4.9E-03	mg/L
Cadmium	3.54E-02		9.43E-01	5.0E-03	3.7E-03	3.7E-02	1.1E-01				mg/L
Chromium	1.43E-01		5.52E-01		2.6E-02	2.6E-01	7.8E-01				mg/L
Iron	5.89E+01		1.97E+00		3.0E+00	3.0E+01	9.0E+01				mg/L
Lead	2.50E-01		2.51E+04	0.0E+00	1.0E-06	1.0E-05	3.0E-05				mg/L
Manganese	1.36E+00		3.16E-01		4.3E-01	4.3E+00	1.3E+01				mg/L
Vanadium	8.36E-01		1.59E+00		5.2E-02	5.2E-01	1.6E+00				mg/L
1,1-Dichloroethene	2.50E-03	1.11E-05	4.29E-03	7.0E-03				2.2E-04	2.2E-03	2.2E-02	mg/L
1,2-Dichloroethane	2.50E-03	1.24E-06	4.67E-03	5.0E-03				2.0E-03	2.0E-02	2.0E-01	mg/L
Carbon Tetrachloride	2.50E-03	1.53E-06	6.26E-02	5.0E-03				1.6E-03	1.6E-02	1.6E-01	mg/L
Tetrachloroethene	2.50E-03	1.07E-06	5.81E-03	5.0E-03				2.3E-03	2.3E-02	2.3E-01	mg/L
Vinyl Chloride	9.19E-03	6.79E-05		2.0E-03				1.4E-04	1.4E-03	1.4E-02	mg/L
Radon-222	1.57E+02	4.63E-05						3.4E+00	3.4E+01	3.4E+02	pCi/L

----- LANDUSE-Future Industrial LOCATION-SWMU 99A MEDIA-McNairy Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
1,1-Dichloroethene	1.04E-02	4.64E-05	1.79E-02	7.0E-03				2.2E-04	2.2E-03	2.2E-02	mg/L
Carbon Tetrachloride	2.80E-03	1.71E-06	7.02E-02	5.0E-03				1.6E-03	1.6E-02	1.6E-01	mg/L
Trichloroethene	4.35E-01	2.82E-05	1.37E+00	5.0E-03	3.2E-02	3.2E-01	9.5E-01	1.5E-02	1.5E-01	1.5E+00	mg/L
cis-1,2-Dichloroethene	1.15E-01		1.79E-01	7.0E-02	6.5E-02	6.5E-01	1.9E+00				mg/L

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Table 1.88. Remedial goal options for WAG 28

----- LANDUSE-Residential LOCATION-SWMU 193A MEDIA-McNairy Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Iron	1.32E+02		4.90E+01		2.7E-01	2.7E+00	8.1E+00				mg/L
Trichloroethene	3.72E-03	3.52E-06	3.65E-01	5.0E-03	1.0E-03	1.0E-02	3.1E-02	1.1E-03	1.1E-02	1.1E-01	mg/L
cis-1,2-Dichloroethene	1.70E-01		1.05E+01	7.0E-02	1.6E-03	1.6E-02	4.9E-02				mg/L
Technetium-99	3.69E+01	4.08E-04						9.0E-02	9.0E-01	9.0E+00	pCi/L
Uranium-238	1.32E+00	3.25E-06						4.1E-01	4.1E+00	4.1E+01	pCi/L

----- LANDUSE-Residential LOCATION-SWMU 193B MEDIA-McNairy Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Trichloroethene	1.30E-02	1.23E-05	1.27E+00	5.0E-03	1.0E-03	1.0E-02	3.1E-02	1.1E-03	1.1E-02	1.1E-01	mg/L
cis-1,2-Dichloroethene	2.30E-02		1.41E+00	7.0E-02	1.6E-03	1.6E-02	4.9E-02				mg/L

----- LANDUSE-Residential LOCATION-SWMU 193C MEDIA-McNairy Groundwater -----

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	3.82E+01		4.27E+00		9.0E-01	9.0E+00	2.7E+01				mg/L
Antimony	1.14E-01		3.33E+01	6.0E-03	3.4E-04	3.4E-03	1.0E-02				mg/L
Arsenic	1.22E-02	5.50E-04	4.56E+00	5.0E-02	2.7E-04	2.7E-03	8.0E-03	2.2E-05	2.2E-04	2.2E-03	mg/L
Barium	2.44E-01		3.92E-01	2.0E+00	6.2E-02	6.2E-01	1.9E+00				mg/L
Beryllium	1.11E-02	1.57E-03	6.68E-01	4.0E-03	1.7E-03	1.7E-02	5.0E-02	7.1E-06	7.1E-05	7.1E-04	mg/L
Cadmium	3.54E-02		7.52E+00	5.0E-03	4.7E-04	4.7E-03	1.4E-02				mg/L
Chromium	1.43E-01		5.51E+00		2.6E-03	2.6E-02	7.8E-02				mg/L
Cobalt	5.32E-02		1.01E-01		5.3E-02	5.3E-01	1.6E+00				mg/L
Iron	5.89E+01		2.18E+01		2.7E-01	2.7E+00	8.1E+00				mg/L
Lead	2.50E-01		2.78E+05	0.0E+00	9.0E-08	9.0E-07	2.7E-06				mg/L
Manganese	1.36E+00		2.54E+00		5.4E-02	5.4E-01	1.6E+00				mg/L
Molybdenum	4.62E-02		1.11E+00		4.1E-03	4.1E-02	1.2E-01				mg/L
Nickel	5.37E-02		3.15E-01	1.0E-01	1.7E-02	1.7E-01	5.1E-01				mg/L
Silver	3.32E-02		7.38E-01		4.5E-03	4.5E-02	1.3E-01				mg/L
Uranium	6.40E-03		2.36E-01		2.7E-03	2.7E-02	8.1E-02				mg/L
Vanadium	8.36E-01		1.44E+01		5.8E-03	5.8E-02	1.7E-01				mg/L
1,1,2-Trichloroethane	2.50E-03	1.79E-05	3.78E-01	5.0E-03	6.6E-04	6.6E-03	2.0E-02	1.4E-04	1.4E-03	1.4E-02	mg/L
1,1-Dichloroethene	2.50E-03	3.15E-04	1.74E-01	7.0E-03	1.4E-03	1.4E-02	4.3E-02	7.9E-06	7.9E-05	7.9E-04	mg/L

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Table 1.88. Remedial goal options for WAG 28

 LANDUSE-Residential LOCATION-SWMU 193C MEDIA-McNairy Groundwater
 (continued)

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
1,2-Dichloroethane	2.50E-03	3.19E-05	3.74E-01	5.0E-03	6.7E-04	6.7E-03	2.0E-02	7.8E-05	7.8E-04	7.8E-03	mg/L
Benzene	2.50E-03	8.98E-06	6.26E-01	5.0E-03	4.0E-04	4.0E-03	1.2E-02	2.8E-04	2.8E-03	2.8E-02	mg/L
Bromodichloromethane	2.50E-03	6.76E-06	7.46E-02	1.0E-01				3.7E-04	3.7E-03	3.7E-02	mg/L
Carbon Tetrachloride	2.50E-03	2.23E-05	2.36E+00	5.0E-03	1.1E-04	1.1E-03	3.2E-03	1.1E-04	1.1E-03	1.1E-02	mg/L
Chloroform	2.50E-03	1.69E-05	1.52E-01	1.0E-01	1.6E-03	1.6E-02	4.9E-02	1.5E-04	1.5E-03	1.5E-02	mg/L
Polychlorinated biphenyl	1.00E-04	3.41E-06		5.0E-04				2.9E-05	2.9E-04	2.9E-03	mg/L
Tetrachloroethene	2.50E-03	6.73E-06	5.01E-02	5.0E-03				3.7E-04	3.7E-03	3.7E-02	mg/L
Trichloroethene	1.23E-03	1.16E-06	1.21E-01	5.0E-03	1.0E-03	1.0E-02	3.1E-02	1.1E-03	1.1E-02	1.1E-01	mg/L
Vinyl Chloride	9.19E-03	1.35E-03		2.0E-03				6.8E-06	6.8E-05	6.8E-04	mg/L
cis-1,2-Dichloroethene	5.00E-03		3.07E-01	7.0E-02	1.6E-03	1.6E-02	4.9E-02				mg/L
trans-1,2-Dichloroethene	5.00E-03		2.59E-01	1.0E-01	1.9E-03	1.9E-02	5.8E-02				mg/L
Radon-222	1.57E+02	1.15E-04						1.4E+00	1.4E+01	1.4E+02	pCi/L

 LANDUSE-Residential LOCATION-SWMU 99A MEDIA-McNairy Groundwater

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	Groundwater MCLs	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
1,1-Dichloroethene	1.04E-02	1.31E-03	7.23E-01	7.0E-03	1.4E-03	1.4E-02	4.3E-02	7.9E-06	7.9E-05	7.9E-04	mg/L
Carbon Tetrachloride	2.80E-03	2.50E-05	2.65E+00	5.0E-03	1.1E-04	1.1E-03	3.2E-03	1.1E-04	1.1E-03	1.1E-02	mg/L
Trichloroethene	4.35E-01	4.11E-04	4.26E+01	5.0E-03	1.0E-03	1.0E-02	3.1E-02	1.1E-03	1.1E-02	1.1E-01	mg/L
cis-1,2-Dichloroethene	1.15E-01		7.09E+00	7.0E-02	1.6E-03	1.6E-02	4.9E-02				mg/L

^a Source: Risk Assessment Information System, available online at http://risk.lsd.ornl.gov/tox/map_toxp.htm

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Table 2.1. Summary of surface soil chemical data, plant and soil invertebrate benchmarks, and associated hazard quotients for plants and soil invertebrates

SWMU	Chemical	Freq. of detection	Soil concentration (mg/kg)					Benchmarks (mg/kg)		Hazard quotient ^{a,b}	
			Mean	UCL95	Max. detect.	RME ^c	BQ ^d	Plants	Soil inverts	Plants	Soil inverts
SWMU 193a	Aluminum	4/4	3.62E+03	5.97E+03	1.09E+04	5.97E+03	0.84	50		2.18E+02	
SWMU 193a	Barium	4/4	2.67E+01	4.33E+01	8.40E+01	4.33E+01	0.42	500		1.68E-01	
SWMU 193a	Beryllium	1/4	2.68E-01	3.09E-01	6.40E-01	3.09E-01	0.96	10		6.40E-02	
SWMU 193a	Chromium	4/4	6.45E+00	1.22E+01	2.65E+01	1.22E+01	1.66	1	0.4	2.65E+01	6.62E+01
SWMU 193a	Cobalt	4/4	1.68E+00	2.79E+00	5.70E+00	2.79E+00	0.41	20		2.85E-01	
SWMU 193a	Copper	4/4	2.66E+00	3.90E+00	7.31E+00	3.90E+00	0.38	100	30	7.31E-02	2.44E-01
SWMU 193a	Iron	4/4	4.70E+03	7.74E+03	1.54E+04	7.74E+03	0.55				
SWMU 193a	Lithium	4/4	3.42E+00	5.49E+00	1.12E+01	5.49E+00					
SWMU 193a	Manganese	4/4	1.07E+02	1.80E+02	3.98E+02	1.80E+02	0.27	500		7.96E-01	
SWMU 193a	Nickel	2/4	3.10E+00	3.91E+00	7.50E+00	3.91E+00	0.36	30	200	2.50E-01	3.75E-02
SWMU 193a	Strontium	4/4	6.08E+01	1.22E+02	2.53E+02	1.22E+02					
SWMU 193a	Vanadium	4/4	8.80E+00	1.58E+01	3.15E+01	1.58E+01	0.83	2		1.58E+01	
SWMU 193a	Zinc	4/4	2.32E+01	2.91E+01	5.54E+01	2.91E+01	0.85	50	100	1.11E+00	5.54E-01
SWMU 193a	Anthracene	1/4	2.02E-01	3.15E-01	1.16E-01	1.16E-01			34		3.41E-03
SWMU 193a	Benz(a)anthracene	2/4	1.68E-01	2.80E-01	1.80E-01	1.80E-01			34		5.29E-03
SWMU 193a	Benzo(a)pyrene	2/4	1.86E-01	2.73E-01	2.50E-01	2.50E-01			34		
SWMU 193a	Benzo(b)fluoranthene	2/4	1.36E-01	2.91E-01	5.10E-02	5.10E-02					
SWMU 193a	Benzo(ghi)perylene	2/4	1.67E-01	2.80E-01	1.70E-01	1.70E-01					
SWMU 193a	bis(2-Ethylhexyl)phthalate	2/4	1.56E-01	2.85E-01	1.70E-01	1.70E-01		100	630	1.70E-03	2.70E-04
SWMU 193a	Chrysene	2/4	1.68E-01	2.80E-01	1.70E-01	1.70E-01			34		5.00E-03
SWMU 193a	Dibenz(a,h)anthracene	1/4	2.04E-01	3.13E-01	1.30E-01	1.30E-01			34		3.82E-03
SWMU 193a	Diethylphthalate	1/4	2.38E-01	2.67E-01	4.00E-01	2.67E-01		100	630	4.00E-03	6.35E-04
SWMU 193a	Di-n-butylphthalate	1/4	2.17E-01	3.64E-01	7.70E-02	7.70E-02		200	630	3.85E-04	1.22E-04
SWMU 193a	Di-n-octylphthalate	1/4	2.03E-01	3.14E-01	1.20E-01	1.20E-01					
SWMU 193a	Fluoranthene	2/4	1.93E-01	2.73E-01	3.10E-01	2.73E-01			34		9.12E-03
SWMU 193a	Indeno(1,2,3-cd)pyrene	2/4	1.62E-01	2.82E-01	1.60E-01	1.60E-01					
SWMU 193a	Pyrene	2/4	1.65E-01	2.98E-01	2.95E-01	2.95E-01			34		8.68E-03
SWMU 193b	Aluminum	2/2	4.56E+03	9.88E+03	1.08E+04	9.88E+03	0.83	50		2.16E+02	
SWMU 193b	Barium	2/2	3.06E+01	1.03E+02	8.42E+01	8.42E+01	0.42	500		1.68E-01	
SWMU 193b	Beryllium	1/2	5.18E-01	2.21E+00	1.57E+00	1.57E+00	2.34	10		1.57E-01	
SWMU 193b	Chromium	2/2	2.48E+01	1.48E+02	8.87E+01	8.87E+01	5.50	1	0.4	8.87E+01	2.22E+02
SWMU 193b	Cobalt	2/2	2.90E+00	9.11E+00	7.76E+00	7.76E+00	0.55	20		3.88E-01	
SWMU 193b	Copper	2/2	3.63E+00	4.19E+00	7.43E+00	4.19E+00	0.39	100	30	7.43E-02	2.48E-01
SWMU 193b	Iron	2/2	8.98E+03	2.90E+04	2.43E+04	2.43E+04	0.87				
SWMU 193b	Lithium	2/2	2.79E+00	9.55E+00	7.72E+00	7.72E+00					

Table 2.1. (Continued)

SWMU	Chemical	Freq. of detection	Soil concentration (mg/kg)					Benchmarks (mg/kg)		Hazard quotient ^{a,b}	
			Mean	UCL95	Max. detect.	RME ^c	BQ ^d	Plants	Soil inverts	Plants	Soil inverts
SWMU 193b	Manganese	2/2	8.38E+01	2.56E+02	2.22E+02	2.22E+02	0.15	500		4.44E-01	
SWMU 193b	Nickel	1/2	6.40E+00	3.10E+01	2.06E+01	2.06E+01	0.98	30	200	6.87E-01	1.03E-01
SWMU 193b	Strontium	2/2	2.70E+01	1.53E+02	9.39E+01	9.39E+01					
SWMU 193b	Vanadium	2/2	2.06E+01	9.56E+01	6.50E+01	6.50E+01	1.71	2		3.25E+01	
SWMU 193b	Zinc	2/2	2.20E+01	5.92E+01	5.57E+01	5.57E+01	0.86	50	100	1.11E+00	5.57E-01
SWMU 193b	Toluene	1/2	5.00E-03	5.00E-03	1.00E-02	5.00E-03		200	20	5.00E-05	5.00E-04
SWMU 193c	Aluminum	5/5	9.49E+02	1.62E+03	3.36E+03	1.62E+03	0.26	50		6.72E+01	
SWMU 193c	Boron	1/5	5.00E+01	5.00E+01	1.00E+02	5.00E+01		0.5		2.00E+02	
SWMU 193c	Chromium	3/5	3.15E+00	5.47E+00	1.20E+01	5.47E+00	0.75	1	0.4	1.20E+01	3.00E+01
SWMU 193c	Cobalt	2/5	6.36E-01	8.72E-01	2.14E+00	8.72E-01	0.15	20		1.07E-01	
SWMU 193c	Copper	2/5	3.76E+00	9.28E+00	2.82E+01	9.28E+00	1.48	100	30	2.82E-01	9.40E-01
SWMU 193c	Lead	1/5	1.48E+01	2.49E+01	6.77E+01	2.49E+01	1.88	50	500	1.35E+00	1.35E-01
SWMU 193c	Lithium	3/5	3.21E+00	5.49E+00	1.25E+01	5.49E+00					
SWMU 193c	Manganese	5/5	3.95E+01	7.23E+01	1.98E+02	7.23E+01	0.13	500		3.96E-01	
SWMU 193c	Nickel	1/5	2.64E+00	2.95E+00	6.43E+00	2.95E+00	0.31	30	200	2.14E-01	3.22E-02
SWMU 193c	Strontium	5/5	1.46E+02	1.91E+02	3.91E+02	1.91E+02					
SWMU 193c	Vanadium	5/5	2.00E+00	2.80E+00	6.70E+00	2.80E+00	0.18	2		3.35E+00	
SWMU 193c	Zinc	5/5	3.29E+01	4.16E+01	9.25E+01	4.16E+01	1.42	50	100	1.85E+00	9.25E-01
SWMU 99a	Aluminum	13/13	3.10E+03	4.50E+03	1.29E+04	4.50E+03	0.99	50		2.58E+02	
SWMU 99a	Arsenic	6/13	5.83E+00	6.95E+00	8.55E+00	6.95E+00	0.71	10	60	8.55E-01	1.43E-01
SWMU 99a	Barium	13/13	1.06E+02	2.08E+02	2.47E+03	2.08E+02	12.35	500		4.94E+00	
SWMU 99a	Beryllium	5/13	5.38E-01	6.67E-01	8.90E-01	6.67E-01	1.33	10		8.90E-02	
SWMU 99a	Chromium	13/13	7.35E+00	9.40E+00	4.57E+01	9.40E+00	2.86	1	0.4	4.57E+01	1.14E+02
SWMU 99a	Cobalt	11/13	3.70E+00	5.33E+00	9.67E+00	5.33E+00	0.69	20		4.84E-01	
SWMU 99a	Copper	12/13	3.37E+00	4.04E+00	1.22E+01	4.04E+00	0.64	100	30	1.22E-01	4.07E-01
SWMU 99a	Iron	13/13	5.47E+03	8.39E+03	2.33E+04	8.39E+03	0.83				
SWMU 99a	Lithium	13/13	3.79E+00	4.75E+00	1.29E+01	4.75E+00					
SWMU 99a	Manganese	13/13	9.56E+01	1.21E+02	3.87E+02	1.21E+02	0.26	500		7.74E-01	
SWMU 99a	Nickel	8/13	8.52E+00	1.21E+01	2.16E+01	1.21E+01	1.03	30	200	7.20E-01	1.08E-01
SWMU 99a	Strontium	13/13	1.35E+02	2.79E+02	5.14E+02	2.79E+02					
SWMU 99a	Vanadium	13/13	7.70E+00	1.12E+01	3.55E+01	1.12E+01	0.93	2		1.78E+01	
SWMU 99a	Zinc	12/13	9.42E+01	1.13E+02	1.63E+02	1.13E+02	2.51	50	100	3.26E+00	1.63E+00
SWMU 99a	Acenaphthene	2/13	3.22E-01	3.42E-01	3.30E-01	3.30E-01		20	34	1.65E-02	9.71E-03
SWMU 99a	Acenaphthylene	1/13	2.54E-01	2.62E-01	6.10E-01	2.62E-01			34		1.79E-02
SWMU 99a	Anthracene	2/13	4.03E-01	5.93E-01	7.50E-01	5.93E-01			34		2.21E-02
SWMU 99a	Benz(a)anthracene	3/13	3.38E-01	7.96E-01	1.70E+00	7.96E-01			34		5.00E-02
SWMU 99a	Benzo(a)pyrene	2/13	3.58E-01	4.89E-01	2.10E+00	4.89E-01			34		6.18E-02

Table 2.1. (Continued)

SWMU	Chemical	Freq. of detection	Mean	Soil concentration (mg/kg)			BQ ^d	Benchmarks (mg/kg)		Hazard quotient ^{a,b}	
				UCL95	Max. detect.	RME ^c		Plants	Soil inverts	Plants	Soil inverts
SWMU 99a	Benzo(b)fluoranthene	6/13	5.31E-01	1.15E+00	5.70E+00	1.15E+00					
SWMU 99a	Benzo(ghi)perylene	2/13	3.14E-01	7.46E-01	1.18E+00	7.46E-01					
SWMU 99a	Benzo(k)fluoranthene	3/13	4.53E-01	5.72E-01	7.90E-01	5.72E-01					
SWMU 99a	Chrysene	2/13	1.90E-01	1.31E+00	2.10E+00	1.31E+00			34		6.18E-02
SWMU 99a	Dibenz(a,h)anthracene	1/13	2.49E-01	2.51E-01	4.80E-01	2.51E-01			34		1.41E-02
SWMU 99a	Dibenzofuran	1/13	2.36E-01	2.61E-01	1.23E-01	1.23E-01					
SWMU 99a	Fluoranthene	4/13	3.38E-01	8.51E-01	2.66E+00	8.51E-01			34		7.82E-02
SWMU 99a	Fluorene	1/13	2.39E-01	2.58E-01	2.19E-01	2.19E-01			30		7.30E-03
SWMU 99a	Indeno(1,2,3-cd)pyrene	2/13	3.10E-01	8.01E-01	1.05E+00	8.01E-01					
SWMU 99a	PCB-1016	1/16	1.72E-01	2.38E-01	1.87E+00	2.38E-01					
SWMU 99a	PCB-1254	1/16	1.34E-01	1.59E-01	9.60E-02	9.60E-02			40		2.40E-03
SWMU 99a	PCB-1260	5/16	1.01E-01	1.87E-01	6.31E-01	1.87E-01			40		1.58E-02
SWMU 99a	Phenanthrene	2/13	2.45E-01	9.92E-01	1.63E+00	9.92E-01			34		4.79E-02
SWMU 99a	Pyrene	3/13	2.74E-01	9.76E-01	2.70E+00	9.76E-01			34		7.94E-02

^a Hazard quotients = the maximum detected concentration divided by the benchmark concentration. A value greater than 1.0 indicates the maximum detect exceeded the benchmark value.

^b Values shown in bold indicate results for chemicals for which the surface soil concentration exceeded background (or no background was available) and resulted in a hazard quotient >1.

^c RME = the smaller of the UCL95 and the maximum detected concentration.

^d BQ = the maximum detected concentration divided by the background concentration for surface soil. A value less than 1.0 indicates the analyte was within background levels. Plant and soil invertebrate benchmarks were obtained from Efrogmson et al. (1997a,b).

Table 2.2. Life history parameters for the short-tailed shrew (*Blarina brevicauda*)

Parameter	Value	Comments	Reference
Body weight	0.015 ± 0.00078 kg	New Hampshire (field)	Shlessinger and Potter 1974
Food consumption rate	0.01 kg/d	larch sawfly diet (lab)	Buckner 1964
	0.00795 ± 0.00017 kg/d	mealworm diet (lab)	Barrett and Stueck 1976
	mean = 0.009 kg/d		
Water consumption rate	0.223 ml/g bw/d		Chew 1951
	0.033 L/d	assuming a 0.015 kg bw	
Soil consumption rate	13% of diet		Talmage and Walton 1993
	0.00117 kg/d	assuming diet of 0.009 kg/d	
Diet composition	earthworms 31.4% slugs/snails 27.1% soil/litter invert 13.2% fungi 8.4% misc. animals 8.1% coleoptera 5.9% vegetation 5.4%	percent volume in diet in summer in New York	Whitaker and Ferraro 1963
Home range	0.39 ± 0.036 ha	Manitoba bog	Buckner 1966
Habitat requirements	broad and variable but requires > 50% herbaceous cover		Miller and Getz 1977
	forest, wetlands, and grasslands; most abundant in hardwood forests with deep litter and humus.		van Zyll de Jong 1983
Population density	2.3/ha—winter 5.2/ha—spring 9.3/ha—summer 8.1/ha—fall	Illinois—alfalfa, tallgrass and bluegrass; means derived from graph	Getz 1989
	2.5–45/ha	depending on habitat	
Behavior	nocturnal, semifossorial, spends little time above surface;		George et al. 1986
	active year-round—does not hibernate		EPA 1993
Other	appear to be unpalatable to most predators due to lateral gland		van Zyll de Jong 1983

Table 2.3. Life history parameters for the white-footed mouse (*Peromyscus leucopus*)

Parameter	Value	Comments	Reference
Body weight	0.022 kg		Green and Millar 1987
Food consumption rate	0.0034 kg/d	lab study	Green and Millar 1987
Water consumption rate	0.0066 L/d	nonreproductive E (lab)	Oswald et al. 1993
Soil consumption rate	< 2%		Beyer et al. 1994
	0.000068 kg/d	assuming diet of 0.0034 kg/d and a 2% soil consumption rate	
Diet composition	omnivorous and opportunistic		
	arthropods—57% seeds, fruit, vegetation—34%	Virginia	Wolff et al. 1985
	arthropods—30% seeds, fruit, vegetation—67%	Indiana	Whitaker 1966
	arthropods—30% seeds, fruit, vegetation—67%	Illinois	Batzli 1977
Home range	0.059 ha	Mean $\bar{r} + E$; Virginia, mixed deciduous forest	Wolff 1985
Habitat requirements	wooded, brushy areas; sometimes open areas		Burt and Grossenheider 1976
Population density	6–57 / ha	Virginia, mixed deciduous forest	Wolff 1985
Behavior	while semi-arboreal, spends more of time on ground		Lackey et al. 1985
	enters torpor to reduce metabolic demands in winter and during food stress		EPA 1993

Table 2.4. Life history parameters for meadow vole (*Microtus pennsylvanica*)

Parameter	Value	Comments	Reference
Body weight	0.044 kg		Reich 1981
Food consumption rate	0.024–0.036 kg/d		Baker 1983
Water consumption rate	0.006 L/d	estimated using allometric equation, assuming 0.044 kg bw	Calder and Braun, 1983
Soil consumption rate	2.4% of diet		Beyer et al. 1994
Diet composition	herbivorous predominantly monocot and dicot shoots; lesser amounts of seeds and roots (more in winter); minimal fungi and insects	Illinois bluegrass and prairie habitat	Lindroth and Batzli 1984
Home Range	0.083 ± 0.037 ha 0.037 ± 0.020 ha	Massachusetts—grassy meadow	Ostfeld et al. 1988
Habitat requirements	grassy fields, marshes and bog		Getz 1961
Population density	28–85 /ha	Massachusetts—grassy meadow	Ostfeld et al. 1988
	8–20 /ha	Michigan—old field	Getz 1961
	2–28 /ha	Illinois bluegrass	Lindroth and Batzli 1984
	26–128 /ha	Illinois prairie	
Behavior	may be either diurnal or nocturnal; activity depends on amount of vegetative cover		Reich 1981
	active year-round—does not hibernate		EPA 1993

Table 2.5. Life history parameters for long-tailed weasel (*Mustela frenata*)

Parameter	Value	Comments	Reference
Body weight	0.198–0.34 kg 0.085–0.198 kg	North America	Burt and Grossenheider 1976
	0.20 ± 0.054 kg (Γ) 0.094 ± 0.01 kg (E)	Indiana	Mumford and Whitaker 1982
	0.15 kg	mean Γ + E for Indiana	
Food consumption rate	0.02 kg/d	assuming BW = 0.15 kg/d	Sample et al. 1997
Water consumption rate	0.018 L/d	estimated using allometric eqn. Assuming 0.15 kg BW	Calder and Braun 1983
Soil consumption rate	2.8% of dietary Intake	no data for weasels assumed similar to red fox	Beyer et al. 1994
	0.00056 kg/d	assuming diet of 0.02 kg/d red fox	
Diet composition	mammals—96.5% Birds—1.0% Insects—0.6% Misc.—1.8% assume 100% small mammals	Iowa	Polderboer et al. 1941
Home range	5–16 ha	Iowa	Polderboer et al. 1941
Habitat requirements	habitat use varies; open land to forest with greatest abundance in habitats with large small-mammal populations		Sample et al. 1997
Population density	0.77 – 7 indiv./ 100 ha	variable	Sample et al. 1997
Behavior	active year-round— does not hibernate		Sample et al. 1997

Table 2.6. Radionuclide-specific data used in modeling doses to nonhuman receptors

Radionuclide	Energies (MeV/nt) ^a			Absorption factors—gamma ^b			DFgrd 0-15 (Sv m ³ /s/Bq) ^d
	alpha	beta	gamma	Plant, soil: invertebrate	Shrew, ^c mouse ^c , vole ^c	Weasel ^c	
Barium-137m		0.065	0.597	0.011	0.015	0.04	1.71E-17
Cesium-137		0.187					3.94E-21
Neptunium-237	4.769	0.07	0.035	0.027	0.04	0.11	4.16E-19
Protactinium-233		0.196	0.204	0.009	0.01	0.04	5.16E-18
Protactinium-234		0.494	1.919	0.085	0.0123	0.03	5.38E-17
Protactinium-234m		0.822	0.012	0.55	0.63	0.93	4.20E-19
Technetium-99		0.101					6.70E-22
Thorium-234		0.06	0.009	0.63	0.79	0.94	1.29E-19
Uranium-234	4.758	0.013	0.002	0.63	0.79	0.94	2.14E-21
Uranium-238	4.187	0.01	0.001	0.63	0.79	0.94	5.52E-22

^aEckerman and Ryman (1993)

^bSee text for discussion of absorption factors and their derivation from Blaylock et al. (1993) or Cristy and Eckerman (1983).

^cShrew = short-tailed shrew; mouse = white-footed mouse; vole = meadow vole; weasel = long-tailed weasel

^dDFgrd 0-15 = dose coefficient for soil 0-15 cm in depth (Eckerman and Ryman 1993)

Table 2.7. Plant, soil invertebrate, and vertebrate soil-to-tissue or food-to-tissue uptake factors for select radionuclides

Radionuclide	Plants ^a	Soil-to-tissue (g/g)		Food-to-tissue (g/g)
		Earthworms	Small mammals	Small mammals
Cesium-137	0.011	0.015 ^b		2.5 ^{b,c}
Neptunium-237	0.0069	0.0069 ^d		0.00384 ^{c,e}
Technetium-99	76	76 ^d		0.0005
Thorium-234	0.0011	0.0011 ^d	0.000032 ^f	0.005 ^g
Uranium-234	0.023	0.063 ^{b,c}	0.00032 ^f	0.015 ^g
Uranium-238	0.023	0.063 ^{b,c}	0.00032 ^f	0.015 ^g

Notes:

Values are expressed on a wet weight basis.

^a IAEA (1994)

^b Sample et al. (1998a): ES/ER/TM-220

^c Uptake factor for elemental form of the analyte was used.

^d Uptake factor for earthworms was unavailable. Used the larger of the plant and small mammal soil-to-tissue values.

^e Trabalka and Garten (1983)

^f Garten et al. (1987)

^g NCRP (1989)

Table 2.8. Regression equations^a for determining plant tissue concentrations given soil concentration for use in exposure modeling

Chemical	Plant tissue concentration (mg/kg, wet weight)
Arsenic	$0.20 \times e^{(-1.992 + 0.364 \ln C_{\text{soil}})}$
Copper	$0.20 \times e^{(0.669 + 0.394 \ln C_{\text{soil}})}$
Lead	$0.20 \times e^{(-1.328 + 0.561 \ln C_{\text{soil}})}$
Nickel	$0.20 \times e^{(-2.224 + 0.748 \ln C_{\text{soil}})}$
Zinc	$0.20 \times e^{(1.375 + 0.555 \ln C_{\text{soil}})}$

^aEquations from Efroymson et al. (1998) give results on a dry weight basis. These were converted to a wet weight basis assuming 80% water content.

Table 2.9. Regression equations^a for determining invertebrate tissue concentrations given soil concentration for use in exposure modeling

Chemical	Plant tissue concentration (mg/kg, wet weight)
Arsenic	$0.16 \times e^{(-1.421 + 0.706 \ln C_{\text{soil}})}$
Copper	$0.16 \times e^{(1.675 + 0.264 \ln C_{\text{soil}})}$
Manganese	$0.16 \times e^{(-0.809 + 0.682 \ln C_{\text{soil}})}$
Lead	$0.16 \times e^{(-0.218 + 0.807 \ln C_{\text{soil}})}$
Nickel	$0.16 \times e^{(-4.449 + 0.328 \ln C_{\text{soil}})}$
Zinc	$0.16 \times e^{(1.41 + 1.361 \ln C_{\text{soil}})}$

^aEquations from Sample et al. (1998a) give results on a dry weight basis. These were converted to a wet weight basis assuming an earthworm water content of 84% (EPA 1993).

Table 2.10. Regression equations^a for determining small mammal tissue concentrations given soil concentration for use in exposure modeling

Chemical	Trophic group	Small mammal tissue concentration (mg/kg, wet weight)
Arsenic	Omnivore	$0.32 \times e^{(-4.5796 + 0.7354 \ln C_{\text{soil}})}$
Chromium	Omnivore	$0.32 \times e^{(-1.4599 + 0.7338 \ln C_{\text{soil}})}$
Copper	Omnivore	$0.32 \times e^{(1.4592 + 0.2681 \ln C_{\text{soil}})}$
Iron	Omnivore	$0.32 \times e^{(-0.2879 + 0.3969 \ln C_{\text{soil}})}$
Lead	Omnivore	$0.32 \times e^{(0.0761 + 0.4422 \ln C_{\text{soil}})}$
Nickel	All	$0.32 \times e^{(-0.2462 + 0.4658 \ln C_{\text{soil}})}$
Zinc	All	$0.32 \times e^{(4.4713 + 0.0738 \ln C_{\text{soil}})}$

^a Equations from Sample et al. (1998b) give results on a dry weight basis. These are converted to a wet weight basis assuming a small mammal water content of 68% (EPA 1993). The equations are used to estimate tissue concentrations of mammalian prey eaten by a weasel.

Table 2.11. Contaminant uptake factors^a for selected ecological receptor groups

Analyte	Log K _{ow}	Soil—plant	Soil—invertebrate	Food—mammal	Soil—mammal (kg/kg)		
		(kg/kg)	(kg/kg)	(d/kg)	Insectivore	Herbivore	Omnivore
Aluminum		6.40E-04 ^b	6.88E-03 ^c	1.50E-03 ^d	8.42E-03	5.47E-03	1.98E-02 ^c
Arsenic		7.50E-03 ^{b*}	3.78E-02 ^{c*}	2.00E-03 ^d	4.16E-04	1.34E-03	8.00E-04 ^{c*}
Barium		4.26E-02 ^b	1.46E-02 ^c	1.50E-04 ^d	1.81E-02	1.97E-02	1.48E-02 ^c
Beryllium		2.00E-03 ^d	7.20E-03 ^c	1.00E-03 ^d		0.00E+00	0.00E+00 ^c
Boron		1.00E+00 ^d		8.00E-04 ^d			
Calcium		3.86E-01 ^b	6.74E-02 ^c	7.00E-04 ^d	2.89E+00	3.56E+00	2.73E+00 ^c
Chromium		1.30E-02 ^b	4.90E-02 ^c	5.50E-03 ^d	2.61E-02	2.83E-02	2.24E-02 ^{c*}
Cobalt		2.30E-03 ^b	1.95E-02 ^c	2.00E-02 ^d	6.56E-03	6.72E-03	5.06E-03 ^c
Copper		2.48E-02 ^{b*}	8.24E-02 ^{c*}	1.00E-02 ^d	2.47E-01	3.48E-02	4.07E-02 ^{c*}
Iron		1.52E-03 ^b	5.76E-03 ^c	2.00E-02 ^d	3.97E-03	4.03E-03	3.97E-03 ^{c*}
Lead		7.78E-03 ^{b*}	4.26E-02 ^{c*}	3.00E-04 ^d	5.12E-02	1.67E-02	2.11E-02 ^{c*}
Lithium		5.00E-03 ^d	7.36E-03 ^c	1.00E-02 ^d			
Magnesium		1.90E-01 ^b	2.70E-02 ^c	5.00E-03 ^d	2.18E-01	2.46E-01	2.09E-01 ^c
Manganese		2.26E-02 ^b	8.64E-03 ^{c*}	4.00E-04 ^d	6.56E-03	4.99E-03	9.89E-03 ^c
Nickel		3.60E-03 ^{b*}	1.69E-01 ^c	6.00E-03 ^d	1.17E-01	1.64E-02	5.39E-02 ^{c*}
Potassium		1.28E+00 ^b	2.79E-01 ^c	2.00E-02 ^d	1.75E+00	2.03E+00	1.43E+00 ^c
Sodium		7.80E-02 ^b	6.92E-01 ^c	5.50E-02 ^d	1.98E+01	1.96E+01	2.42E+01 ^c
Strontium		2.20E-01 ^f	1.39E-02 ^c	3.00E-04 ^d			
Vanadium		1.00E-03 ^b	6.72E-03 ^c	2.50E-03 ^d	3.94E-03	4.13E-03	3.33E-03 ^c
Zinc		7.32E-02 ^{b*}	6.05E-01 ^{c*}	1.00E-01 ^d	2.66E-01	1.61E-01	1.78E-01 ^{c*}
Acenaphthene	4.33	3.04E-02 ^{g,h}	5.00E-02 ⁱ	5.37E-04 ^{g,j}			
Acenaphthylene	4.07	4.30E-02 ^{g,h}	5.00E-02 ⁱ	2.95E-04 ^{g,j}			
Anthracene	4.4	2.77E-02 ^{g,h}	5.00E-02 ⁱ	6.31E-04 ^{g,j}			
Benz(a)anthracene	5.7	4.91E-03 ^{g,h}	4.32E-02 ^k	1.26E-02 ^{g,j}			
Benzo(a)pyrene	6	1.41E-02 ^g	5.44E-02 ^k	2.51E-02 ^{g,j}			
Benzo(b)fluoranthene	5	1.25E-02 ^{g,h}	3.36E-02 ^k	2.51E-03 ^{g,j}			
Benzo(ghi)perylene	6.6	1.48E-03 ^{g,h}	5.00E-02 ⁱ	1.00E-01 ^{g,j}			
Benzo(k)fluoranthene	5	1.25E-02 ^{g,h}	3.36E-02 ^k	2.51E-03 ^{g,j}			
Bis(2-ethylhexyl)phthalate	5.1	1.09E-02 ^{g,h}	5.00E-02 ⁱ	3.16E-03 ^{g,j}			
Chrysene	5.7	4.91E-03 ^{g,h}	5.00E-02 ⁱ	1.26E-02 ^{g,j}			
Dibenz(a,h)anthracene	6.8	1.14E-03 ^{g,h}	5.00E-02 ⁱ	1.58E-01 ^{g,j}			
Dibenzofuran	4.1	3.31E-02 ^{g,h}	5.00E-02 ⁱ	3.20E-04 ^{g,j}			
Dibutylphthalate	4.9	1.42E-02 ^{g,h}	5.00E-02 ⁱ	2.00E-03 ^{g,j}			
Diethylphthalate	2.5	3.47E-01 ^{g,h}	5.00E-02 ⁱ	7.94E-06 ^{g,j}			

Table 2.11. (Continued)

Analyte	Log K_{ow}	Soil—plant	Soil—invertebrate	Food—mammal	Soil—mammal (kg/kg)		
		(kg/kg)	(kg/kg)	(d/kg)	Insectivore	Herbivore	Omnivore
Diocetylphthalate	9.2	4.66E-05 ^{a,h}	5.00E-02 ⁱ	3.98E+01 ^{a,j}			
Fluoranthene	4.9	1.42E-02 ^{a,h}	5.00E-02 ⁱ	2.00E-03 ^{a,j}			
Fluorene	4.4	2.77E-02 ^{a,h}	5.00E-02 ⁱ	6.31E-04 ^{a,j}			
Indeno(1,2,3-Cd)Pyrene	6.6	1.48E-03 ^{a,h}	5.00E-02 ⁱ	1.00E-01 ^{a,j}			
PCB-1016	5.9	3.76E-03 ^{a,h}	5.00E-02 ⁱ	2.00E-02 ^{a,j}			
PCB-1254	6	4.25E-03 ^a	1.07E+00 ^{c*}	5.25E-02 ^a			
PCB-1260	7.1	7.62E-04 ^{a,h}	1.07E+00 ^{c*}	3.16E-01 ^{a,j}			
Phenanthrene	4.6	2.12E-02 ^{a,h}	5.00E-02 ⁱ	1.00E-03 ^{a,j}			
Pyrene	4.9	1.42E-02 ^{a,h}	5.00E-02 ⁱ	2.00E-03 ^{a,j}			
Toluene	2.7	2.66E-01 ^{a,h}	5.00E-02 ⁱ	1.26E-05 ^{a,j}			

^a All transfer factors expressed as wet tissue concentrations.

^b Efronson et al. (1998). An * indicates use of the regression equation is preferable to the point estimate given here.

^c Sample et al. (1998a). An * indicates use of the regression equation is preferable to the point estimate given here.

^d Baes et al. (1984)

^e Sample et al. (1998b). An * indicates use of the regression equation is preferable to the point estimate given here.

^f IAEA (1994)

^g Travis and Arms (1988)

^h Plant uptake factor calculated using the following equation presented by Travis and Arms (1988) unless otherwise noted:

$$\log(\text{plant Uptake Factor}) = 1.588 - 0.578 \log K_{ow}; \text{ if } \log K_{ow} < 5,$$

BAF assumed to be 0.02 assuming plants are 80% water.

ⁱ Menzie et al. (1992)

^j Mammal BTF calculated using the following equation presented by Travis and Arms (1988):

$$\log \text{BTF} = \log K_{ow} - 7.6$$

where BTF (d/kg wet tissue) is converted to a BAF by multiplying by beef cow ingestion rate (50 kg wet food/d)

^k Beyer, W.N., and C. Stafford. 1993. "Survey and Evaluation of Contaminants in Earthworms and Soils from Dredged Material at Confined Disposal Facilities in the Great Lakes Region." *Environ. Monit. Assess.* 24: 151-165.

Table 2.12. Toxicological benchmarks used for terrestrial wildlife

Analyte	Meadow vole		White-footed mouse		Short-tailed shrew		Long-tailed weasel		Sources
	NOAEL ^a	LOAEL ^a	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	
Aluminum	1.75E+00	1.75E+01	2.09E+00	2.09E+01	2.30E+00	2.30E+01	1.29E+00	1.29E+01	Ondreicka et al. 1966
Arsenic	1.14E-01	1.14E+00	1.36E-01	1.36E+00	1.50E-01	1.50E+00	8.43E-02	8.43E-01	Schroeder and Mitchner 1971
Barium	9.04E+00	3.33E+01	1.08E+01	3.95E+01	1.18E+01	4.35E+01	6.66E+00	2.45E+01	Perry et al. 1983, Borzelleca et al. 1988
Beryllium	1.11E+00		1.32E+00		1.45E+00		8.16E-01		Schroeder and Mitchner 1975
Boron	4.70E+01	1.57E+02	5.59E+01	1.87E+02	6.15E+01	2.06E+02	3.46E+01	1.16E+02	Weir and Fisher 1972
Chromium III	4.60E+03		5.47E+03		6.02E+03		3.38E+03		Ivankovic and Preussmann 1975
Chromium VI	5.51E+00	2.21E+01	6.55E+00	2.62E+01	7.21E+00	2.89E+01	4.05E+00	1.62E+01	MacKenzie et al. 1958, Eisler 1986
Copper	2.56E+01	3.31E+01	3.04E+01	3.93E+01	3.35E+01	4.33E+01	1.88E+01	2.43E+01	Aulerich et al. 1982
Lead	1.34E+01	1.34E+02	1.60E+01	1.60E+02	1.76E+01	1.76E+02	9.89E+00	9.89E+01	Azar et al. 1973
Lithium	1.58E+01	3.16E+01	1.88E+01	3.75E+01	2.07E+01	4.13E+01	1.16E+01	2.32E+01	Marathe and Thomas 1986
Manganese	1.48E+02	4.77E+02	1.76E+02	5.67E+02	1.93E+02	6.24E+02	1.09E+02	3.51E+02	Laskey et al. 1982
Nickel	6.72E+01	1.34E+02	7.99E+01	1.60E+02	8.79E+01	1.76E+02	4.94E+01	9.89E+01	Ambrose et al. 1976
Strontium	4.42E+02		5.25E+02		5.78E+02		3.25E+02		Skoryna 1981
Vanadium	3.27E-01	3.27E+00	3.89E-01	3.89E+00	4.28E-01	4.28E+00	2.41E-01	2.41E+00	Domingo et al. 1986
Zinc	2.69E+02	5.37E+02	3.20E+02	6.39E+02	3.52E+02	7.03E+02	1.98E+02	3.95E+02	Schlicker and Cox 1968
Acenaphthene	1.59E+02	3.18E+02	1.89E+02	3.78E+02	2.08E+02	4.16E+02	1.17E+02	2.34E+02	IRIS 1990
Anthracene	9.09E+02		1.08E+03		1.19E+03		6.69E+02		IRIS 1990
Aroclor-1016	2.99E+00	7.49E+00	3.56E+00	8.91E+00	3.91E+00	9.80E+00	2.20E+00	5.51E+00	Aulerich and Ringer 1980
Aroclor-1254	5.11E-02	5.11E-01	6.07E-02	6.07E-01	6.68E-02	6.68E-01			McCoy et al. 1995
Aroclor-1254							2.25E-01	1.11E+00	Aulerich and Ringer 1977
Benzo(a)pyrene	9.09E-01	9.09E+00	1.08E+00	1.08E+01	1.19E+00	1.19E+01	6.69E-01	6.69E+00	MacKenzie and Angevine 1981
bis(2-Ethylhexyl)-phthalate	1.66E+01	1.66E+02	1.98E+01	1.98E+02	2.18E+01	2.18E+02	1.22E+01	1.22E+02	Lamb et al. 1987
Dibutylphthalate	5.00E+02	1.67E+03	5.94E+02	1.98E+03	6.54E+02	2.18E+03	3.68E+02	1.23E+03	Lamb et al. 1987
Diethylphthalate	4.16E+03		4.95E+03		5.45E+03		3.06E+03		Lamb et al. 1987
Fluoranthene	1.14E+02	2.27E+02	1.35E+02	2.70E+02	1.49E+02	2.97E+02	8.36E+01	1.67E+02	IRIS 1990
Toluene	2.36E+01	2.36E+02	2.81E+01	2.81E+02	3.09E+01	3.09E+02	1.74E+01	1.74E+02	Nawrot and Staples 1979

^a NOAELs and LOAELs derived following the approach outlined in Sample et al. 1996. Units are mg/kg/d.

Sources:

- Ambrose, A. M., Larson, P. S., Borzelleca, J. F., and Hennigar, G. R., Jr. 1976. "Long-term Toxicologic Assessment of Nickel in Rats and Dogs," *J. Food Sci. Tech.* 13: 181-187.
- Aulerich, R. J., and Ringer, R. K. 1977. "Current Status of PCB Toxicity, Including Reproduction in Mink," *Arch. Environ. Contam. Toxicol.* 6: 279.
- Aulerich, R. J., and Ringer, R. K. 1980. *Toxicity of the Polychlorinated Biphenyl Aroclor 1016 to Mink*. Environmental Research Laboratory, Office of Research and Development.
- Aulerich, R. J., Ringer, R. K., and Bleavins, M. R. 1982. "Effects of Supplemental Dietary Copper on Growth, Reproductive Performance and Kit Survival of Standard Dark Mink and the Acute Toxicity of Copper to Mink," *J. Animal Sci.* 55: 337-343.
- Azar, A., Trochimowicz, H. J., and Maxwell, M. E. 1973. "Review of Lead Studies in Animals Carried Out at Haskell Laboratory: Two-year Feeding Study and Response to Hemorrhage Study," pp. 199-210, in *Environmental Health Aspects of Lead: Proceedings, International Symposium*, Barth, D., et al., eds.

- Borzelleca, J. F., Condie, L. W., Jr., and Egle, J. L., Jr. 1988. "Short-term Toxicity (One-and Ten-day Gavage) of Barium Chloride in Male and Female Rats," *J. American College of Toxicology*. 7: 675-685.
- Domingo, J. L., Paternain, J. L., Llobet, J. M., and Corbella, J. 1986. "Effects of Vanadium on Reproduction, Gestation, Parturition and Lactation in Rats upon Oral Administration," *Life Sci.* 39: 819-824.
- Eisler, R. 1986. "Chromium Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review," *U.S. Fish and Wildlife Service Biol. Report* 85(1.6). 60 pp.
- IRIS (Integrated Risk Information System). 1988-1994. Vols. I and II. Chemical Files. U.S. Environmental Protection Agency.
- Ivankovic, S., and Preussmann, R. 1975. "Absence of Toxic and Carcinogenic Effects After Administration of High Doses of Chromic Oxide Pigment in Subacute and Long-term Feeding Experiments in Rats," *Fd. Cosmet. Toxicol.* 13: 347-351.
- Lamb, J. C., IV, Chapin, R. E., Teague, J., Lawton, A. D., and Reel, J. R. 1987. "Reproductive Effects of Four Phthalic Acid Esters in the Mouse," *Toxicol. Appl. Pharmacol.* 88: 255-269.
- Laskey, J. W., Rehnberg, G. L., Hein, J. F., and Carter, S. D. 1982. "Effects of Chronic Manganese (Mn₂O₃) Exposure on Selected Reproductive Parameters in Rats," *J. Toxicol. Environ. Health*. 9: 677-687.
- Mackenzie, K. M., and Angevine, D. M. 1981. "Infertility in Mice Exposed in Utero to Benzo[a]pyrene," *Biol. Reprod.* 24: 183-191.
- Mackenzie, R. D., Byerrum, R. U., Decker, C. F., Hoppert, C. A., and Langham, R. F. 1958. "Chronic Toxicity Studies, II. Hexavalent and Trivalent Chromium Administered in Drinking Water to Rats," *Am. Med. Assoc. Arch. Ind. Health*. 18: 232-234.
- Marathe, M. R., and Thomas, G. P. 1986. "Embryotoxicity and Teratogenicity of Lithium Carbonate in Wistar Rat," *Toxicol. Lett.* 34: 115-120.
- McCoy, G., Finlay, M. F., Rhone, A., James, K., and Cobb, G. P. 1995. "Chronic Polychlorinated Biphenyls Exposure on Three Generations of Oldfield Mice (*Peromyscus Polionotus*): Effects on Reproduction, Growth, and Body Residues," *Arch. Environ. Contam. Toxicol.* 28:431-435.
- Nawrot, P. S., and Staples, R. E. 1979. "Embryofetal Toxicity and Teratogenicity of Benzene and Toluene in the Mouse," *Teratology*. 19: 41A
- Ondreicka, R., Ginter, E., and Kortus, J. 1966. "Chronic Toxicity of Aluminum in Rats and Mice and Its Effects on Phosphorus Metabolism," *Brit. J. Indust. Med.* 23: 305-313.
- Perry, H. M., Perry, E. F., Erlanger, M. N., and Kopp, S. J. 1983. "Cardiovascular Effects of Chronic Barium Ingestion," in *Proc. 17th Ann. Conf. Trace Substances in Environ. Health*, Vol. 17. U. of Missouri Press, Columbia.
- Sample, B. E., Opresko, D. M., and Suter, G. W., II. 1996. *Toxicological Benchmarks for Wildlife: 1996 Revision*, ES/ER/TM-86/R3. Oak Ridge National Laboratory, Oak Ridge, TN.
- Schlicker, S. A., and Cox, D. H. 1968. "Maternal Dietary Zinc, and Development and Zinc, Iron, and Copper Content of the Rat Fetus," *J. Nutr.* 95: 287-294.
- Schroeder, H. A., and Mitchener, M. 1971. "Toxic Effects of Trace Elements on the Reproduction of Mice and Rats," *Arch. Environ. Health*. 23: 102-106.
- Schroeder, H. A., and Mitchener, M. 1975. "Life-term Studies in Rats: Effects of Aluminum, Barium, Beryllium, and Tungsten," *J. Nutr.* 105: 421-427.
- Skoryna, S. C. 1981. "Effects of Oral Supplementation with Stable Strontium," *Can. Med. Assoc. J.* 125: 703-712.
- Weir, R. J., and Fisher, R. S. 1972. "Toxicological Studies on Borax and Boric Acid," *Toxicol. Appl. Pharmacol.* 23: 351-364.

Table 2.13. Summary of chemicals with maximum detected or reasonable maximum exposure concentrations resulting in hazard quotients greater than 1.0 for one or more receptor groups

Site	Receptor group	Boron ^a	Barium ^a	Chromium ^a	Lead ^a	Vanadium ^a	Zinc ^a
SWMU 193A	Plants ^b			26.5			
	Soil invertebrates ^b			66.2			
SWMU 193B	Plants ^b			88.7		32.5	
	Soil invertebrates ^b			222.0			
	Terrestrial wildlife ^c					1.24	
SWMU 193C	Plants ^b	200.0		12.0	1.35		1.85
	Soil invertebrates ^b			30.0			
SWMU 99A	Plants ^b		4.94	45.7			3.26
	Soil invertebrates ^b			114.0			1.63

^a Values in cells are hazard quotients.

^b Plant and soil invertebrate values are based on maximum detected concentrations.

^c Terrestrial wildlife values are based on reasonable maximum exposure concentrations. Estimated daily doses for wildlife were below LOAELs at SWMUs 193a, 193c, and 99a.

Table 2.14. Results of comparison of daily doses for wildlife receptors to toxicological benchmarks

SWMU	Chemical	Freq. of Detect	Soil conc. (mg/kg)			NOAEL hazard quotients ^a				LOAEL hazard quotients ^b			
			Mean	RME ^c	BQ ^d	Vole	Shrew	Mouse	Weasel	Vole	Shrew	Mouse	Weasel
SWMU 193a	Aluminum	4/4	3.62E+03	5.97E+03	0.84	6.87E+01	2.14E+02	1.05E+01	1.84E+01	6.87E+00	2.14E+01	1.05E+00	1.84E+00
SWMU 193a	Barium	4/4	2.67E+01	4.33E+01	0.42	2.61E-01	3.17E-01	3.02E-02	2.46E-02	7.10E-02	8.63E-02	8.22E-03	6.69E-03
SWMU 193a	Beryllium	1/4	2.68E-01	3.09E-01	0.96	5.92E-03	1.75E-02	8.90E-04	1.47E-03				
SWMU 193a	Calcium	2/2	9.02E+04	2.73E+05	1.37								
SWMU 193a	Chromium	4/4	6.45E+00	1.22E+01	1.66	6.73E-02	1.82E-01	1.47E-02	2.66E-02	1.68E-02	4.55E-02	3.67E-03	6.65E-03
SWMU 193a	Cobalt	4/4	1.68E+00	2.79E+00	0.41								
SWMU 193a	Copper	4/4	2.66E+00	3.90E+00	0.38	2.43E-02	3.10E-02	5.20E-03	1.48E-02	1.88E-02	2.40E-02	4.02E-03	1.15E-02
SWMU 193a	Iron	4/4	4.70E+03	7.74E+03	0.55								
SWMU 193a	Lithium	4/4	3.42E+00	5.49E+00		8.25E-03	2.19E-02	1.18E-03	2.59E-03	4.13E-03	1.10E-02	5.92E-04	1.29E-03
SWMU 193a	Magnesium	4/4	3.45E+03	7.49E+03	2.21								
SWMU 193a	Manganese	4/4	1.07E+02	1.80E+02	0.27	4.63E-02	8.00E-02	6.02E-03	6.33E-03	1.44E-02	2.48E-02	1.87E-03	1.96E-03
SWMU 193a	Nickel	2/4	3.10E+00	3.91E+00	0.36	1.87E-03	7.99E-03	8.50E-04	1.57E-03	9.36E-04	3.99E-03	4.25E-04	7.84E-04
SWMU 193a	Potassium	4/4	3.39E+02	6.45E+02	1.11								
SWMU 193a	Sodium	1/4	1.02E+02	1.05E+02	0.67								
SWMU 193a	Strontium	4/4	6.08E+01	1.22E+02		5.50E-02	1.82E-02	4.90E-03	1.50E-03				
SWMU 193a	Vanadium	4/4	8.80E+00	1.58E+01	0.83	9.90E-01	3.03E+00	1.50E-01	2.72E-01	9.90E-02	3.03E-01	1.50E-02	2.72E-02
SWMU 193a	Zinc	4/4	2.32E+01	2.91E+01	0.85	2.12E-02	7.70E-02	1.18E-02	2.48E-02	1.06E-02	3.85E-02	5.90E-03	1.24E-02
SWMU 193a	Anthracene	1/4	2.02E-01	1.16E-01		5.40E-06	1.05E-05	9.76E-07	6.91E-07				
SWMU 193a	Benz(a)anthracene	2/4	1.68E-01	1.80E-01									
SWMU 193a	Benzo(a)pyrene	2/4	1.86E-01	2.50E-01		8.58E-03	2.33E-02	1.94E-03	4.79E-03	8.58E-04	2.33E-03	1.94E-04	4.79E-04
SWMU 193a	Benzo(b)fluoranthene	2/4	1.36E-01	5.10E-02									
SWMU 193a	Benzo(ghi)perylene	2/4	1.67E-01	1.70E-01									
SWMU 193a	bis(2-Ethylhexyl)phthalate	2/4	1.56E-01	1.70E-01		2.92E-04	8.44E-04	6.70E-05	6.66E-05	2.92E-05	8.44E-05	6.70E-06	6.66E-06
SWMU 193a	Chrysene	2/4	1.68E-01	1.70E-01									
SWMU 193a	Dibenz(a,h)anthracene	1/4	2.04E-01	1.30E-01									
SWMU 193a	Diethylphthalate	1/4	2.38E-01	2.67E-01		1.95E-05	5.29E-06	1.82E-06	3.26E-07				
SWMU 193a	Di-n-butylphthalate	1/4	2.17E-01	7.70E-02		4.82E-06	1.27E-05	1.04E-06	9.27E-07	1.45E-06	3.81E-06	3.13E-07	2.78E-07
SWMU 193a	Di-n-octylphthalate	1/4	2.03E-01	1.20E-01									
SWMU 193a	Fluoranthene	2/4	1.93E-01	2.73E-01		7.52E-05	1.98E-04	1.63E-05	1.45E-05	3.76E-05	9.92E-05	8.14E-06	7.23E-06
SWMU 193a	Indeno(1,2,3-cd)pyrene	2/4	1.62E-01	1.60E-01									
SWMU 193a	Pyrene	2/4	1.65E-01	2.95E-01									
SWMU 193b	Aluminum	2/2	4.56E+03	9.88E+03	0.83	1.14E+02	3.53E+02	1.74E+01	3.04E+01	1.14E+01	3.53E+01	1.74E+00	3.04E+00
SWMU 193b	Barium	2/2	3.06E+01	8.42E+01	0.42	5.07E-01	6.17E-01	5.88E-02	4.78E-02	1.38E-01	1.68E-01	1.60E-02	1.30E-02
SWMU 193b	Beryllium	1/2	5.18E-01	1.57E+00	2.34	3.01E-02	8.91E-02	4.53E-03	7.50E-03				
SWMU 193b	Chromium	2/2	2.48E+01	8.87E+01	5.50	4.87E-01	1.32E+00	1.07E-01	1.47E-01	1.22E-01	3.30E-01	2.66E-02	3.68E-02
SWMU 193b	Cobalt	2/2	2.90E+00	7.76E+00	0.55								
SWMU 193b	Copper	2/2	3.63E+00	4.19E+00	0.39	2.52E-02	3.21E-02	5.34E-03	1.52E-02	1.95E-02	2.49E-02	4.13E-03	1.17E-02

Table 2.14. (Continued)

SWMU	Chemical	Freq. of Detect	Soil conc. (mg/kg)		BQ ^d	NOAEL hazard quotients ^a				LOAEL hazard quotients ^b			
			Mean	RME ^c		Vole	Shrew	Mouse	Weasel	Vole	Shrew	Mouse	Weasel
SWMU 193b	Iron	2/2	8.98E+03	2.43E+04	0.87								
SWMU 193b	Lithium	2/2	2.79E+00	7.72E+00		1.16E-02	3.08E-02	1.66E-03	3.64E-03	5.80E-03	1.54E-02	8.32E-04	1.82E-03
SWMU 193b	Magnesium	2/2	1.27E+03	4.31E+03	0.56								
SWMU 193b	Manganese	2/2	8.38E+01	2.22E+02	0.15	5.73E-02	9.83E-02	7.36E-03	7.83E-03	1.77E-02	3.05E-02	2.28E-03	2.42E-03
SWMU 193b	Nickel	1/2	6.40E+00	2.06E+01	0.98	8.55E-03	4.21E-02	4.37E-03	4.32E-03	4.28E-03	2.10E-02	2.19E-03	2.16E-03
SWMU 193b	Potassium	2/2	2.31E+02	6.86E+02	0.53								
SWMU 193b	Sodium	2/2	1.23E+02	1.31E+02	0.78								
SWMU 193b	Strontium	2/2	2.70E+01	9.39E+01		4.24E-02	1.40E-02	3.78E-03	1.16E-03				
SWMU 193b	Vanadium	2/2	2.06E+01	6.50E+01	1.71	4.06E+00	1.24E+01	6.16E-01	1.11E+00	4.06E-01	1.24E+00	6.16E-02	1.11E-01
SWMU 193b	Zinc	2/2	2.20E+01	5.57E+01	0.86	3.15E-02	9.96E-02	1.51E-02	2.64E-02	1.57E-02	4.98E-02	7.54E-03	1.32E-02
SWMU 193b	Toluene	1/2	5.00E-03	5.00E-03		5.03E-05	1.75E-05	4.90E-06	1.08E-06	5.03E-06	1.75E-06	4.90E-07	1.08E-07
SWMU 193c	Aluminum	5/5	9.49E+02	1.62E+03	0.26	1.86E+01	5.80E+01	2.85E+00	4.98E+00	1.86E+00	5.80E+00	2.85E-01	4.98E-01
SWMU 193c	Boron	1/5	5.00E+01	5.00E+01		8.91E-01				2.66E-01			
SWMU 193c	Calcium	5/5	1.68E+05	1.94E+05	2.00								
SWMU 193c	Chromium	3/5	3.15E+00	5.47E+00	0.75	3.01E-02	8.15E-02	6.58E-03	1.35E-02	7.50E-03	2.03E-02	1.64E-03	3.38E-03
SWMU 193c	Cobalt	2/5	6.36E-01	8.72E-01	0.15								
SWMU 193c	Copper	2/5	3.76E+00	9.28E+00	1.48	3.72E-02	4.92E-02	7.24E-03	1.96E-02	2.88E-02	3.81E-02	5.60E-03	1.51E-02
SWMU 193c	Lead	1/5	1.48E+01	2.49E+01	1.88	5.61E-02	1.69E-01	1.47E-02	2.87E-02	5.61E-03	1.69E-02	1.47E-03	2.87E-03
SWMU 193c	Lithium	3/5	3.21E+00	5.49E+00		8.25E-03	2.19E-02	1.18E-03	2.59E-03	4.13E-03	1.10E-02	5.92E-04	1.29E-03
SWMU 193c	Magnesium	5/5	4.38E+03	6.91E+03	1.88								
SWMU 193c	Manganese	5/5	3.95E+01	7.23E+01	0.13	1.87E-02	3.33E-02	2.57E-03	2.56E-03	5.78E-03	1.03E-02	7.97E-04	7.92E-04
SWMU 193c	Nickel	1/5	2.64E+00	2.95E+00	0.31	1.45E-03	6.02E-03	6.44E-04	1.34E-03	7.27E-04	3.01E-03	3.22E-04	6.69E-04
SWMU 193c	Potassium	5/5	3.50E+02	6.21E+02	1.21								
SWMU 193c	Sodium	4/5	1.28E+02	1.49E+02	0.97								
SWMU 193c	Strontium	5/5	1.46E+02	1.91E+02		8.63E-02	2.85E-02	7.69E-03	2.35E-03				
SWMU 193c	Vanadium	5/5	2.00E+00	2.80E+00	0.18	1.75E-01	5.36E-01	2.65E-02	4.80E-02	1.75E-02	5.36E-02	2.65E-03	4.80E-03
SWMU 193c	Zinc	5/5	3.29E+01	4.16E+01	1.42	2.63E-02	8.86E-02	1.35E-02	2.56E-02	1.32E-02	4.43E-02	6.75E-03	1.28E-02
SWMU 99a	Aluminum	13/13	3.10E+03	4.50E+03	0.99	5.17E+01	1.61E+02	7.92E+00	1.38E+01	5.17E+00	1.61E+01	7.92E-01	1.38E+00
SWMU 99a	Arsenic	6/13	5.83E+00	6.95E+00	0.71	1.77E+00	4.23E+00	2.90E-01	3.30E-01	1.77E-01	4.23E-01	2.90E-02	3.30E-02
SWMU 99a	Barium	13/13	1.06E+02	2.08E+02	12.35	1.25E+00	1.52E+00	1.45E-01	1.18E-01	3.41E-01	4.15E-01	3.95E-02	3.21E-02
SWMU 99a	Beryllium	5/13	5.38E-01	6.67E-01	1.33	1.28E-02	3.78E-02	1.92E-03	3.19E-03				
SWMU 99a	Calcium	11/11	1.22E+05	2.87E+05	1.44								
SWMU 99a	Chromium	13/13	7.35E+00	9.40E+00	2.86	5.17E-02	1.40E-01	1.13E-02	2.13E-02	1.29E-02	3.50E-02	2.82E-03	5.32E-03
SWMU 99a	Cobalt	11/13	3.70E+00	5.33E+00	0.69								
SWMU 99a	Copper	12/13	3.37E+00	4.04E+00	0.64	2.48E-02	3.16E-02	5.27E-03	1.50E-02	1.92E-02	2.44E-02	4.08E-03	1.16E-02
SWMU 99a	Iron	13/13	5.47E+03	8.39E+03	0.83								
SWMU 99a	Lithium	13/13	3.79E+00	4.75E+00		7.14E-03	1.89E-02	1.02E-03	2.24E-03	3.57E-03	9.47E-03	5.12E-04	1.12E-03
SWMU 99a	Magnesium	13/13	5.43E+03	9.90E+03	3.55								

Table 2.14. (Continued)

SWMU	Chemical	Freq. of Detect	Soil conc. (mg/kg)			NOAEL hazard quotients ^a				LOAEL hazard quotients ^b			
			Mean	RME ^c	BQ ^d	Vole	Shrew	Mouse	Weasel	Vole	Shrew	Mouse	Weasel
SWMU 99a	Manganese	13/13	9.56E+01	1.21E+02	0.26	3.12E-02	5.46E-02	4.15E-03	4.27E-03	9.67E-03	1.69E-02	1.29E-03	1.32E-03
SWMU 99a	Nickel	8/13	8.52E+00	1.21E+01	1.03	5.25E-03	2.48E-02	2.60E-03	3.08E-03	2.63E-03	1.24E-02	1.30E-03	1.54E-03
SWMU 99a	Potassium	13/13	2.74E+02	3.23E+02	0.86								
SWMU 99a	Sodium	6/13	2.52E+02	3.08E+02	1.14								
SWMU 99a	Strontium	13/13	1.35E+02	2.79E+02		1.26E-01	4.17E-02	1.12E-02	3.44E-03				
SWMU 99a	Vanadium	13/13	7.70E+00	1.12E+01	0.93	6.99E-01	2.14E+00	1.06E-01	1.92E-01	6.99E-02	2.14E-01	1.06E-02	1.92E-02
SWMU 99a	Zinc	12/13	9.42E+01	1.13E+02	2.51	4.88E-02	1.35E-01	1.99E-02	2.89E-02	2.44E-02	6.75E-02	9.95E-03	1.44E-02
SWMU 99a	Acenaphthene	2/13	3.22E-01	3.30E-01		9.24E-05	1.71E-04	1.62E-05	1.11E-05	4.62E-05	8.56E-05	8.12E-06	5.57E-06
SWMU 99a	Acenaphthylene	1/13	2.54E-01	2.62E-01									
SWMU 99a	Anthracene	2/13	4.03E-01	5.93E-01		2.76E-05	5.38E-05	4.99E-06	3.53E-06				
SWMU 99a	Benz(a)anthracene	3/13	3.38E-01	7.96E-01									
SWMU 99a	Benzo(a)pyrene	2/13	3.58E-01	4.89E-01		1.68E-02	4.55E-02	3.80E-03	9.37E-03	1.68E-03	4.55E-03	3.80E-04	9.37E-04
SWMU 99a	Benzo(b)fluoranthene	6/13	5.31E-01	1.15E+00									
SWMU 99a	Benzo(ghi)perylene	2/13	3.14E-01	7.46E-01									
SWMU 99a	Benzo(k)fluoranthene	3/13	4.53E-01	5.72E-01									
SWMU 99a	Chrysene	2/13	1.90E-01	1.31E+00									
SWMU 99a	Dibenz(a,h)anthracene	1/13	2.49E-01	2.51E-01									
SWMU 99a	Dibenzofuran	1/13	2.36E-01	1.23E-01									
SWMU 99a	Fluoranthene	4/13	3.38E-01	8.51E-01		2.35E-04	6.19E-04	5.08E-05	4.51E-05	1.17E-04	3.09E-04	2.54E-05	2.25E-05
SWMU 99a	Fluorene	1/13	2.39E-01	2.19E-01									
SWMU 99a	Indeno(1,2,3-cd)pyrene	2/13	3.10E-01	8.01E-01									
SWMU 99a	PCB-1016	1/16	1.72E-01	2.38E-01		1.81E-03	1.90E-02	2.24E-03	3.52E-03	7.21E-04	7.57E-03	8.95E-04	1.41E-03
SWMU 99a	PCB-1254	1/16	1.34E-01	9.60E-02		4.34E-02	3.54E-01	3.98E-02	2.59E-02	4.34E-03	3.54E-02	3.98E-03	5.25E-03
SWMU 99a	PCB-1260	5/16	1.01E-01	1.87E-01		7.42E-02	8.20E-01	9.49E-02	3.52E-01	7.42E-03	8.20E-02	9.49E-03	7.15E-02
SWMU 99a	Phenanthrene	2/13	2.45E-01	9.92E-01									
SWMU 99a	Pyrene	3/13	2.74E-01	9.76E-01									

^a NOAEL hazard quotient = wildlife daily dose (mg/kg/d) divided by NOAEL.

^b LOAEL hazard quotient = wildlife daily dose (mg/kg/d) divided by the LOAEL benchmark. Blanks indicate chemicals lacking benchmark values or those for which uptake factors were unavailable for estimation of wildlife daily doses. Bolded values indicate the maximum detected concentration exceeded background levels (or no background was available), and the estimated daily dose exceeded a benchmark value.

^c RME = Reasonable maximum exposure concentration. It is the lower of the maximum detected concentration and the UCL95 concentration.

^d BQ = Background quotient. It is the maximum detected concentration divided by the background concentration. A value less than 1.0 indicates the maximum detected concentration was within background levels. A blank indicates no background value was available for that analyte.

Table 2.15. Estimated dose rates (mrad/d) and hazard indices for terrestrial biota exposed to radionuclides in soil^a

SWMU	Radionuclide	Freq. of detection	RMA ^b	Max. detect	Plants ^c	Soil inverts ^c	Vole ^{d,e}	Shrew ^{d,e}	Mouse ^{d,e}	Weasel ^{d,e}
SWMU 99a	Cesium-137	3/16	1.06E+00	1.90E+00	1.13E-02	8.37E-02	1.86E-02	2.24E-02	1.85E-02	2.14E-02
SWMU 99a	Neptunium-237	1/1	1.28E+01	1.28E+01	4.58E-01	7.80E-01	8.82E-02	1.14E-01	8.73E-02	8.76E-02
SWMU 99a	Technetium-99	3/16	4.61E+02	2.65E+03	1.04E+03	1.06E+03	9.08E-02	9.10E-02	9.08E-02	2.94E-04
SWMU 99a	Thorium-234	1/16	2.16E+01	5.30E+01	1.51E-02	2.58E+00	1.23E-02	1.23E-02	1.23E-02	1.24E-02
SWMU 99a	Uranium-234	1/1	1.64E+01	1.64E+01	1.84E+00	5.05E+00	2.73E-02	2.73E-02	2.73E-02	3.56E-02
SWMU 99a	Uranium-238	1/1	5.17E+01	5.17E+01	5.17E+00	1.67E+01	1.06E-01	1.06E-01	1.06E-01	1.29E-01
	Total (mrad/d)				1.05E+03	1.08E+03	2.50E-01	3.72E-01	3.42E-01	2.86E-01
	Hazard index ^f				1.05E+00	1.08E+00	2.50E-03	3.72E-03	3.42E-03	2.86E-03

^a No radionuclides were detected from SWMU 193A or 193B.

^b RMA = Reasonable Maximum Activity. This is the lower of the UCL95 and maximum detected activities.

^c Estimated dose rates for plants and soil invertebrates are based on maximum detected activities.

^d Estimated dose rates for wildlife receptors are based on RMA's.

^e Soil inverts = soil invertebrates; vole = meadow vole; shrew = short-tailed shrew; mouse = white-footed mouse; weasel = long-tailed weasel.

^f HIs for plants and soil invertebrates represent the total dose rate divided by the recommended dose rate limit of 1 rad/d. HIs for wildlife receptors represent the total dose rate divided by the recommended dose rate limit of 100 mrad/d.

APPENDIX B

TRANSPORT MODELING RESULTS

B. MEPAS MODELING OF THE GROUNDWATER CONTAMINANT MIGRATION PATHWAYS AT WASTE AREA GROUP 28

B.1 INTRODUCTION

The MEPAS model was used for evaluating potential future migration of contaminants away from WAG 28 via groundwater pathways in the RGA. Contaminant transport was modeled from WAG 28 sources to exposure points located at the PGDP security fence and the DOE property boundary. This appendix provides general descriptions of the MEPAS model and the contaminant screening process; an explanation of the source-term contaminant concentrations and inventories used in the modeling; and the results of the MEPAS simulations.

Contaminant source concentrations and source inventories were derived from soil sampling results. The sampling data used included the 1999 WAG 28 RI data as well as historical sampling conducted at the sites in support of the CERCLA SI (CH2M HILL 1992). The following investigations provided additional data used at specific sites:

- the 1995 Northeast Plume Investigation, consisting of the site evaluation at SWMUs 193 and 194 and the Groundwater Phase IV Investigation and
- the 1995 sampling conducted at AOC 204 for the site evaluation for the Outfall 010, 011, and 012 areas.

Maps of each area showing the locations of the sampling points are provided in Figures B.1–B.5.

B.2 GROUNDWATER PATHWAYS

Groundwater contaminant migration at WAG 28 occurs principally by dissolution of contaminant sources present in the UCRS soils and subsequent transport by advective and dispersive mechanisms to the RGA. This occurs as rainwater infiltrates from the surface and percolates through the source of contamination and its surrounding soil into the saturated zone. Contaminated leachate then mixes with groundwater in the saturated zone while migrating laterally in the direction of groundwater flow to potential exposure locations. This results in a plume that expands as the contaminant migrates from the source area.

B.3 MEPAS METHODOLOGY

Modeling was conducted using MEPAS to simulate fate and transport of contaminants at WAG 28 (Battelle 1995). The MEPAS model calculates the fate and transport of contaminants from specified source terms and determines the associated risk to identified receptors. It can model contaminant releases to the atmosphere, surface water, and groundwater. For purposes of this analysis, only the groundwater contaminant transport portion of the model was run to calculate predicted contaminant concentrations in groundwater at receptor points within the RGA (Whelan et al. 1992).

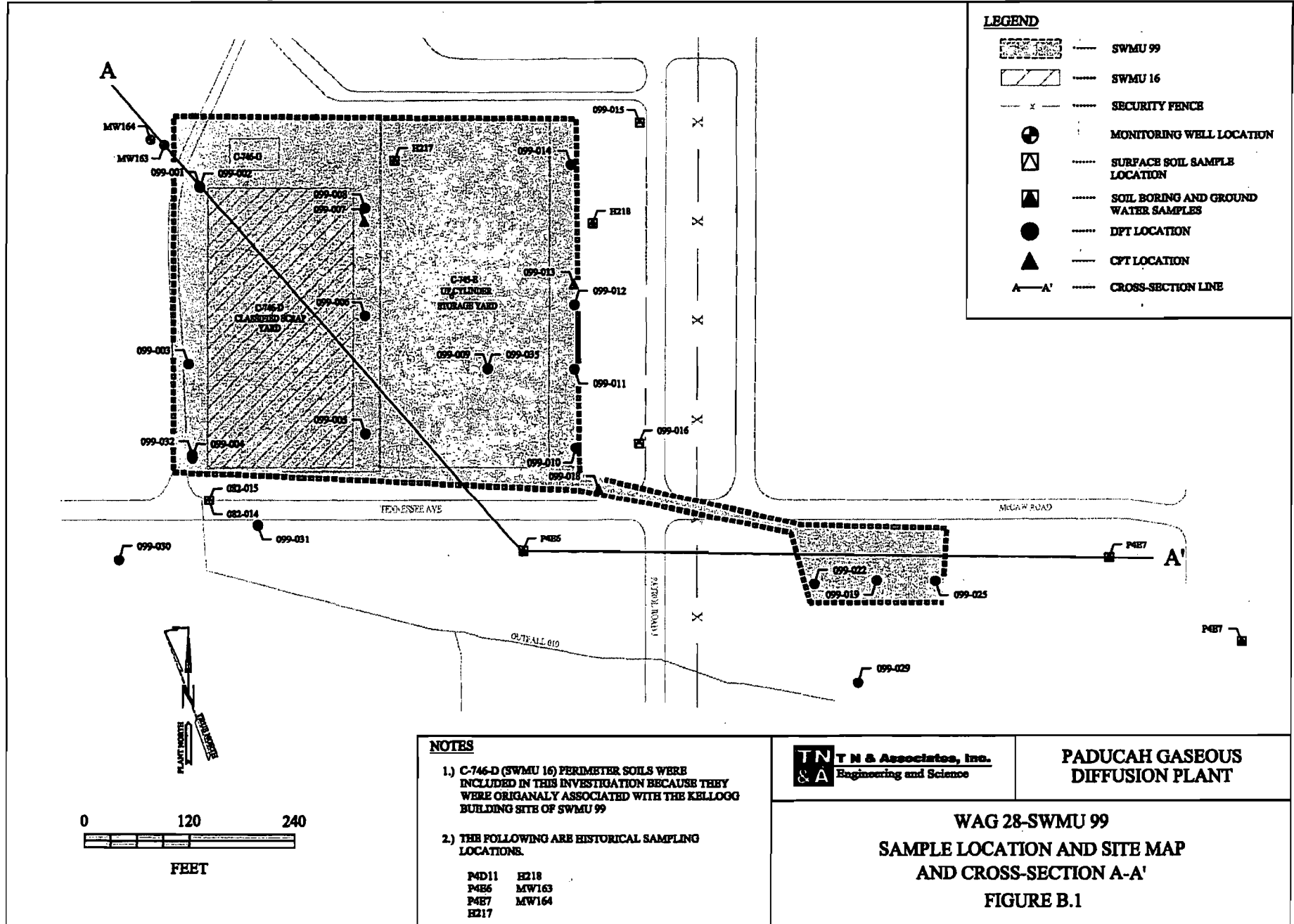
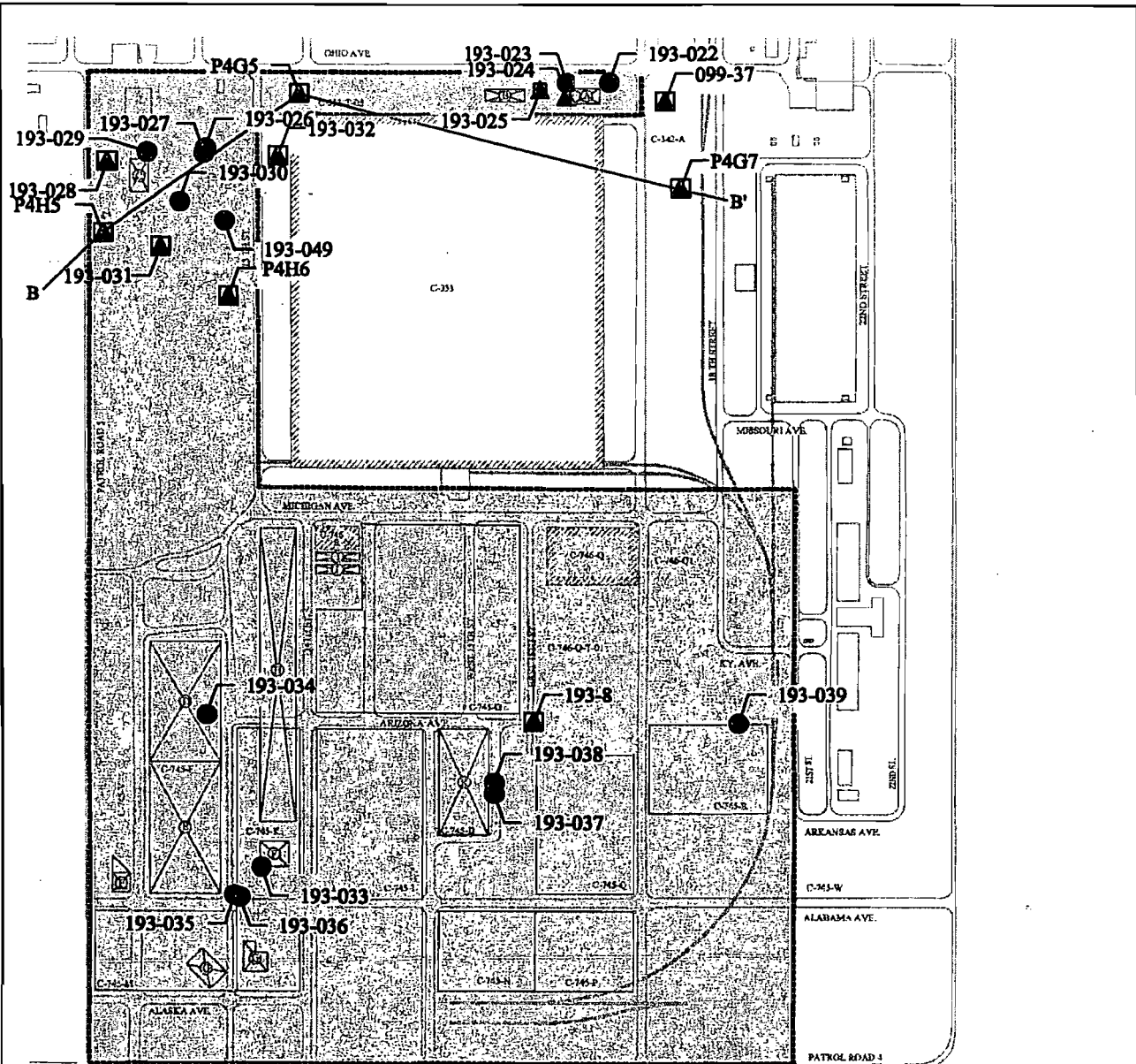


Fig. B.1. SWMU 99 WAG 28 RI Sample Location Site Map



LEGEND

- SWMU 193
- SECURITY FENCE
- WAG 28 TRANSECT
- EXISTING BUILDING
- SITE FOR FORMER BUILDING
- DPT LOCATION
- CPT LOCATION

- SOIL BORING LOCATION AND GROUND WATER SAMPLES
- CROSS-SECTION LINE

NOTES

- (A) SCHUMAN PIPS FABRICATION SHOP
- (B) WAREHOUSE
- (C) MILLWRIGHT SHOP
- (D) ELECTRICAL WAREHOUSE
- (E) BEEBY METAL SHOP
- (F) LEACHING FIELDS
- (G) FILLING STATION
- (H) GENERAL WAREHOUSE
- (I) ACETYLENE SHOP
- (J) PAINT SHOP
- (K) EQUIPMENT SHOP

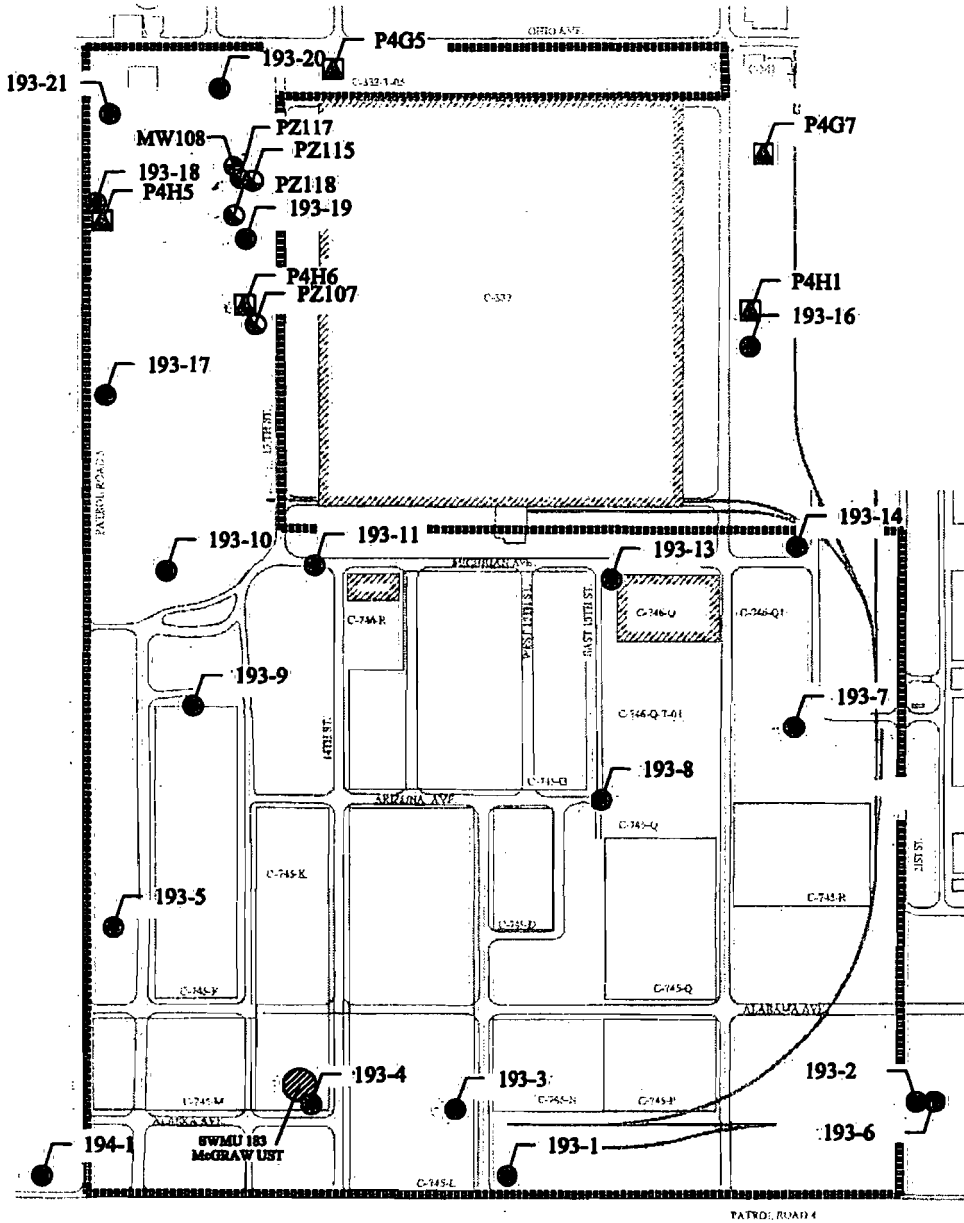


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**WAG 28-SWMU 193
SAMPLE LOCATION AND SITE MAP
AND CROSS-SECTION B-B'
FIGURE B.2**

Fig. B.2. SWMU 193 WAG 28 RI Sample Location Site Map



LEGEND

- SWMU BOUNDARY
- BUILDING
- SOIL BORING LOCATION AND GROUND WATER SAMPLES
- DPT LOCATION
- MONITORING WELL LOCATION
- PIEZOMETER LOCATION

<p>T N & Associates, Inc. Engineering and Science</p>	<p>PGDP PADUCAH, KY</p>
<p align="center">WAG 28-SWMU 193 HISTORICAL SAMPLING LOCATIONS FIGURE B.3</p>	

Fig. B.3. SWMU 193 Historical Sampling Locations

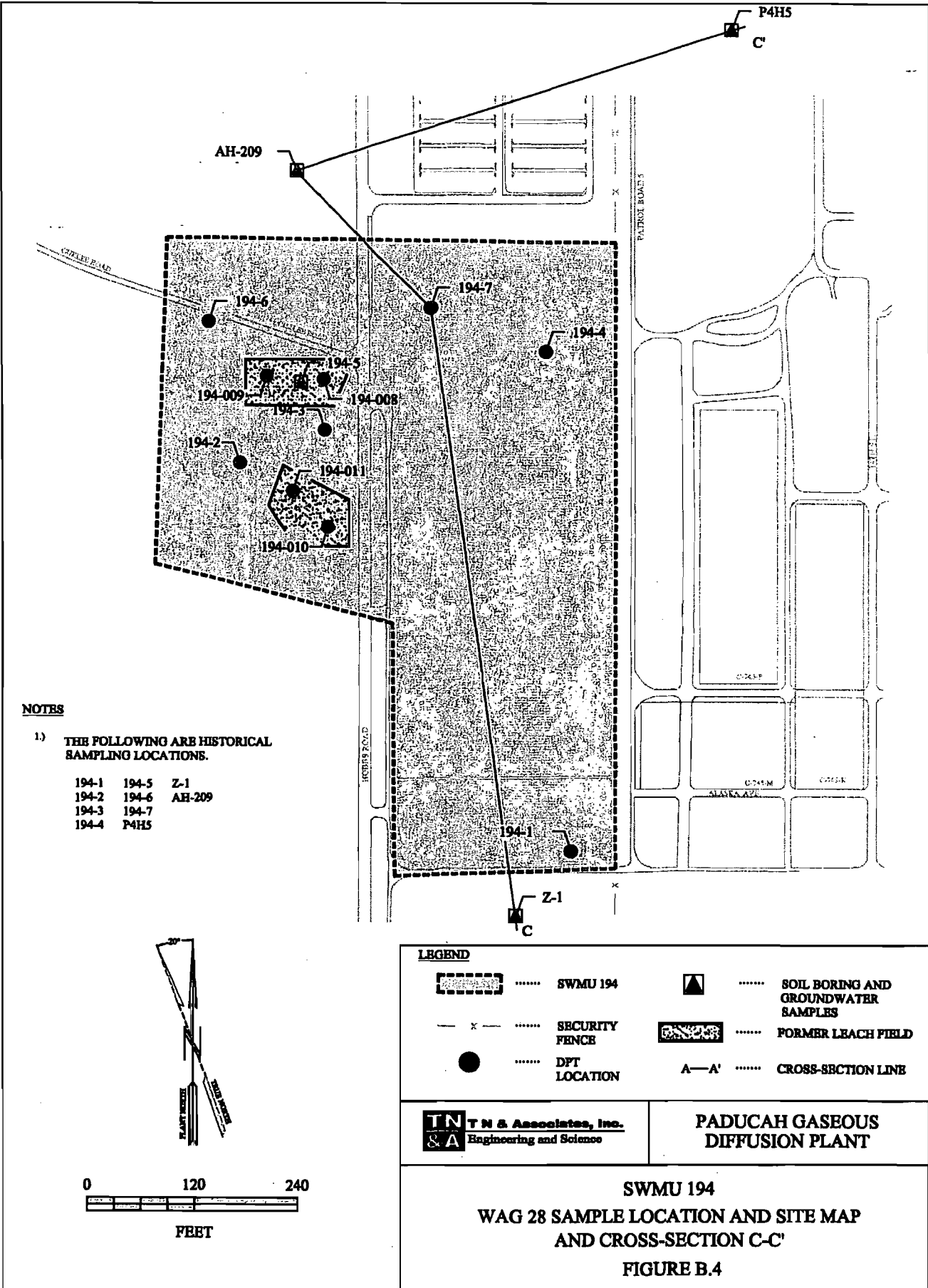


Fig. B.4 SWMU 194 WAG 28 RI Sample Location Site Map

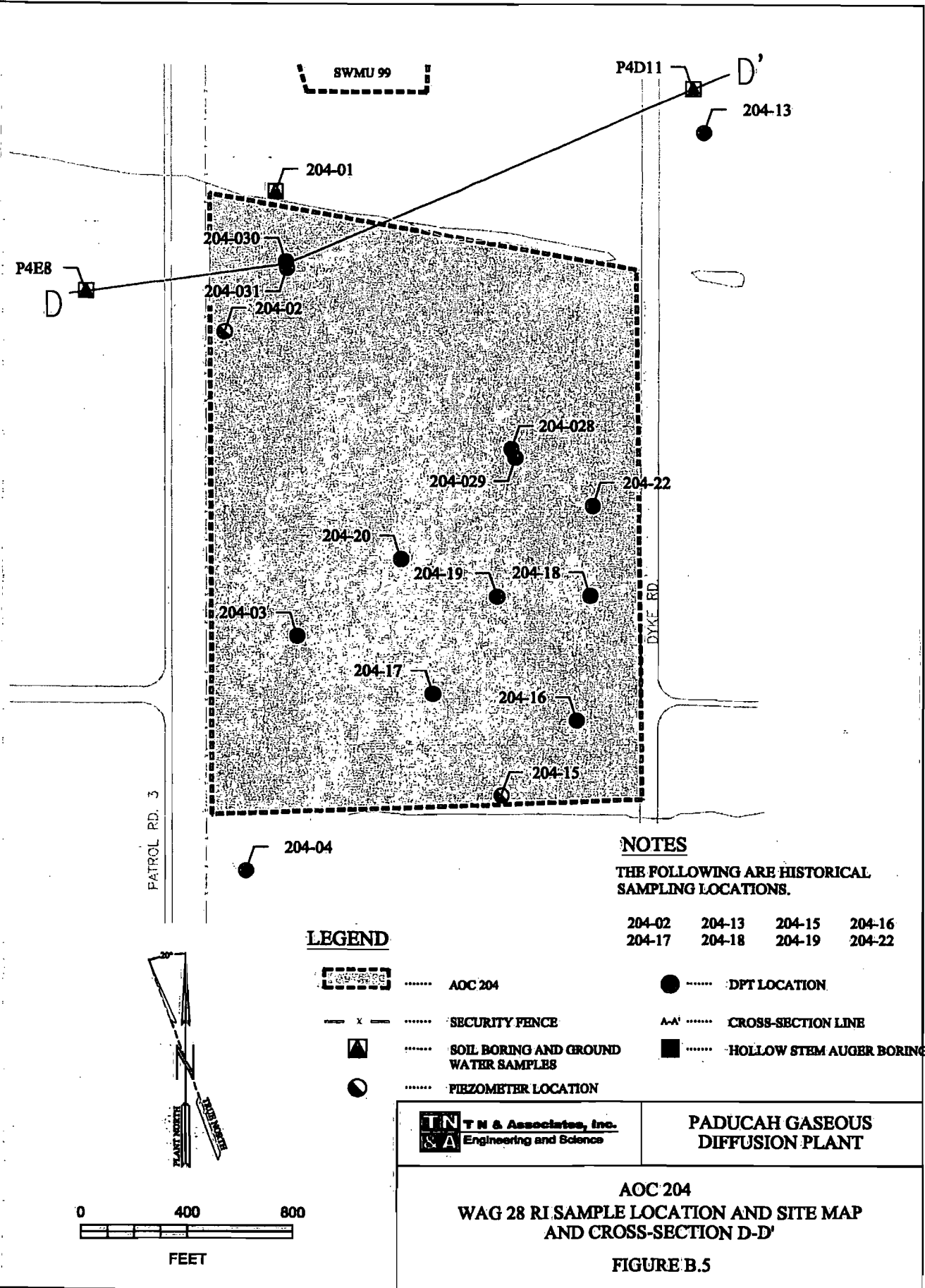


Fig. B.5. AOC 204 WAG 28 RI Sample Location Map

B.3.1 MEPAS GROUNDWATER TRANSPORT MODULE

The groundwater component of MEPAS allows for the definition of as many partially saturated layers as required to represent the site hydrogeology but limits the user to a single saturated layer. For WAG 28, the RGA was designated as the saturated layer, but the number of partially saturated layers defined for each area varied depending on the continuity of the sand and gravel layers of the UCRS at each site. For instance, at SWMU 99, thick deposits of sand and gravel in the UCRS were distinguished from the underlying clay aquitard by assigning them to separate partially saturated zones. The model assumes the moisture content for the partially saturated zones fluctuates between the field capacity and saturation. The assumption that these zones are unsaturated in the model may result in overestimation of contaminant transport to the RGA. In cases when the model sources were located in a partially saturated layer adjacent to saturated layers (a condition possible in the UCRS due to the presence of perched, discontinuous water zones), the moisture content of the release site soil was assumed to be 100 percent to simulate saturated conditions at the source.

The MEPAS code calculates groundwater concentrations using the one-dimensional advective and three-dimensional dispersive equation for solute flow, accounting for degradation and decay:

$$\left(\frac{\partial c}{\partial t}\right) + \left(\frac{u}{R_r}\right)\left(\frac{\partial c}{\partial x}\right) = \left(\frac{D_x}{R_r}\right)\left(\frac{\partial^2 c}{\partial x^2}\right) + \left(\frac{D_y}{R_r}\right)\left(\frac{\partial^2 c}{\partial y^2}\right) + \left(\frac{D_z}{R_r}\right)\left(\frac{\partial^2 c}{\partial z^2}\right) - \lambda c$$

in which

$$R_r = 1 + \frac{\beta K_d}{n_e} \text{ (saturated zone)}$$

$$R_r = 1 + \frac{\beta K_d}{\theta} \text{ (vadose zone)}$$

$$\theta = n \left[\frac{(K(\theta))}{K_s} \right]^b$$

and where:

c	= dissolved concentration (g/mL or Ci/mL)
u	= pore-water velocity (cm/sec)
D _x , D _y , D _z	= the dispersion coefficients in the X, Y, and Z directions, respectively (cm ² /sec)
λ	= degradation/decay rate (L/sec)
β	= bulk density of soil (g/cm ³)
K _d	= distribution coefficient (mL/g)
n _e	= effective porosity (dimensionless)
n	= total porosity (dimensionless)
θ	= moisture content of the soil (dimensionless)
K(θ)	= unsaturated hydraulic conductivity (cm/sec)
K _s	= saturated hydraulic conductivity (cm/sec)
b	= empirically based value that is a function of the soil property
R _r	= retardation factor

Because the MEPAS methodology accounts for degradation/decay, the model is especially useful for such screening-level groundwater modeling.

The MEPAS model allows flexibility in how sources are modeled. The source term (or total mass of each contaminant to be modeled) is determined from historical records or if records are not available, the geometry of the contaminated area and the concentration of the contaminant in soil can be used to estimate the contaminant inventory remaining at the site. To calculate contaminant transport in one dimension, MEPAS also requires various site-specific input parameters defining the different media (i.e., distinct geologic layers) through which the contaminants pass.

In this analysis, all sources were modeled as depleting over time and degrading within the environment (groundwater). The MEPAS degradation function is based on the amount of organic matter present in soils. Very little organic matter is present in soils at PGDP, so MEPAS predicts minimal degradation of organics in the groundwater.

B.3.2 MEPAS PARAMETER SELECTION AND CONTAMINANT SCREENING

MEPAS requires values for various parameters describing the site soils, geology, and hydrogeology. The majority of transport parameters were derived independently for each WAG 28 site, based on site-specific data. When relevant on-site data were not available, data collected at nearby SWMUs having similar hydrogeologic conditions were utilized to define the parameter. Where no site-specific data were available (i.e., K_d values), MEPAS default values were used. The soil and aquifer transport parameters that were input into the MEPAS model for SWMU 99, SWMU 193, SWMU 194, and AOC 204 are presented in Tables B-1-B-4.

The contaminant source concentrations were determined from soil-sampling results. Simulated sources were defined separately for the surface soil and the UCRS to accommodate the remedial action decision process.

The decision flow chart shown in Figure B.6 defines the screening process by which contaminants to be modeled were identified. For soil sample analytes with an established EPA SSL or background level, all detections in each SWMU were compared against the larger of the SSL or the background. If no detection of the analyte was above the reference level, that analyte was screened out as a WAG 28 site-related contaminant.

Next, essential human nutrients (such as calcium, chloride, copper, fluoride, iron, magnesium, potassium, selenium, sodium, and zinc) were screened against one-fifth of the RDA value. If no detection of the analyte was above that reference level, the nutrient was screened out as a WAG 28 site-related contaminant. Any analytes determined to be laboratory-related contaminants or decontamination solvents were excluded from the list of potential WAG 28 site-related contaminants. Laboratory-related contaminants at WAG 28 included acetone, methylene chloride, and bis(2-ethylhexyl)phthalate.

Additional analytes were screened out of the list of SWMU-related contaminants if the analytes were detected very few times in the database for the SWMU. If the number of detections was determined to be less than 5% of the total number of analyses, the analyte was not retained for MEPAS modeling.

Table B.1. MEPAS transport parameters for SWMU 99

Input parameter description	Parameter name	Value	Reference
Topsoil parameters (wt)			
Textural classification	WT-CLASS	Silt	McCracken Co. Soil Survey (USDA 1976)
Percent sand (%)	WT-SAND	15	McCracken Co. Soil Survey: conservative estimate (highest % sand)
Percent silt (%)	WT-SILT	80	Maximum % silt for soil type
Percent clay (%)	WT-CLAY	5	= 100% - % sand - % silt
Percent organic matter (%)	WT-OMC	0.05	CERCLA Phase II Site Investigation (CH2M HILL 1992), Table 5.1
Percent iron and aluminum (%)	WT-IRON	4	DOE 1995a (Background Concentrations and Human Health Risk-Based Screening Criteria for Metals in Soil at PGDP)
pH of topsoil	WT-pH	5.0	McCracken Co. Soil Survey
Percent vegetative cover of site (%)	WT-VEGCOV	0	Covered by concrete or gravel
Topsoil water capacity	WT-AVAILW	0.0	McCracken Co. Soil Survey = available water capacity (0.20 in./in.) × root zone depth (23 in.) × vegetative cover (0%)
SCS curve number	WT-SCSN	86	Antecedent Moisture Condition = II (normal moisture); Group C hydrologic soil group; bare soil, hard surface, 0-20% vegetated
Properties of the partially saturated zones (wp)			
Thickness (ft)	WP-THICK	WP1 42 WP2 17	1-43 ft (HU 1 + HU 2) 43-60 ft (HU 3) Boring logs at SWMU 99
Textural classification	WP-CLASS	WP1 silty clay loam WP2 silty clay	Boring logs and sieve analyses from Corps of Engineers boring COE-38
Sand (%)	WP-SAND	WP1 5 WP2 8	Boring logs, sieve analyses for boring COE-38 SWMU 2 geotechnical data
Silt (%)	WP-SILT	WP1 65 WP2 38	Boring logs, sieve analyses for boring COE-38 SWMU 2 geotechnical data
Clay (%)	WP-CLAY	WP1 30 WP2 54	Boring logs, sieve analyses for boring COE-38 SWMU 2 geotechnical data

Table B.1. (Continued)

Input parameter description	Parameter name	Value		Reference
Organic matter content in soil (%)	WP-OMC	WP1 0.08 WP2 0.06		Average, WAG 27 RI, 7–40 ft Average, WAG 27 RI, 40–50 ft
Iron + aluminum in soil (%)	WP-IRON	4		DOE 1995b
pH of pore water in partially saturated zone	WP-pH	6.0		DOE 1995a
Bulk density(g/cm ³)	WP-BULKD	WP1 1.46 WP2 1.46		Table 2.1 of MEPAS Guidance, [(2.65 × (1-Porosity))]
Total porosity (%)	WP-TOTPOR	WP1 45 WP2 45		Table 2.1 of MEPAS Guidance, based on soil type; maximum porosity of 45% measured in UCRS samples at WAG 6 was used as upper limit of total porosity for clay-rich layers
Field capacity (%)	WP-FIELDC	WP1 37.5 WP2 42		Table 2.1 of MEPAS Guidance, based on soil type
Longitudinal dispersivity (ft)	WP-LDISP	WP1 0.42 WP2 0.17		Estimated based on MEPAS guidance: $D_L = 0.01 \times \text{thickness}$
Saturated hydraulic conductivity (ft/day)	WP-CONDUCT	<u>ft/day</u> WP1 1.86 WP2 1.1E-1	<u>cm/sec</u> 6.54E-4 3.78E-5	WP1: Slug test at MW 164 (NW of SWMU 99) WP2: Slug test at MW 204 (Phase II Site Investigation)
Moisture content (%)	WS-MOISTC	WP1 43 WP2 45		WP1: Shallow water table—moisture content between field capacity and porosity value WP2: Moisture content = total porosity
Properties of the saturated zone (wz)				
Textural classification	WZ-CLASS	Sand (gravelly)		Deep boring logs surrounding area
Sand (%)	WZ-SAND	75		Average, WAG 6 geotechnical data and SWMU 99 boring logs
Silt (%)	WZ-SILT	15		Average, WAG 6 geotechnical data and SWMU 99 boring logs
Clay (%)	WZ-CLAY	10		Average, WAG 6 geotechnical data and SWMU 99 boring logs
Organic matter in soil (%)	WZ-OMC	0.02		Average WAG 6 RGA soil data
Iron + aluminum in soil (%)	WZ-IRON	2		Average, SWMU 99, 51–60 ft samples
pH of pore water in saturated zone	WZ-pH	6.4		Average pH of RGA groundwater (WAG 27 data)
Total porosity (%)	WZ-TOTPOR	37		Conservative, based on WAG 6 measurement
Effective porosity (%)	WZ-EFFPOR	30		Conservative estimate

Table B.1. (Continued)

Input parameter description	Parameter name	Value	Reference
Darcy velocity (ft/day)	WZPVELOC	0.6	Conservative estimate; uses conductivity of 1500 ft/d and gradient of 0.0004
Thickness (ft)	WZ-THICK	40	RGA (HU 4 + HU 5) interval: 60–100 ft bgs
Bulk density (ft)	WZ-BULKD	1.67	(2.65 g/cm ³ × 0.63)
Travel distance (ft)	WZ-DIST	<p>Outside sources:</p> <ul style="list-style-type: none"> • 10 ft to PGDP fence • 4500 ft to DOE property boundary <p>Inside sources:</p> <ul style="list-style-type: none"> • 700 ft to PGDP fence • 4800 ft to DOE property boundary 	Sources at SWMU 99 are located inside or outside the PGDP security fence. Those located inside the fence were modeled using a distance of 700 ft to the fence and 4800 ft to the DOE property boundary. For sources located near or outside the fence, the distance to PGDP fence was assumed to be 10 ft (model does not accept zero value). The distance to the property boundary was 4500 ft. The distances were measured along the groundwater flow direction to the eastern DOE property boundary
Longitudinal dispersivity (ft)	WZ-LDISP	50.0	Reference: Bioplume groundwater model
Transverse dispersivity (ft)	WZ-TDISP	5.0	Reference: Bioplume groundwater model
Vertical dispersivity (ft)	WZ-VDISP	0.1	Near zero
Percent of total flux to aquifer (%)	WZ-FRACT	100	Conservative
Perpendicular distance from groundwater flow to receptor (ft)	WZ-YDIST	0	(Plume centerline concentrations)
Vertical distance below groundwater table (ft)	WZ-AQDEPTH	0	(Most conservative result)

Table B.2. MEPAS transport parameters for SWMU 193

Input parameter description	Parameter name	Value	Reference
Topsoil parameters (wt)			
Textural classification	WT-CLASS	Silt	McCracken Co. Soil Survey (USDA 1976)
Percent sand (%)	WT-SAND	15	McCracken Co. Soil Survey: conservative estimate (highest % sand)
Percent silt (%)	WT-SILT	80	Maximum % silt for soil type
Percent clay (%)	WT-CLAY	5	= 100% - % sand - % silt
Percent organic matter (%)	WT-OMC	0.05	CERCLA Phase II Site Investigation (CH2M HILL 1992), Table 5.1
Percent iron and aluminum (%)	WT-IRON	4	DOE 1995a (Background Concentrations and Human Health Risk-Based Screening Criteria for Metals in Soil at PGDP)
pH of topsoil	WT-pH	5.0	McCracken Co. Soil Survey
Percent vegetative cover of site (%)	WT-VEGCOV	18	Mostly covered by concrete or gravel
Topsoil water capacity	WT-AVAILW	0.83	McCracken Co. Soil Survey = available water capacity (0.20 in./in.) × root zone depth (23 in.) × vegetative cover (18%)
SCS curve number	WT-SCSN	86	Antecedent Moisture Condition = II (normal moisture); Group C hydrologic soil group; bare soil, hard surface, 0-20% vegetated
Properties of the partially saturated zones (wp)			
Thickness (ft)	WP-THICK	WP1 67	1-68 ft (HU 1 + HU 2 + HU 3) Boring logs from Groundwater Phase IV Investigation
Textural classification	WP-CLASS	WP1 silty clay loam	Boring logs and sieve analyses from nearby Corps of Engineers boring COE-35
Sand (%)	WP-SAND	WP1 17	Sieve analyses from boring COE-35
Silt (%)	WP-SILT	WP1 63	Sieve analyses from boring COE-35
Clay (%)	WP-CLAY	WP1 20	Sieve analyses from boring COE-35
Organic matter content in soil (%)	WP-OMC	WP1 0.07	Average, WAG 27 R1, 7-50 ft

Table B.2. (Continued)

Input parameter description	Parameter name	Value		Reference
Iron + aluminum in soil (%)	WP-IRON	4		DOE 1995b
pH of pore water in partially saturated zone	WP-pH	6.0		DOE 1995a
Bulk density(g/cm ³).	WP-BULKD	WPI 1.46		Table 2.1 of MEPAS Guidance [2.65 × (1-Porosity)]
Total porosity (%)	WP-TOTPOR	WPI 45		Table 2.1 of MEPAS Guidance, based on soil type; maximum porosity of 45% measured in UCRS samples at WAG 6 was used as upper limit of total porosity for clay-rich layers
Field capacity (%)	WP-FIELDC	WPI 37.5		Table 2.1 of MEPAS Guidance, based on soil type
Longitudinal dispersivity (ft)	WP-LDISP	WPI 0.67		MEPAS Guidance: D _L = 0.01 × (Th)
Saturated hydraulic conductivity (ft/day)	WP-CONDUCT	ft/day WPI 1.5E-1	cm/sec 5.20E-5	Slug test at MW 131
Moisture content (%)	WS-MOISTC	WPI 43		WPI: Shallow water table—moisture content between field capacity and porosity value
Properties of the saturated zone (wz)				
Textural classification	WZ-CLASS	Sand (gravelly)		Deep boring logs in surrounding area
Sand (%)	WZ-SAND	75		Average, WAG 6 geotechnical data and SWMU 193 boring logs
Silt (%)	WZ-SILT	15		Average, WAG 6 geotechnical data and SWMU 193 boring logs
Clay (%)	WZ-CLAY	10		Average, WAG 6 geotechnical data and SWMU 193 boring logs
Organic matter in soil (%)	WZ-OMC	0.02		Average WAG 6 RGA soil data
Iron + aluminum in soil (%)	WZ-IRON	3		Average, WAG 6, 62–78 ft samples
pH of pore water in saturated zone	WZ-pH	6.4		Average pH of RGA groundwater (WAG 27 data)
Total porosity (%)	WZ-TOTPOR	37		Conservative, based on WAG 6 measurement
Effective porosity (%)	WZ-EFFPOR	30		Conservative estimate
Darcy velocity (ft/day)	WZPVELOC	0.6		Conservative estimate; uses conductivity of 1500 ft/d and gradient of 0.0004
Thickness (ft)	WZ-THICK	25		RGA (HU 4 + HU 5) interval: 68–93 ft bgs
Bulk density (ft)	WZ-BULKD	1.67		(2.65 g/cm ³ × 0.63)

Table B.2. (Continued)

Input parameter description	Parameter name	Value	Reference
Travel distance (ft)	WZ-DIST	3000 ft – PGDP fence	Minimum distance to eastern PGDP fence along groundwater flowpath.
		7400 ft – DOE property boundary	Minimum distance to DOE property boundary along groundwater flowpath
Longitudinal dispersivity (ft)	WZ-LDISP	50.0	Reference: Bioplume groundwater model
Transverse dispersivity (ft)	WZ-TDISP	5.0	Reference: Bioplume groundwater model
Vertical dispersivity (ft)	WZ-VDISP	0.1	Near zero
Percent of total flux to aquifer (%)	WZ-FRACT	100	Conservative
Perpendicular distance from groundwater flow to receptor (ft)	WZ-YDIST	0	(Plume centerline concentrations)
Vertical distance below groundwater table (ft)	WZ-AQDEPTH	0	(Most conservative result)

Table B.3. MEPAS transport parameters for SWMU 194

Input parameter description	Parameter name	Value	Reference
Topsoil parameters (wt)			
Textural classification	WT-CLASS	Silt	McCracken Co. Soil Survey
Percent sand (%)	WT-SAND	15	McCracken Co. Soil Survey: conservative estimate (highest % sand)
Percent silt (%)	WT-SILT	80	Maximum % silt for soil type
Percent clay (%)	WT-CLAY	5	= 100% - % sand - % silt
Percent organic matter (%)	WT-OMC	0.05	CERCLA Phase II Site Investigation (CH2M HILL 1992), Table 5.11
Percent iron and aluminum (%)	WT-IRON	4	DOE 1995a (Background Concentrations and Human Health Risk-based Screening Criteria for Metals in Soil at PGDP)
pH of topsoil	WT-pH	5.0	McCracken Co. Soil Survey
Percent vegetative cover of site (%)	WT-VEGCOV	100	Covered by vegetation
Topsoil water capacity	WT-AVAILW	4.6	McCracken Co. Soil Survey = available water capacity (0.20 in./in.) × root zone depth (23 in.) × vegetative cover (100%)
SCS curve number	WT-SCSN	71	Antecedent Moisture Condition = II (normal moisture); Group C hydrologic soil group; well vegetated
Properties of the partially saturated zones (wp)			
Thickness (ft)	WP-THICK	54	1-55 ft bgs Average based on boring logs in vicinity of SWMU 194
Textural classification	WP-CLASS	Silty, clayey sand	Boring logs (silty sand) and sieve analyses for nearby Corps of Engineers boring COE-20
Sand (%)	WP-SAND	72	Sieve analyses at boring COE-20 for silty sand sample at 38 ft bgs
Silt (%)	WP-SILT	16	Sieve analyses at boring COE-20
Clay (%)	WP-CLAY	12	= 100 - % silt - % sand
Organic matter content in soil (%)	WP-OMC	0.07	WAG 27 RI average for UCRS
Iron + aluminum in soil (%)	WP-IRON	4	DOEb 1995
pH of pore water in partially saturated zone	WP-pH	6.45	Average pH, SWMU 193
Bulk density(g/cm ³)	WP-BULKD	1.49	Table 2.1 of MEPAS Guidance, [2.65 × (1-Porosity)]
Total porosity (%)	WP-TOTPOR	43.7	Table 2.1 of MEPAS Guidance, based on soil type

Table B.3. (Continued)

Input parameter description	Parameter name	Value		Reference
Field capacity (%)	WP-FIELDC	12		Table 2.1 of MEPAS Guidance, based on soil type
Longitudinal dispersivity (ft)	WP-LDISP	0.54		Estimate based on MEPAS guidance: $D_L = 0.01 \times \text{thickness}$
Saturated hydraulic conductivity (ft/day)	WP-CONDUCT	<u>ft/day</u> 5.39	<u>cm/sec</u> 1.9E-3	Table 2.1 of MEPAS Guidance, based on soil type.
Moisture content (%)	WS-MOISTC	20		Measured value at boring COE-20
Properties of the saturated zone (wz)				
Textural classification	WZ-CLASS	Silty sand/gravel		Boring log description for RGA in nearby boring AH209
Sand (%)	WZ-SAND	74		Average, WAG 6 RGA geotechnical data
Silt (%)	WZ-SILT	17		Average, WAG 6 RGA geotechnical data
Clay (%)	WZ-CLAY	9		Average, WAG 6 RGA geotechnical data
Organic matter in soil (%)	WZ-OMC	0.02		Average, WAG 6 RGA data
Iron + aluminum in soil (%)	WZ-IRON	3		Average, WAG 6 RGA data
pH of pore water in saturated zone	WZ-pH	6.2		Average pH of RGA groundwater at WAG 6
Total porosity (%)	WZ-TOTPOR	37		Conservative, based on WAG 6 measurement
Effective porosity (%)	WZ-EFFPOR	30		Conservative estimate
Darcy velocity (ft/day)	WZPVELOC	0.6		Conservative estimate; uses conductivity of 1500 ft/d and gradient of 0.0004
Thickness (ft)	WZ-THICK	30		RGA (HU 4 + HU 5) interval: 55-85 ft bgs
Bulk density (ft)	WZ-BULKD	1.67		(2.65 g/cm ³ x 0.63)
Travel distance (ft)	WZ-DIST	10 ft to fence	8,700 ft to DOE property boundary	Distance to fence along groundwater flowpath: SWMU 194 is outside the fence (model does not accept zero value, so small value was used) Minimum distance to DOE property boundary along groundwater flowpath
Longitudinal dispersivity (ft)	WZ-LDISP	50.0		Reference: Bioplume groundwater model
Transverse dispersivity (ft)	WZ-TDISP	5.0		Reference: Bioplume groundwater model
Vertical dispersivity (ft)	WZ-VDISP	0.1		Near zero
Percent of total flux to aquifer (%)	WZ-FRACT	100		

Table B.3. (Continued)

Input parameter description	Parameter name	Value	Reference
Perpendicular distance from groundwater flow to receptor (ft)	WZ-YDIST	0	(Plume centerline concentrations)
Vertical distance below groundwater table (ft)	WZ-AQDEPTH	0	(Most conservative result)

Table B.4. MEPAS transport parameters for AOC 204

Input parameter description	Parameter name	Value	Reference
Topsoil parameters (wt)			
Textural classification	WT-CLASS	Silt	McCracken Co. Soil Survey (USDA 1976)
Percent sand (%)	WT-SAND	15	McCracken Co. Soil Survey: conservative estimate (highest % sand)
Percent silt (%)	WT-SILT	80	Maximum % silt for soil type
Percent clay (%)	WT-CLAY	5	= 100% - % sand - % silt
Percent organic matter (%)	WT-OMC	0.05	CERCLA Phase III Site Investigation (CH2M HILL 1992), Table 5.1
Percent iron and aluminum (%)	WT-IRON	4	DOE 1995a (Background Concentrations and Human Health Risk-Based Screening Criteria for Metals in Soil at PGDP)
pH of topsoil	WT-pH	5.0	McCracken Co. Soil Survey
Percent vegetative cover of site (%)	WT-VEGCOV	100	Covered with heavy vegetation
Topsoil water capacity	WT-AVAILW	4.6	McCracken Co. Soil Survey = available water capacity (0.20 in./in.) × root zone depth (23 in.) × vegetative cover (100%)
SCS curve number	WT-SCSN	71	Antecedent Moisture Condition = II (normal moisture); Group C hydrologic soil group; vegetated surface, well vegetated
Properties of the partially saturated zones (wp)			
Thickness (ft)	WP-THICK	WP1 51 WP2 15	1-52 ft (HU 1 + HU 2) 52-67 ft (HU 3) Boring logs at AOC 204, NE Plume Study, and Phase II SI
Textural classification	WP-CLASS	WP1 silty clay loam WP2 silty clay	Boring logs at AOC 204 and sieve analyses from Corps of Engineers Boring COE-38
Sand (%)	WP-SAND	WP1 5 WP2 8	Boring logs, sieve analyses for boring COE-38 SWMU 2 geotechnical data
Silt (%)	WP-SILT	WP1 65 WP2 38	Boring logs, sieve analyses for boring COE-38 SWMU 2 geotechnical data
Clay (%)	WP-CLAY	WP1 30 WP2 54	Boring logs, sieve analyses for boring COE-38 SWMU 2 geotechnical data

Table B.4. (Continued)

Input parameter description	Parameter name	Value		Reference
Organic matter content in soil (%)	WP-OMC	WP1 0.08 WP2 0.06		Average, WAG 27 RI, 7–40 ft (HU 1 + HU 2) Average, WAG 27 RI, 40–50 ft (HU 3)
Iron + aluminum in soil (%)	WP-IRON	4		DOE 1995b
pH of pore water in partially saturated zone	WP-pH	6.0		DOE 1995a
Bulk density (g/cm ³)	WP-BULKD	WP1 1.46 WP2 1.46		Table 2.1 of MEPAS Guidance, [2.65 × (1-Porosity)]
Total porosity (%)	WP-TOTPOR	WP1 45 WP2 45		Table 2.1 of MEPAS Guidance, based on soil type; maximum porosity of 45% measured in some UCRS samples at WAG 6 was used as upper limit for clay-rich layers
Field capacity (%)	WP-FIELDC	WP1 37.5 WP2 42		Table 2.1 of MEPAS Guidance, based on soil type
Longitudinal dispersivity (ft)	WP-LDISP	WP1 0.51 WP2 0.15		MEPAS guidance: $D_L = 0.01 \times (Th)$
Saturated hydraulic conductivity (ft/day)	WP-CONDUCT	<u>ft/day</u> WP1 1.86 WP2 1.1E-1	<u>cm/sec</u> 6.54E-4 3.78E-5	WP1: Slug test at MW 164 (NW of SWMU 99) WP2: Slug test at MW 204 (Phase II Site Investigation)
Moisture content (%)	WS-MOISTC	WP1 43 WP2 45		WP1: Shallow water table—moisture content between field capacity and porosity value WP2: Moisture content = total porosity
Properties of the saturated zone (wz)				
Textural classification	WZ-CLASS	Sand (gravelly)		Deep boring logs from the surrounding area
Sand (%)	WZ-SAND	75		Average, WAG 6 geotechnical data and AOC 204 boring logs
Silt (%)	WZ-SILT	15		Average, WAG 6 geotechnical data and AOC 204 boring logs
Clay (%)	WZ-CLAY	10		Average, WAG 6 geotechnical data and AOC 204 boring logs
Organic matter in soil (%)	WZ-OMC	0.02		Average WAG 6 RGA soil data
Iron + aluminum in soil (%)	WZ-IRON	2		Average, SWMU 99, 51–60 ft samples
pH of pore water in saturated zone	WZ-pH	6.4		Average pH of RGA groundwater (WAG 27 data)
Total porosity (%)	WZ-TOTPOR	37		Conservative, based on WAG 6 measurement
Effective porosity (%)	WZ-EFFPOR	30		Conservative estimate

Table B.4. (Continued)

Input parameter description	Parameter name	Value	Reference
Darcy velocity (ft/day)	WZPVELOC	0.6	Conservative estimate; uses conductivity of 1500 ft/d and gradient of 0.0004
Thickness (ft)	WZ-THICK	28	RGA (HU 4 + HU 5) interval: 67–95 ft bgs
Bulk density (ft)	WZ-BULKD	1.67	(2.65 g/cm ³ × 0.63)
Travel distance (ft)	WZ-DIST	10 ft to PGDP fence 4500 ft to DOE property boundary	Distance to PGDP eastern fence along groundwater flowpath – AOC 204 is outside the fence (model does not accept zero value, so small value was used) Minimum distance to DOE property boundary along groundwater flowpath
Longitudinal dispersivity (ft)	WZ-LDISP	50.0	Reference: Bioplume groundwater model
Transverse dispersivity (ft)	WZ-TDISP	5.0	Reference: Bioplume groundwater model
Vertical dispersivity (ft)	WZ-VDISP	0.1	Near zero
Percent of total flux to aquifer (%)	WZ-FRACT	100	Conservative
Perpendicular distance from groundwater flow to receptor (ft)	WZ-YDIST	0	(Plume centerline concentrations)
Vertical distance below groundwater table (ft)	WZ-AQDEPTH	0	(Most conservative result)

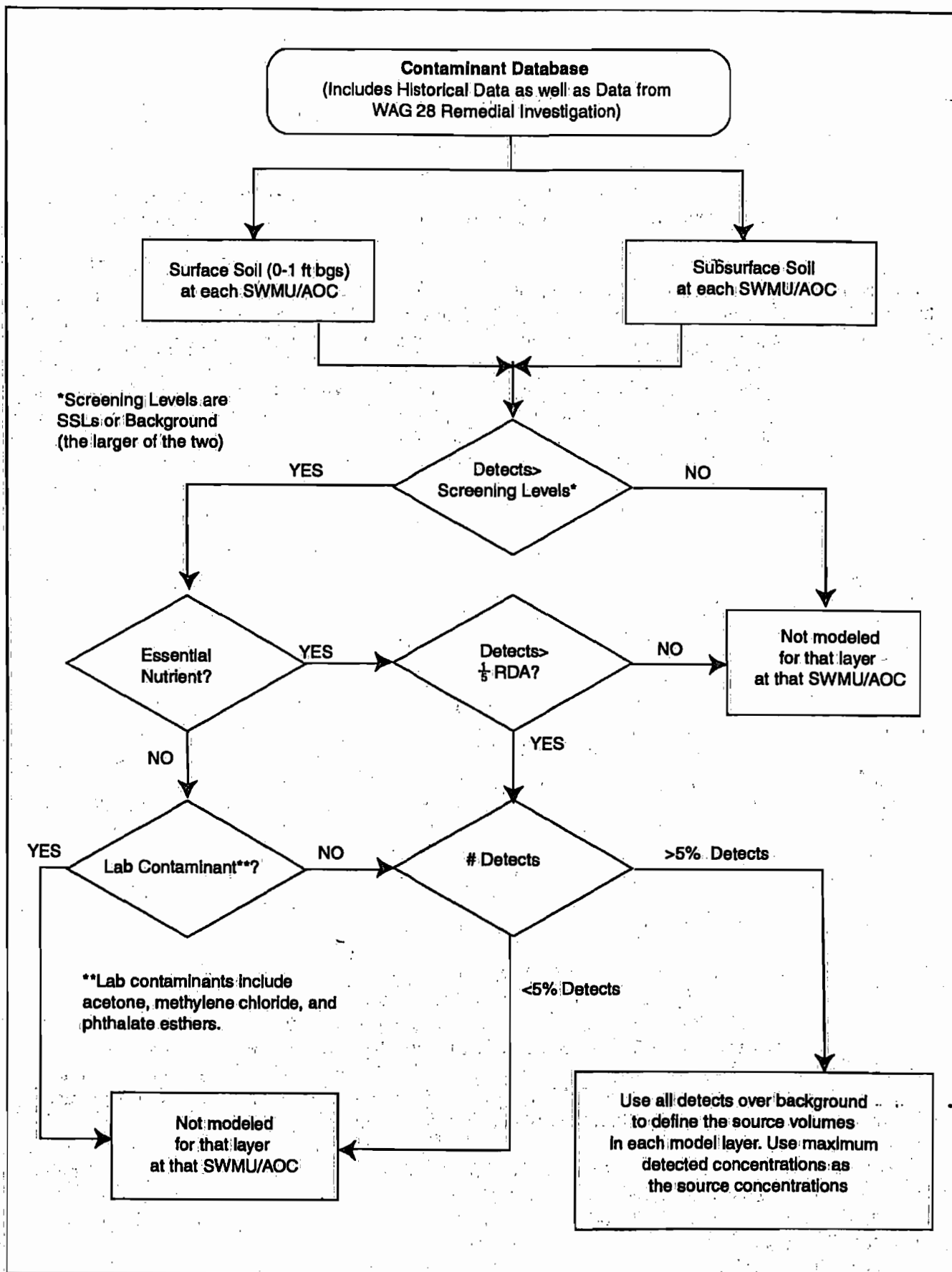


Fig. B.6. Contaminant screening and development of source terms

In general, the full distance to adjacent boreholes where a contaminant could be documented to be below the screening level and the full depth to where a contaminant could be determined to be below the screening level defined the extent of the modeled source terms. In a few instances where source delineation was not so clearly derived, some professional judgment was necessary to determine source zones. In all cases, modelers applied conservatism (worst case) in the definition of the extent of the source zones. In all cases, the maximum concentrations were used to develop each contaminant source-term inventory.

Concentrations were modeled to two receptor points: the PGDP security fence and the DOE property boundary. The MEPAS model does not model multiple sources simultaneously; therefore, separate model simulations were required for sources contained in different subsurface layers. To determine the final concentrations reaching the exposure points, the concentrations from each source were summed for equal time values. This methodology, along with other modeling assumptions (such as the use of maximum concentrations to determine inventories), results in total concentrations that are conservative, overestimating contaminant concentrations in groundwater. Output tables report the maximum concentrations for each source constituent and the corresponding times at which they reach each receptor point. Results were presented separately for the surface soil and the UCRS sources to assist in remedial action selection. In some instances, a maximum concentration could not be modeled within the given time frame.

The following sections describe development of the source terms and the modeling results for each of the SWMUs and AOC in WAG 28.

B.4 SWMU 99

Based on soil boring logs, three model layers (two partially saturated and one saturated) were delineated at SWMU 99. These layers correspond to the upper portion of the UCRS (1–43 ft bgs), the HU 3 aquitard (43–60 ft bgs), and the RGA (60–105 ft bgs). Figure B.7 presents a cross-section delineating the layers modeled at the unit. The travel distances from the source to each downgradient exposure point vary depending on the location of the source volume. The MEPAS model does not accept zero distance values, so a small, non-zero value was used (10 ft) as the distance to the PGDP security fence for sources located east of the former Kellogg Building site, outside the fence. For sources located outside the fence, a distance of 4500 ft was used to model transport to the DOE property boundary at the eastern side of the plant. For sources located west of the former Kellogg Building site, the distances used were 700 ft to the PGDP security fence and 4800 ft to the DOE property boundary.

The WAG 28 RI, the CERCLA SI, and the 1995 Northeast Plume Investigation provided surface and subsurface soil data used to develop the source terms. Table B.5 presents the source terms used in the MEPAS modeling for SWMU 99. Discrete subsurface source areas were defined for each contaminant present in each subsurface layer (surface soil, partially saturated layer 1, and partially saturated layer 2). Maximum concentrations were used to estimate contaminant inventories. Five metals, four radionuclides, and one organic constituent were detected above screening levels in surface soils at the site. Five metals and three radionuclides were detected above screening levels in the partially saturated zone soils.

Four contaminants [aluminum, barium, benzo(b)fluoranthene, and chromium] were detected only once above screening levels in surface soil. Four separate source terms for these contaminants, centered around the appropriate sample locations, were developed as described in Table B.5. Lithium and strontium were identified as present above screening levels in surface soils at SWMU 99. No background values are available for lithium and strontium at PGDP, so all detected values were used to develop their source volumes. Because lithium and strontium were widespread across the unit, their source areas

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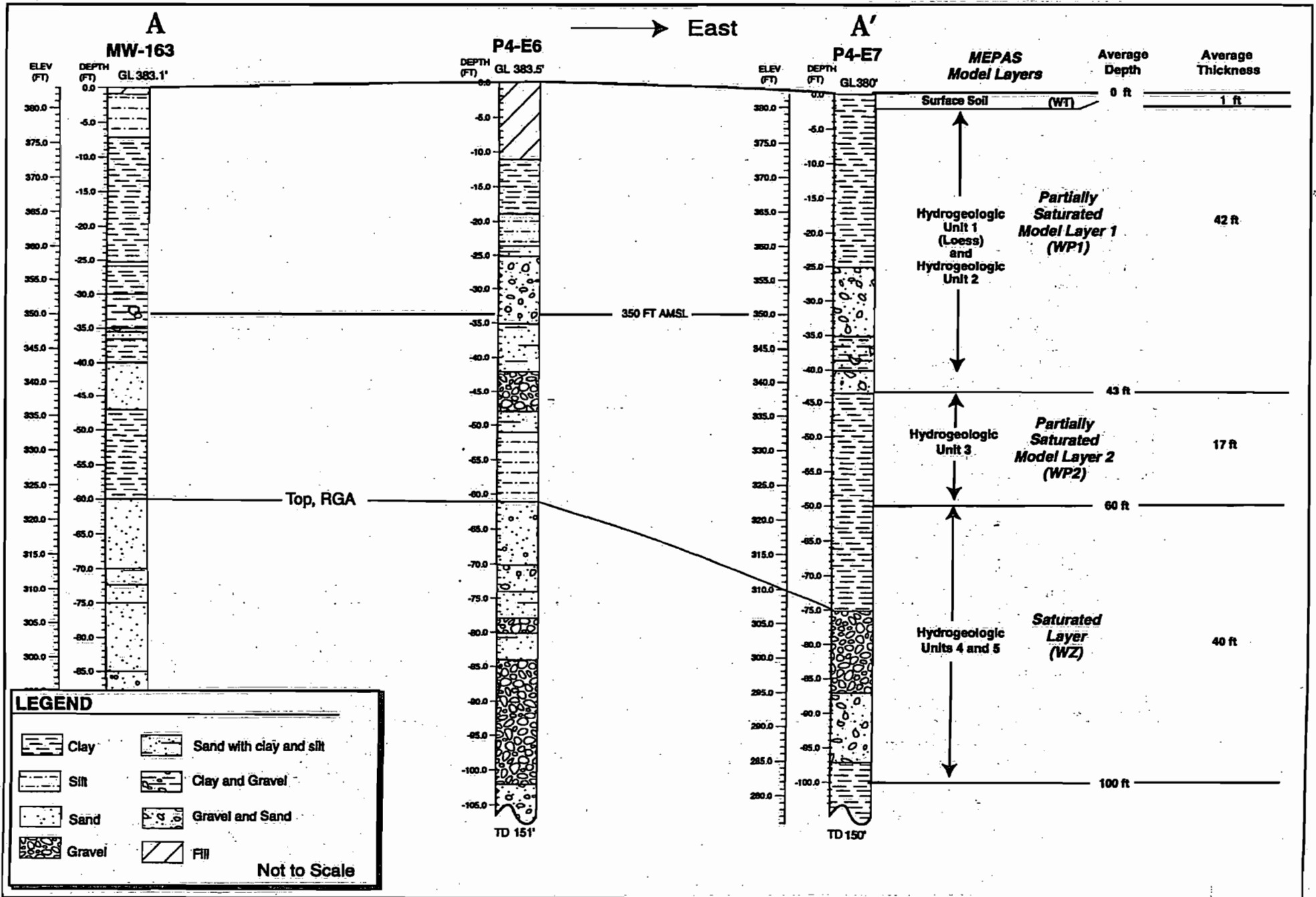


Fig. B.7. Cross-Section A-A' Showing MEPAS Model Layer Designations for Solid Waste Management Unit 99

Table B.5. Development of source terms for SWMU 99

Contaminant	Initial source concentration		Length parallel to flow direction (ft)	Width perpendicular to flow direction (ft)	Thickness (ft)	Contaminant inventory calculation for MEPAS			Notes
						Volume (cm ³)	Bulk density (g/cm ³)	Inventory (g or Ci)	
Surface soil									
Aluminum	14,100	Mg/kg	305	190	1	1.64E+9	1.48	3.42E+7	Detected above screening levels in one boring, 099-005, in 0-3 ft sample
Barium	2,470	Mg/kg	205	215	1	1.25E+9	1.48	4.56E+6	Detected above screening levels in 0-1 ft sample from one boring, 099-014
Benzo(b)fluoranthene	5.7	Mg/kg	300	115	1	9.77E+8	1.48	8.24E+3	Detected above screening levels in 0-1 ft sample from one boring, 099-004
Chromium	45.7	Mg/kg	150	110	1	4.67E+8	1.48	3.16E+4	Detected above screening levels in 0-1 ft sample in one boring, 099-016
Lithium	11.6	Mg/kg	315	375	1	3.34E+9	1.48	5.74E+4	Detected in western portion of SWMU 99 (No screening levels available for lithium or strontium)
Strontium	514	Mg/kg						2.54E+6	
Neptunium-237	12.8	pCi/g	90	190	1	4.84E+8	1.48	9.173E-3	Detected above screening levels in surface soils from one boring, 082-014
Uranium-234	16.4	pCi/g						1.175E-2	
Uranium-238	51.7	pCi/g						3.705E-2	
Technetium-99	49.4	pCi/g	315	331	1	2.95E+9	1.48	2.159E-1	Detected above screening levels in two surface soil source areas located inside the fence. The smaller source was centered around boring 082-014 and had a maximum concentration of 2650 pCi/g. The second source encompasses two borings: 099-001 and 099-004.
	2650	pCi/g	90	190	1	4.84E+8	1.48	1.899E+0	

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Table B.5. (Continued)

Contaminant	Initial source concentration		Length parallel to flow direction (ft)	Width perpendicular to flow direction (ft)	Thickness (ft)	Contaminant inventory calculation for MEPAS			Notes
						Volume (cm ³)	Bulk density (g/cm ³)	Inventory (g or Ci)	
Subsurface soil—partially saturated zone 1 (WP1)									
Aluminum	18400	Mg/kg	550	185	37	1.07E+11	1.46	2.86E+9	Total of two source areas centered around 11 borings, detected between 1–38 ft bgs
Chromium	79.1	Mg/kg	415	150	6	1.06E+10	1.46	1.22E+6	Total of 2 source areas centered around two borings: 099-019 in the 22–25 ft bgs sample and 099-06 in the 35–38 ft bgs sample
Cobalt	27.3	Mg/kg	440	500	3	1.87E+10	1.46	7.45E+5	Detected above screening levels in the 14–17 ft bgs sample from boring 099-001
Lithium	13.8	Mg/kg	315	375	40	1.34E+11	1.46	2.70E+6	Detected in western portion of SWMU 99 (No screening levels available for lithium or strontium)
Strontium	22.2	Mg/kg						4.34E+6	
Neptunium-237	0.0049	pCi/g	125	190	19	1.28E+10	1.46	9.141E-5	Detected in historical samples from H217 and H218 from 1–20 ft bgs.
Plutonium-239	0.006	pCi/g						1.119E-4	
Uranium-238	2.4	pCi/g						4.477E-2	
Subsurface soil—partially saturated zone 2 (WP2)									
Aluminum	12,700	Mg/kg	140	145	3	1.72E+9	1.46	3.20E+7	Detected above screening levels in 099-010 from 51–54 ft bgs
Lithium	6.14	Mg/kg	315	375	17	5.69E+10	1.46	5.10E+5	Detected in western portion of SWMU 99 from 43–60 ft bgs. (No screening levels available for lithium or strontium)
Strontium	24	Mg/kg						1.99E+6	

All sources were defined using maximum detected concentrations

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were defined to cover a 315 ft by 375 ft area. The radionuclides neptunium-237, uranium-234, uranium-238, and technetium-99 were detected above screening levels in surface soils from one boring, 082-014. A rectangular source area, 90 ft by 190 ft, was used to model these contaminants. Technetium-99 was also detected above screening levels in surface soils from two additional borings, 099-001 and 099-004. Another technetium-99 source term was developed approximately 315 ft by 330 ft to model that source. All radionuclide surface soil sources are located inside the plant security fence.

Three metals, aluminum, lithium, and strontium, were present in both partially saturated zone 1 and partially saturated zone 2 soils at levels above screening values, so separate source terms were developed for each, as shown in Table B.5. The radionuclides neptunium-237, plutonium-239, and uranium-238 were detected above screening levels in subsurface soils from the CERCLA S1 borings H217 and H218 located at the former Kellogg Building site inside the plant security fence. A 125 ft by 190 ft source area centered around these borings was used to model these contaminants. Chromium was detected at two borings located inside the plant security fence, 099-019 in the 22–25 ft bgs sample, and 099-06 in the 35–38 ft bgs sample. The two source areas were combined to create a single source area 415 ft by 150 ft and 6 ft thick. Cobalt was detected in one boring, 099-001, at a depth between 1–17 ft bgs. A source area 440 ft by 500 ft and 3 ft thick was defined to encompass this sample. Lithium and strontium were identified as present in subsurface soils at SWMU 99. As with the surface soil sources, lithium and strontium source areas were defined to cover a 315 ft by 375 ft area in partially saturated zone 1 (the entire 40-ft interval) and in partially saturated zone 2 (the entire 17-ft thickness).

Table B.6 provides the results of MEPAS modeling for SWMU 99. This table lists maximum concentrations of each source contaminant (and, in the case of the radionuclides, their daughter products) expected to reach the two receptor locations. Results indicate that the Kellogg Building and leaching fields are not contributors of trichloroethene contamination. The sampling conducted west of the Kellogg Building in the vicinity of boring 082-014 indicates a source of radionuclide contamination may be contributing to groundwater contamination in the area. However, the MEPAS modeling indicates that the elevated technetium-99 concentrations in the UCRS soils in the vicinity of this boring will not result in RGA groundwater concentrations exceeding 900 pCi/L at the fence or the DOE property boundary.

B.5 SWMU 193

Two model layers, one partially saturated and one saturated, were delineated at SWMU 193. The partially saturated layer includes the loess deposits making up HU 1, the permeable but discontinuous sand and gravel lenses of the UCRS, and a silty clay aquitard HU 3 (1–68 ft bgs). The saturated layer consists of the RGA and extends from 68 ft to 93 ft bgs. A cross-section showing the depths of these layers at the unit is presented in Fig. B.8. The travel distance from the source to each downgradient exposure point is 3000 ft to the PGDP security fence and 7400 ft to the DOE property boundary.

Surface and subsurface soil data provided by the WAG 28 RI and the Northeast Plume Investigation (comprised of the site evaluation of SWMUs 193 and 194 and the Groundwater Phase IV Investigation) were used to develop the source terms and inventories for the site contaminants. Table B.7 presents the source terms used in the MEPAS modeling for SWMU 193. Three metals (chromium, lithium, and strontium) and one organic [benzo(h,g,i)perylene] were identified as present above screening levels in surface soils at SWMU 193. No background values are available for lithium and strontium at PGDP, so all detected values were used to develop their source volumes. Because lithium and strontium were widespread across the unit, their source areas were assumed to be equal to the total SWMU area.

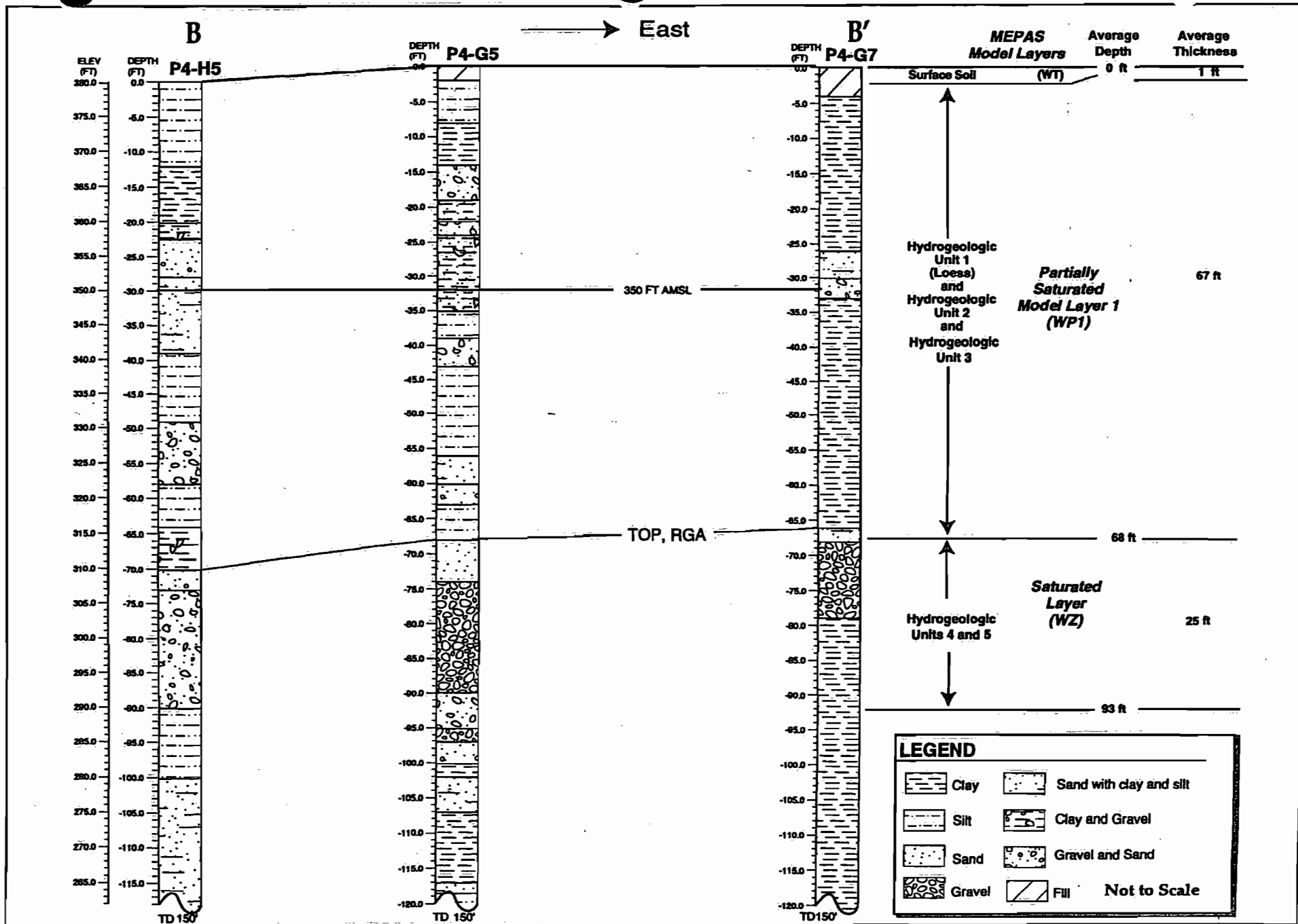
Table B.6. MEPAS results for SWMU 99

Source	Constituent (Daughter products are denoted with an asterisk)	PGDP security fence		DOE boundary property		Source location relative to plant fence
		Potential maximum conc. (mg/L or pCi/L)	Time (years)	Potential maximum conc. (mg/L or pCi/L)	Time (years)	
Surface soil	Aluminum	0	10001-20002	0	10001-20002	Outside
	Barium	0	10001-20002	0	10001-20002	Outside
	Benzo(b)fluoranthene	0	10001-20002	0	10001-20002	Inside
	Chromium	2.08E-18	9904-15654	1.081E-27	9950-15654	Outside
	Lithium	5.632E+0	78.1	1.715E-2	89.7	Outside
	Neptunium-237	4.985E+0	249	8.428E-1	356	Inside
	*Protactinium-233	4.985E+0	249	8.428E-1	356	
	*Uranium-233	5.405E-3	249	1.306E-3	356	
	*Thorium-229	6.675E-5	266	2.168E-5	356	
	*Radium-225	6.673E-5	266	2.168E-5	356	
	*Actinium-225	6.671E-5	266	2.167E-5	356	
	Strontium	2.214E+0	8952.5	3.581E-4	9898.6-11953	
	Technetium-99	1.81E+2	1570	2.736E-1	2247	Inside
	Uranium-234	0	7880-17881	0	8387-17881	Inside
	*Thorium-230	0	7880-17881	0	8387-17881	
	*Radium-226	0	7880-17881	0	8387-17881	
	Uranium-238	0	7861-17862	0	8367-17862	Inside
	*Thorium-234	0	7861-17862	0	8367-17862	
	*Uranium-234	0	7861-17862	0	8367-17862	
	*Thorium-230	0	7861-17862	0	8367-17862	
	*Radium-226	0	7861-17862	0	8367-17862	
	*Radon-222	0	7861-17862	0	8367-17862	
	*Lead-210	0	7861-17862	0	8367-17862	
	*Bismuth-210	0	7861-17862	0	8367-17862	
*Polonium-210	0	7861-17862	0	8367-17862		

Table B.6. (Continued)

Source	Constituent (Daughter products are denoted with an asterisk)	PGDP security fence		DOE boundary property		Source location relative to plant fence
		Potential maximum conc. (mg/L or pCi/L)	Time (years)	Potential maximum conc. (mg/L or pCi/L)	Time (years)	
UCRS	Aluminum	0	10001-20002	0	10001-20002	Outside
	Chromium	9.397E-20	9904-15655	2.039E-26	9997-15655	Inside
	Cobalt	3.612E-5	9890-13140	2.433E-6	9919-13140	Inside
	Lithium	4.686E+1	67	7.217E-1	95.5	Outside
	Neptunium-237	3.86E-2	300	6.887E-3	393	Inside
	*Protactinium-233	3.86E-2	300	6.887E-3	393	
	*Uranium-233	5.052E-5	300	1.179E-5	393	
	*Thorium-229	7.087E-7	300	2.162E-7	393	
	*Radium-225	7.085E-7	300	2.162E-7	393	
	*Actinium-225	7.083E-7	300	2.161E-7	393	
	Plutonium-239	1.229E-10	9948-13948	2.410E-19	9904-13948	
	Strontium	3.782E+0	8952.5	6.118E-4	9899-15655	Outside
	Uranium-238	0	7861-17862	0	8367-17862	Inside
	*Thorium-234	0	7861-17862	0	8367-17862	
	*Uranium-234	0	7861-17862	0	8367-17862	
	*Thorium-230	0	7861-17862	0	8367-17862	
	*Radium-226	0	7861-17862	0	8367-17862	
	*Radon-222	0	7861-17862	0	8367-17862	
	*Lead-210	0	7861-17862	0	8367-17862	
	*Bismuth-210	0	7861-17862	0	8367-17862	
*Polonium-210	0	7861-17862	0	8367-17862		

If source is located inside fence, distances of 700 ft and 4800 ft, respectively, were used for the fence and the property boundary. If outside fence, distances of 10 ft and 4500 ft were used.



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Fig. B.8. Cross-Section B-B' Showing MEPAS Model Layer Designations for Solid Waste Management Unit 193

Table B.7. Development of source terms for SWMU Unit 193

Contaminant	Initial source concentration	Length parallel to flow direction (ft)	Width perpendicular to flow direction (ft)	Thickness (ft)	Contaminant inventory calculation for MEPAS			Notes	
					Volume (cm ³)	Bulk density (g/cm ³)	Inventory (g)		
Surface soil									
Chromium	88.7 mg/kg	250	250	1	1.77E+9	1.48	2.32E+5	Chromium detected above background in one boring (193-023) from 0-1 ft bgs.	
Lithium	12.5 mg/kg	1970	2360		1.32E+11		2.44E+6	7.62E+7	Lithium and strontium source assumed to cover entire SWMU area
Strontium	391 mg/kg								
Subsurface soil—partially saturated zone (wp1)									
Aluminum	15,500 mg/kg	1970	2360	60	7.90E+12	1.46	1.79E+11	Aluminum, lithium, and strontium sources assumed to encompass entire SWMU area and full thickness of WP1	
Lithium	11.2 mg/kg						1.29E+8		
Strontium	195 mg/kg						2.25E+9		
Cadmium	13.2 mg/kg	440	440	1	5.48E+9		1.06E+5	Cadmium detected above screening levels in one boring, 193-2, at depth of 15.5 ft	
Chromium	398 mg/kg	2400	1960	8	1.07E+12		6.19E+8	Chromium detected above screening levels in three borings, 193-1, 193-5, and 193-049, at depths between 15-23 ft	
Cobalt	86.1 mg/kg	240	260	3	5.3E+9		6.66E+5	Cobalt detected above screening levels in one boring, 193-036, at a depth of 2-5 ft bgs	
Manganese	2270 mg/kg	920	640	8	1.33E+11		4.42E+8	Manganese detected above screening levels in two borings, 193-033 and 193-036, at depths between 2-10 ft bgs	

Notes:

All sources were developed using the maximum detected concentrations within each model layer.

Benzo(h,g,i)perylene was also detected above screening levels in surface soils. It could not be modeled because the MEPAS model does not include it in its contaminant list.

Chromium was detected above screening levels in one boring (193-023). A rectangular source area of 250 ft was used for modeling chromium in surface soils. The more mobile form of chromium (chromium VI) was modeled to provide the most conservative results. Benzo(h,g,i)perylene is not included in the chemical database for MEPAS and so could not be modeled.

MEPAS source terms were also developed for several subsurface soil contaminants. Seven metals were detected above screening levels in the partially saturated zone. Three metals, aluminum, lithium, and strontium, were detected throughout the SWMU 193 area and so were assumed to be present across the entire SWMU and to extend throughout most of model layer 1 to the top of the HU3 unit (60 ft). Another UCRS soil contaminant, cadmium, was detected above screening levels in one boring, 193-2, at a depth of 15.5 ft bgs. It was assumed to be present at its maximum detected concentration (13.2 mg/kg) in a 440-ft by 440-ft area encompassing the boring. Chromium (maximum 398 mg/kg) was detected above screening levels in three borings (193-1, 193-5, and 193-049) in the 15- to 23-ft interval. Hence, a rectangular source area (2400 ft by 1960 ft) surrounding these three borings was used to model chromium in partially saturated layer 1. Cobalt was detected above screening levels in one boring, 193-036, at a sample depth of 2-5 ft bgs. The source was defined as a rectangular area 240 ft by 260 ft and 3 ft thick. Manganese was detected above screening levels 2-10 ft bgs in two borings, 193-033 and 193-036. The manganese source was assumed to be 8 ft thick and to extend around these borings in a rectangular area 920 ft by 640 ft. It was assumed that all site contaminants were distributed homogeneously at their maximum detected concentrations across their source areas. The results of the MEPAS modeling for SWMU 193 are presented in Table B.8. These results indicate no significant sources of groundwater contamination are present at the unit.

Table B.8. MEPAS results for SWMU 193

Source	Constituent	PGDP security fence		DOE boundary property	
		Potential maximum concentration (mg/L)	Time (years)	Potential maximum concentration (mg/L)	Time (years)
Surface Soil	Chromium	2.018E-3	5929	1.194E-3	7961
	Lithium	2.085E+0	45.8	1.169	60.3
	Strontium	2.524E-1	9854-10834	1.546E-4	9846-13283
UCRS	Aluminum	0	1-10,001	0	1-10,001
	Cadmium	0	879-10001	0	9990-10001
	Chromium	3.803E+0	5929	2.133	7744
	Cobalt	3.562E-2	939	2.083E-2	1281
	Lithium	3.805E+1	48.8	38.09	69.8
	Manganese	5.11E+0	2655	3.651	3624
	Strontium	7.453E+0	9854-10834	4.565E-3	9846-13283

B.6 SWMU 194

The former leach fields associated with SWMU 194 are located above the slope of the Porters Creek Clay terrace. None of the borings drilled at SWMU 194 were extended beyond approximately 30 ft bgs, so lithologic logs for deep borings located in the surrounding area were used to develop the conceptual site model. Two model layers (one partially saturated and one saturated) were delineated at SWMU 194

(see Fig. B.9). The partially saturated layer extends to a depth of 55 ft bgs and includes the loess deposits making up HU 1; the permeable and discontinuous sand and gravel lenses of the Terrace Gravel and of the UCRS; and a thin, silty clay aquitard HU 3. The saturated layer includes the RGA and extends from an average depth of 55 ft to 85 ft bgs. The travel distances from the source to each downgradient exposure point are 10 ft to the PGDP security fence and 8700 ft to the DOE property boundary. (SWMU 194 is located outside the security fence, so a small, non-zero value was used.) The direction of groundwater flow in the RGA was assumed to be north, based on potentiometric maps of the area.

The WAG 28 RI soil data and data from the 1995 site evaluation at SWMU 194 were used to develop the source terms and inventories for the SWMU 194 site contaminants. Table B.9 presents the source terms used in the MEPAS modeling for SWMU 194. Four metals were identified as present above screening levels in subsurface soils: lithium, strontium, aluminum, and chromium. No background values are available for lithium and strontium at PGDP, so all detected values were used to develop their source volumes. Because lithium and strontium were widespread across the area (detected in 15 and 16 samples, respectively), their source areas were assumed to be equal to the total SWMU area and to extend beneath the terrace gravel to a depth of 40 ft bgs (top of HU3). Aluminum was detected above screening levels in three samples in boring 194-010 at depths 2–15 ft bgs. A 250-ft by 250-ft source area, centered around the boring and extending from 1 to 17 ft bgs, was used for modeling aluminum. Chromium was detected above screening levels at depths 15–30 ft bgs in five samples from four borings at the unit: 194-02, 194-03, 194-10, and 194-11. A rectangular source area 650 ft by 710 ft and extending from 11 ft to 40 ft bgs in the partially saturated layer was used for modeling chromium. The more mobile form of chromium (chromium VI) was modeled to provide the most conservative results. It was assumed that all four contaminants were distributed homogeneously at their maximum detected concentrations across their source areas. The results of the MEPAS modeling conducted for SWMU 194 are presented in Table B.10. These results indicate no significant sources of groundwater contamination are present at the SWMU 194 leach fields.

B.7 AOC 204

The conceptual site model for AOC 204 is based on lithologic logs for shallow borings installed during the WAG 28 investigation and on logs for deep borings installed in the area during the Groundwater Phase IV investigation (DOE 1995b). Figure B.10 presents a geologic cross-section used to delineate the model layers. Three model layers (two partially saturated and one saturated) were delineated at AOC 204. These layers include the loess deposits making up HU 1 and the permeable but discontinuous sand and gravel lenses making up HU2 (1–52 ft); the silty clay aquitard designated HU 3 (52–67 ft); and the sandy gravel deposits of the RGA (67–95 ft). The travel distances from the source to each downgradient exposure point are 10 ft to the PGDP security fence and 4500 feet to the DOE property boundary located to the east. (AOC 204 is located outside the security fence, so a small, non-zero value was used.)

Subsurface soil data were provided by the WAG 28 RI as well as by historical investigations conducted in 1995 (DOE 1995b). For WAG 28 data collected at AOC 204, no soil contaminants exceeded screening levels. However, historical groundwater and soil data indicate that there is subsurface trichloroethene contamination located within the boundaries of AOC 204. The likely source is a small historical spill in Outfall 011 (DOE 1995a). Based on the historical data at borings 204-19, 204-15, and 204-20, one subsurface contaminant, trichloroethene, was retained for MEPAS modeling at AOC 204 (Table B.11). The previous sampling at AOC 204 found trichloroethene at a maximum concentration of 0.123 mg/kg in the soil at boring 204-19. Earlier investigations concluded the trichloroethene source had a small areal extent, approximately 100 ft × 100 ft, and extended to a depth of 30 ft (DOE 1995a). The source used for the MEPAS modeling at AOC 204 is larger than this in order to encompass all three borings while allowing for the rectangular-shaped source area required by the model. The source covers an area of 445 ft by 345 ft and extends to a depth of 35 ft.

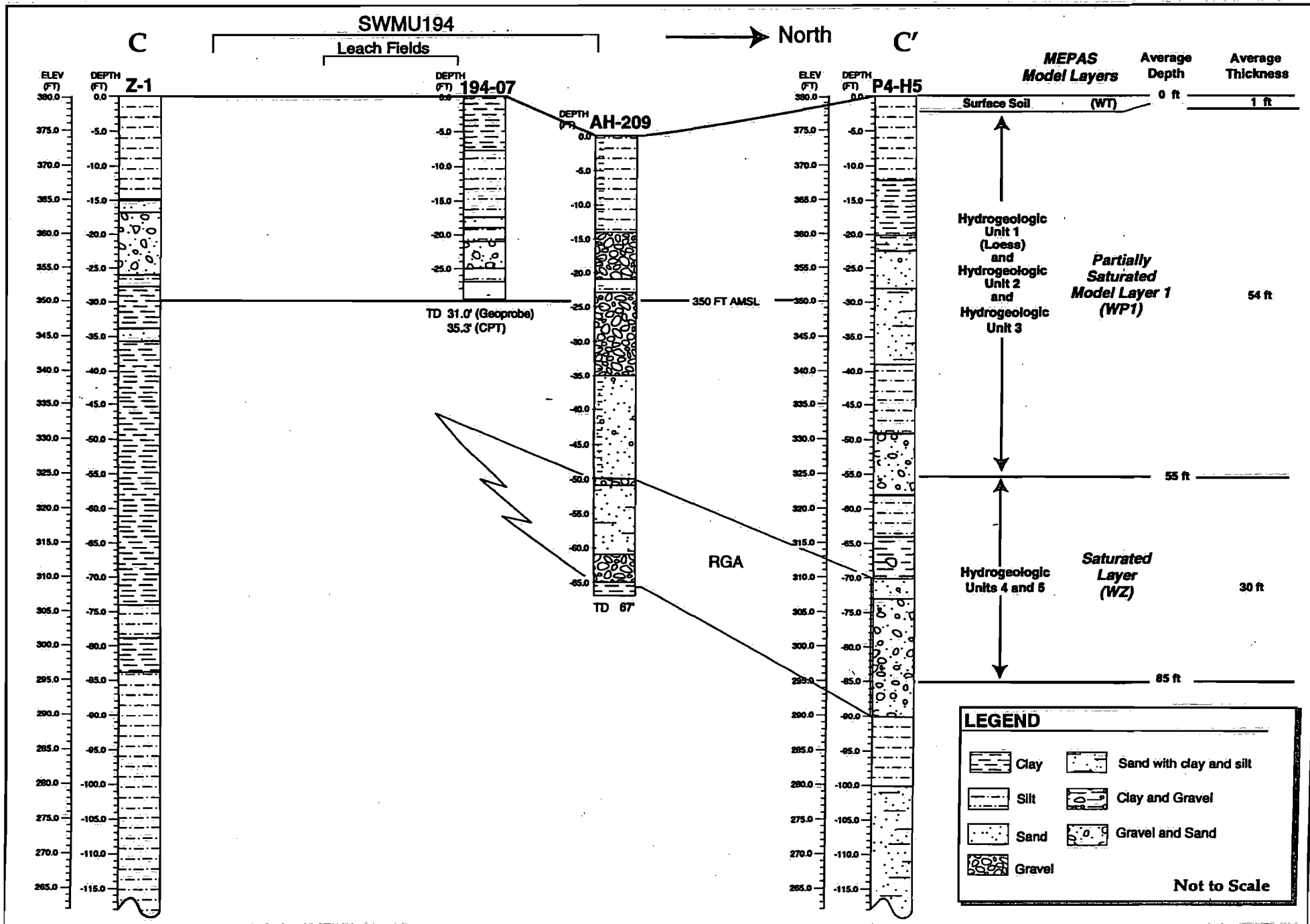


Fig. B.9. Cross-Section C-C' Showing MEPAS Model Layer Designations for Solid Waste Management Unit 194

Table B.9. Development of source terms for SWMU 194

Contaminant	Initial source concentration	Length parallel to flow direction (ft)	Width perpendicular to flow direction (ft)	Thickness (ft)	Contaminant inventory calculation for MEPAS			Notes
					Volume (cm ³)	Bulk density (g/cm ³)	Inventory (g)	
Subsurface soil								
Aluminum	14500 mg/kg	250	250	16	2.83E+10	1.49	6.12E+8	Three detections above screening levels between 2–15 ft bgs in boring 194-010. Extended source from top of layer to top of first clean sample (1–17 ft bgs).
Chromium	103 mg/kg	650	710	29	3.79E+11	1.49	5.82E+7	Detected above screening levels in five samples between 15–30 ft bgs in four borings: 194-02, 194-03, 194-10, and 194-11. Source extends from base of nearest clean sample to top of HU3 (11–40 ft bgs).
Lithium	9 mg/kg	1730	1050	39	2.01E+12	1.49	2.69E+7	Detected in 15 of 20 samples throughout the SWMU at depths between 2–30 ft. Source encompasses entire SWMU area (1,816,452 ft ²) and extends from top of layer to average depth of top of HU3 (from 1 to 40 ft bgs)
Strontium	26 mg/kg	1730	1050	39	2.01E+12	1.49	7.77E+7	Detected in 16 of 20 samples throughout SWMU at depths between 2–30 ft. Source encompasses entire SWMU area (1,816,452 ft ²) and extends from top of layer to average depth of top of HU3 (from 1 to 40 ft bgs)

Notes:

All sources were defined using the maximum detected concentrations within the model layer.
 The bulk density value used was for the partially saturated zone because all sources are located within the Model Layer WP1
 Iron was detected above screening values in only one sample and so was not modeled.

Table B.10. MEPAS results for SWMU 194

Source	Constituent	PGDP security fence		DOE boundary property	
		Potential maximum concentration (mg/L)	Time (years)	Potential maximum concentration (mg/L)	Time (years)
UCRS	Aluminum	0	0-10,001	0	0-10,001
	Chromium	7.24E+1	3,783	1.7E-1	7728
	Lithium	6.7E+1	19.7	7.57E+0	52
	Strontium	1.05E+1	55.81	5.167E-4	9924-11832

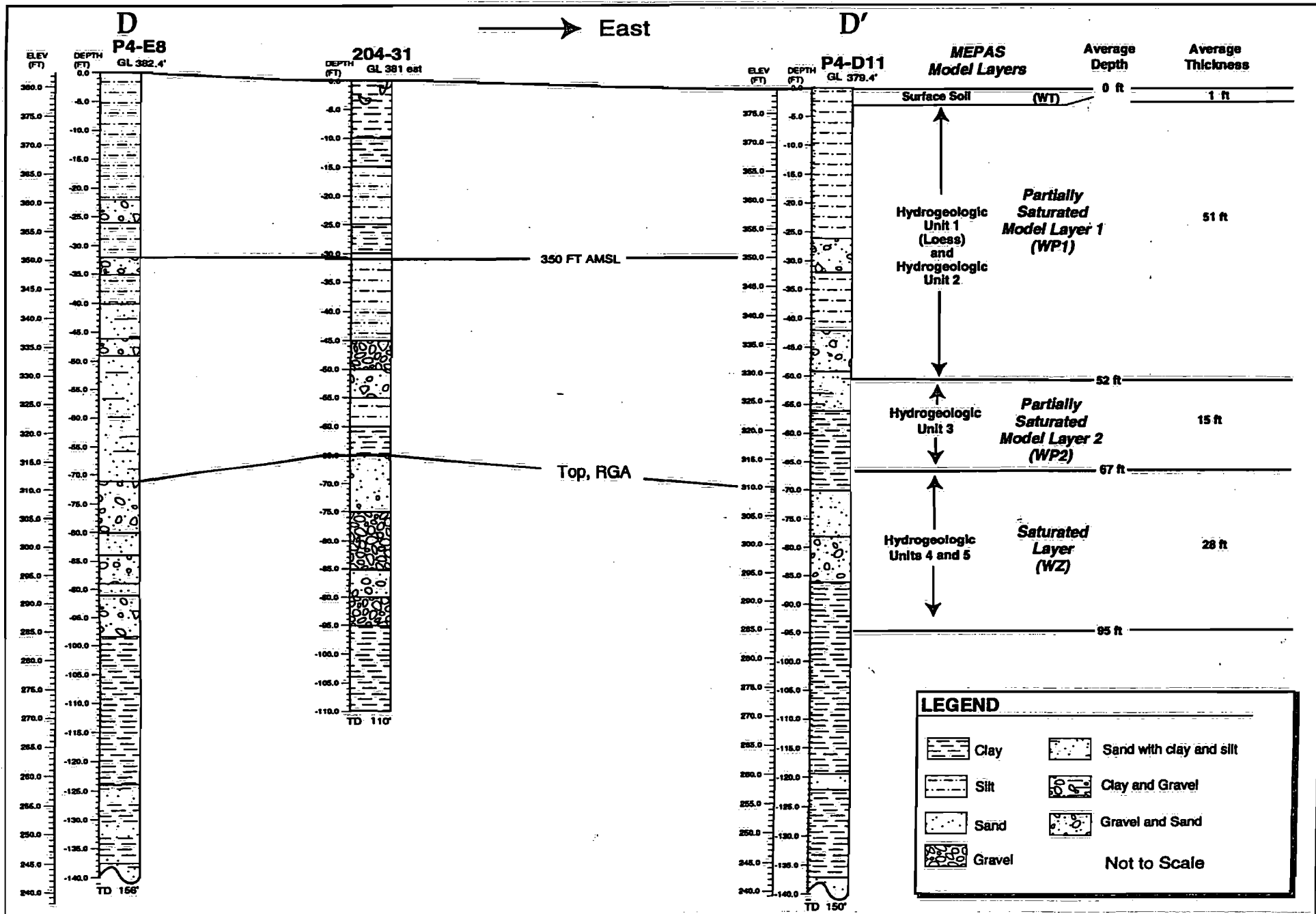


Fig. B.10. Cross-Section D-D' Showing MEPAS Model Layer Designations for Area of Concern 204

Table B.11. Development of source terms for AOC 204

Contaminant	Initial source concentration	Length parallel to flow direction (ft)	Width perpendicular to flow direction (ft)	Thickness (ft)	Contaminant inventory calculation for MEPAS			Notes
					Volume (cm ³)	Bulk density (g/cm ³)	Inventory (g)	
Subsurface soil								
Trichloroethene	0.123 mg/kg	445	345	30	1.3E+11	1.46	2.34E+4	Detected in three historical borings: 204-15, 204-19, and 204-20 at depths between 5 –35 ft bgs.

Notes:

No contaminants passed initial screening from the WAG 28 Remedial Investigation sampling data. The trichloroethene source was defined using historical data. The source was developed using the maximum detected concentration within the model layer.

Results of the MEPAS modeling for AOC 204 are presented in Table B.12. The MEPAS modeling indicates that trichloroethene concentrations in the UCRS soils at AOC 204 will not result in RGA groundwater concentrations exceeding MCLs at the DOE property boundary. MEPAS cannot accurately assess the trichloroethene concentration in RGA groundwater at the PGDP security fence. Because it is a flux boundary condition model, it tends to overestimate concentrations under near-field conditions (i.e., when the receptor location is too close to the source). The maximum concentration listed in Table B.12 thus represents a conservative estimate of the maximum concentration reaching the PGDP security fence.

Table B.12. MEPAS results for AOC 204

Source	Constituent	PGDP security fence		DOE boundary property	
		Potential maximum concentration (mg/L)	Time (years)	Potential maximum concentration (mg/L)	Time (years)
UCRS	Trichloroethene	1.428E+1*	110.5	3.66E-3	163

*At the security fence, the computed maximum concentration is greater than the designated initial concentration at the source of 1.428E-07 g/mL. The current receptor is located too close to the source, creating a near-field condition that cannot be properly assessed by a flux boundary condition model. Concentrations have been truncated to the initial dissolved concentration because of near-field conditions.

REFERENCES

- Battelle. 1995. *Multimedia Environmental Pollutant Assessment System (MEPAS)*, Version 3.1. Battelle Pacific Northwest Laboratory, Battelle Memorial Institute, Richland, WA.
- CH2M Hill. 1992. *Results of the Site Investigation, Phase II, Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, KY/SUB/13B-97777CP-03/1991/1. CH2M Hill Southeast, Inc., Oak Ridge, TN.
- DOE (U.S. Department of Energy). 1995a. *Background Concentrations and Human Health Risk-Based Screening Criteria for Metals in Soil at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1417&D1. U.S. Department of Energy, Paducah, KY.
- DOE. 1995b. *Background Levels of Selected Radionuclides and Metals in Soils and Geologic Media at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1586&D2. U.S. Department of Energy, Paducah, KY.
- DOE 1995c. *Northeast Plume Preliminary Characterization Summary Report*, DOE/OR/07-1339/V1&D1. U.S. Department of Energy, Paducah, KY.
- DOE. 1995d. *Final Site Evaluation Report for the Outfall 010, 011 and 012 Areas, Paducah Gaseous Diffusion Plant Paducah, Kentucky*, DOE/OR/07-1434&D1. U.S. Department of Energy, Paducah, KY.
- DOE. 1996. *Methods for Conducting Human Health Risk Assessments and Risk Evaluations at the Paducah Gaseous Diffusion Plant*, DOE/OR/07-1506&D1. U.S. Department of Energy, Paducah, KY.
- EPA (U.S. Environmental Protection Agency). 1996. *BIOSCREEN Natural Attenuation Decision Support System, User's Manual, Version 1.3*. Office of Research and Development, U.S. Environmental Protection Agency, Washington, DC.
- USDA (U.S. Department of Agriculture). 1976. *Soil Survey of Ballard and McCracken Counties, Kentucky*. Soil Conservation Service, U.S. Department of Agriculture, Paducah, KY.
- Whelan, G., Buck, J. W., Strenge, D. L., Droppo, J. G., Jr., and Hoopes, B. L. 1992. "Overview of the Multimedia Environmental Pollutant Assessment System (MEPAS)," *Hazardous Waste and Hazardous Materials*, Vol. 9, No. 2.

APPENDIX C
SAS PROGRAMS

APPENDIX C

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Section 1

Data Consolidation Program

```

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%MACRO READIN(DS1,LOC) ;
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set in.&ds1 ;
format _char_ _numeric_ ;
informat _char_ _numeric_ ;
length swmu $15 ;
swmu="&loc" ;
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olderror=input(rad_err,best12.) ;
oldlimit=input(detect_1,best12.) ;
dilute=input(dilu_fac,best12.) ;
east=input(admin_ea,best12.) ;
north=input(admin_no,best12.) ;
drop results rad_err detect_1 dilu_fac admin_ea admin_no ;
run ;
%MEND ;

%readin(mwag193,SWMU 193) ;
%readin(mwag204,AOC 204) ;
%readin(mwag99,SWMU 99) ;
%readin(mwag99e,SWMU 99) ;
%readin(swmu194,SWMU 194) ;

data new ; set mwag193 mwag204 mwag99 mwag99e swmu194 ;
length location $10 ;

if sta_name='193-049' then do ;
  smp_strt=input(substr(proj_sam,10,2),best12.) ;
  smp_end=input(substr(proj_sam,10,2),best12.) ;
end ;

if proj_sam='193041WA140C' then do ;
  smp_strt=117 ; smp_end=117 ;
end ;
if proj_sam='193041WA085C' then do ;
  smp_strt=87 ; smp_end=87 ;
end ;
if proj_sam='193041WA080C' or proj_sam='193041WD080C' then do ;
  smp_strt=82 ; smp_end=82 ;
end ;
if proj_sam='193041WA025C' then do ;
  smp_strt=62 ; smp_end=62 ;
end ;
if proj_sam='193041WA090C' then do ;
  smp_strt=92 ; smp_end=92 ;
end ;
if proj_sam='193041WA095C' then do ;
  smp_strt=97 ; smp_end=97 ;
end ;
if sta_name='099-035' and smp_strt=64 then smp_strt=67 ; * Per Doug Combs ;

if sta_name in ('099-037','099-038') then swmu='SWMU 193' ;

if swmu='SWMU 99' then do ;
  if sta_name in ('MW258','099-019','099-022','099-025','099-029') then
    location='SWMU 99B' ;
  else location='SWMU 99A' ;
end ;
else if swmu='SWMU 193' then do ;
  if sta_name in ('P4-G5','099-037','193-022','193-023','193-025') then
    location='SWMU 193B' ;
  else if sta_name in ('MW108','P4-H5','P4-H6','PZ109','PZ110','PZ114','PZ115',
    'PZ117','PZ118','099-038','193-026','193-028','193-029','193-030','193-031',
    '193-032','193-041','193-049') then location='SWMU 193A' ;
  else location='SWMU 193C' ;
end ;
else if swmu='SWMU 194' then location='SWMU 194' ;
else if swmu='AOC 204' then location='AOC 204' ;

proc sort nodups ; by ana_meth ana_type lab_code matrix lab_meth d_analyz
lab_samp cat_rslt chemical med_type paramtr smp_type sta_name sta_type units
c_lab sm d_collec non_comp proj_sam rslt_pre smp_end smp_strt validati
rsltqual smp_meth t_collec assessme swmu oldrslts olderror oldlimit
dilute east north location ;

```

```

data hist ; length ana_meth ana_type lab_code matrix lab_meth d_analyz lab_samp
matrix lab_proc lab_tst_rep_no sdg_num $20 ;
set in.w28hist ;
length location $10 ;
format char_numeric ;
informat char_numeric ;

* drop UCRS stations ;
if sta_name in ('204-029','099-032','MW352','MW353') then delete ;

if index(risk_cat,'WATER')>0 and med_type=' ' then med_type='WG' ;
else if index(risk_cat,'SOIL')>0 and med_type=' ' then med_type='SO' ;

if index(rsltqual,'1')>0 then rsltqual=rslt_pre ;

if lab_samp='FS' then delete ;
oldrslts=input(results,best12.) ;
olderror=input(rad_err,best12.) ;
oldlimit=input(detect_1,best12.) ;

hist='Yes' ;

location=swmu ;

drop results rad_err detect_1 dilu fac admin_ea admin_no sample_i
cat_rslt data_rel avg_per c_statio event_na fld_proc sig_digi
smp_cond sum_meth biol_mat interval meas_met purged_u purged_v
rf_elv_t rf_elv_v sex smp_devi smp_grou sta_grou sub_even t_end
t_start taxon_co assessme date_ext lab_proc lab_tst_rep_no c_lab_sm ;
proc sort nodups ; by ana_meth ana_type lab_code matrix lab_meth d_analyz
lab_samp sdg_num location risk_cat sta_name proj_sam d_collec smp_strt smp_end
chemical rslt_pre rsltqual units d_end d_start med_type paramtr smp_type
sta_type c_meas c_sample non_comp validati dataqual smp_meth t_collec oldrslts
olderror oldlimit hist location ;

run ;

data all ; set new hist ;

* drop UCRS stations ;
if sta_name in ('204-029','099-032','MW352','MW353') then delete ;
if sta_name='099-035' and smp_strt=67 then delete ;
if sta_name='193-028' and smp_strt=37 then delete ;
if sta_name='204-031' and smp_strt=52 then delete ;
if sta_name in ('193-049','193-022','099-005','099-008','099-011','099-014',
'099-030','099-031','099-033','099-019','099-022','099-025','099-029') and
med_type='WG' then delete ;

if hist=' ' then do ;
if proj_sam='MW' then sampid=substr(proj_sam,1,6)||substr(proj_sam,8) ;
else sampid=substr(proj_sam,1,7)||substr(proj_sam,9) ;
end ;
else do ;
sampid=proj_sam ;
end ;

* Delete the following ;
if validati='R' then delete ;

if oldrslts=. then delete ; * Delete Q-qualified data per Brenda Shaw ;

if chemical='Uranium' and units='pCi' then delete ; * Use isotopic results ;

if chemical in ('Alkalinity','Bicarbonate as CaCO3','Carbonate as CaCO3',
'Chemical Oxygen Demand (COD)','Total Organic Carbon (TOC)','pH',
'Alkalinity M','Alkalinity P','Barometric Pressure Reading','Conductivity',
'Depth to Water','Dissolved Organic Carbon','Dissolved Oxygen','Dissolved Solids',
'Specific Conductivity (PIP)','Suspended Solids','Temperature',
'Total Petroleum Hydrocarbon','Turbidity') or units in ('mV','none','wt %')
then delete ;

if chemical='Carbon tetrachloride' then chemical='Carbon Tetrachloride' ;
if chemical='4-Bromophenyl-phenylether' then chemical='4-Bromophenyl phenyl ether' ;
if chemical='4-Chlorophenyl-phenylether' then chemical='4-Chlorophenyl phenyl ether' ;
if chemical='Benzo(a)anthracene' then chemical='Benz(a)anthracene' ;
if chemical='Benzo(g,h,i)perylene' then chemical='Benzo(ghi)perylene' ;
if chemical='Benzyl Butyl Phthalate' then chemical='Butyl benzyl phthalate' ;
if chemical='Bis(2-chloroethoxy)methane' then chemical='bis(2-Chloroethoxy)methane' ;
if chemical='Bis(2-chloroethyl) ether' then chemical='bis(2-Chloroethyl)ether' ;
if chemical='Bis(2-chloroisopropyl) ether' then chemical='bis(2-Chloroisopropyl)ether' ;

```

```

if chemical='Bis(2-ethylhexyl)phthalate' then chemical='bis(2-Ethylhexyl)phthalate' ;
if chemical='Carbon disulfide' then chemical='Carbon Disulfide' ;
if chemical='Di-n-butyl phthalate' then chemical='Di-n-butylphthalate' ;
if chemical='Dibenzo(a,h)anthracene' then chemical='Dibenz(a,h)anthracene' ;
if chemical='Diethyl phthalate' then chemical='Diethylphthalate' ;
if chemical='Dimethyl phthalate' then chemical='Dimethylphthalate' ;
if chemical='Methylene chloride' then chemical='Methylene Chloride' ;
if chemical='Vinyl chloride' then chemical='Vinyl Chloride' ;
if chemical='2-Nitrobenzenamine' then chemical='2-Nitroaniline' ;
if chemical='3-Nitrobenzenamine' then chemical='3-Nitroaniline' ;
if chemical='4-Nitrobenzenamine' then chemical='4-Nitroaniline' ;
if chemical='4-Chlorobenzenamine' then chemical='4-Chloroaniline' ;
if chemical='4,6-Dinitro-2-methylphenol' then chemical='2-Methyl-4,6-dinitrophenol' ;
if chemical='Dimethylbenzene' then chemical='Xylene' ;

if validati in ('X','XV') then validati=rsltqual ; * For non-validated samples ;

* Assign detect status ;
if indexc(validati,'U')>0 or (ana_type='RADS' and index(validati,'A')>0)
then det_cntr=0 ;
else det_cntr=1 ;

proc sort ;
by location sta_name sampid d_collec smp_strt smp_end_ chemical units oldrslts ;

proc means noprint ;
by location sta_name sampid d_collec smp_strt smp_end_ chemical units ;
var det_cntr ;
output out=sumdet (drop=_type_ _freq_) sum=det_sum n=det_n ;

data two ; merge all sumdet ;
by location sta_name sampid d_collec smp_strt smp_end_ chemical units ;
if det_n>=2 and det_sum>=1 then do ;
if det_cntr=0 then delete ;
end ;
proc sort ; by location sta_name sampid d_collec smp_strt smp_end_ chemical units ;

proc means noprint ;
by location sta_name sampid d_collec smp_strt smp_end_ chemical units ;
var oldrslts ; id ana_meth ana_type cat_rslt lab_code matrix med_type paramtr
sta_type smp_meth east north dilute risk_cat ;
output out=alldups (drop=_type_ _freq_) max=oldrslts
maxid(oldrslts(proj_sam) oldrslts(lab_samp) oldrslts(smp_type)
oldrslts(validati) oldrslts(rslt_pre) oldrslts(rsltqual)
oldrslts(olddlimit) oldrslts(oldderror) oldrslts(det_cntr))=
proj_sam lab_samp smp_type validati rslt_pre rsltqual oldlimit olderror det_cntr ;

data wag28 ; set alldups(rename=(units=oldunits dilute=dilu_fac east=admin_ea
north=admin_no smp_end_=smp_end)) ;

* Assign anatype ;
if ana_type in ('RADS') or oldunits='pCi' then anatype='Radionuclides' ;
else if ana_type in ('ANION','METAL','WETCHEM') or chemical in ('Aluminum',
'Antimony','Arsenic','Barium','Beryllium','Cadmium','Calcium','Chromium','Silica',
'Cobalt','Copper','Cyanide','Iron','Lead','Magnesium','Manganese','Nickel',
'Mercury','Potassium','Selenium','Silver','Sodium','Thallium','Vanadium','Zinc')
then anatype='Inorganics' ;
else anatype='Organics' ;

if oldunits in ('mg/L','mg/kg','pCi/L','pCi/g') then do ;
results=oldrslts ; units=oldunits ; rad_err=olderror ; detect_l=oldlimit ;
end ;
else if oldunits='ug/L' then do ;
results=oldrslts/1000 ; units='mg/L' ; detect_l=oldlimit/1000 ;
end ;
else if oldunits='ug/kg' then do ;
results=oldrslts/1000 ; units='mg/kg' ; detect_l=oldlimit/1000 ;
end ;
else if oldunits='mg/KG' then do ;
results=oldrslts ; units='mg/kg' ; detect_l=oldlimit ;
end ;
else if oldunits in ('pCi/KG','pCi/kg') then do ;
results=oldrslts/1000 ; rad_err=olderror/1000 ; units='pCi/g' ;
end ;
proc sort ; by chemical ;

data casnum ; set cas.casnum ;
keep chemical casnum ;
proc sort ; by chemical ;

data casjoin ; merge wag28(in=a) casnum(in=b) ; by chemical ;

```



```

if a=1 ;
if chemical='Uranium' and units='mg/' then casnum=238 ;
if chemical='Phosphate as Phosphorous' then casnum=14265442 ;

if casnum in (79016,156605,156592,75014,14133767,238,7782414,1336363) or
chemical='PCB' or chemical='Uranium' then sitendet=1 ;
else sitendet=0 ;

data water ; set casjoin ;
if med_type='WG' ;
if risk_cat='MCNAIRY WATER' or
(sta_name='099-037' and smp_strt=145) or
(sta_name='099-038' and smp_strt=112) or
(sta_name='193-025' and smp_strt=162) or
(sta_name='193-028' and smp_strt>=117) or
(sta_name='193-031' and smp_strt=117) or
(sta_name='193-032' and smp_strt>=127) or
(sta_name='193-041' and smp_strt=117) then media='McNairy Groundwater' ;
else media='RGA Groundwater' ;

data sursoil ; set casjoin ;
if med_type='WG' then delete ;
if .<smp_end<=1 ;
media='Surface Soil' ;

data subsoil ; set casjoin ;
if med_type='WG' then delete ;
if .<smp_end<=15 or risk_cat='SUBSURFACE SOIL' ;
media='Subsurface Soil' ;

data in.wag28 ; set water sursoil subsoil ;

run ;

```

Section 2

Summary Statistics Preparation Programs

```

*****;
* sumstats_general.sas -> calculating summary statistics for Risk
  Assessment data in general. Calculates summary statistics
  for analytes from a "cleaned-up" data set.
*
* NOTE: For calculations of MEAN, for nonrads with nondetected conc-
  entrations, non-site-related reported nondetected concs. were
  cut in half. Site-related nondetects are reported at full
  value.
* Also, any definitions of rad nondetects (e.g., UNC > VALUE)
  should have been set up this way prior to the execution of
  this program.
*
* APPROACH: Obtain mins/maxes, frequency of detects for all analytes.
  Then determine best-fit distribution (normal/lognormal)
  and calculate MEAN and UCL95 accordingly. Rads with
  non-positive concentrations are considered to be normally
  distributed. Data with mixture of detects and nondetects
  that were determined to be lognormal were run thru the
  SAS lifereg procedure to obtain MEAN and UCL95.
*
* SPECIAL NOTES: To use this program, one must specify the values for
  the following macros (define with a %LET statement):
*
*      MACRO NAME      MEANING
*      -----
*      DATA_LOC       directory name where RA data reside
*      DS_NAME1         name of the data set (< 9 characters)
*      MEDIA1          medium analyzed (used in title only)
*      AREA1           area (OU) being analyzed (title only)
*      PROJECT         project name (title only)
*      KEEP1           list of variables to keep/evaluate
*                    from raw data set (should include
*                    ANALYSIS ANATYPE UNITS VALUE CASNUM
*                    DET_CNTR as a minimum)
*      SORTBY1         list of variables to sort by ... also
*                    is the grouping for summary stats
*                    (must be a subset of variables listed
*                    in KEEP1)
*      SORTBY2         list of variables for the final
*                    sorted data set (see optional
*                    section below)
*      DS_NAME2        data set name for final permanent SAS
*                    data set (that stores summary stats)
*
* To run this program: 1) use filename to link to this program
*                      2) define all macro variables with %LET
*                        statements
*                      3) use %inc to call this program
*
* NOTE: final data set created in same subdirectory as raw data set.
*****;

```

```

libname screen "&DATA_LOC" ;
options nonumber nodate ls=78 ps=60 ;

```

```

*****;
* Remove any temporary data sets before starting ;
*****;
proc datasets library=work memtype=data kill ;
quit ;
run ;

```

```

*****;
* First: Read in all data in order to calculate summary statistics ;
*****;
data &DS_NAME1 ;
  set screen.&DS_NAME1 ;
  keep &KEEP1 ;
run ;

```

```

proc sort data=&DS_NAME1 ;
  by &SORTBY1 ;
run ;

```

```

*****;
* Next: Take care of nonrad nondetects ;
*
* NOTE: For nonrads, will use 1/2 DL for nondetects when calc.
*       mean conc.

```

```

*
* NOTE: Will create 2nd VALUE variable (VALUE2) in order to
* calculate MEAN concentration ... to use VALUE when
* calculating minimum and maximum concentrations for
* detects and nondetects.
*****;
data &DS_NAME1 ; set &DS_NAME1 ;
*****;
* NONRADS: Change value for nondetects to 1/2 det limit ;
* only if non-site-related
*****;
if (sitendet=1 or sitendet=.) and anatype ne 'Radionuclides'
then value2=&VALUE ;

if sitendet=0 and anatype ne 'Radionuclides' then
value2=&VALUE/2 ;
label value2='Conc. used in exposure conc. estimation' ;

*****;
* Create VALUE2 for Rads: ;
*****;
if anatype='Radionuclides' then value2=&VALUE ;
run ;

*****;
* Obtain frequency of detects & mean concs. ;
*
* NOTE: use VALUE2 instead of VALUE here. ;
*****;
proc means data=&DS_NAME1 noprint n sum mean ;
by &SORTBY1 ;
id casnum ;
var det_cntr value2 ;
output out=freqdet n=n n2 sum=det sum2 mean=mean1 mean ;
data freqdet ; set freqdet ;
length x1 $3 x2 $3 freq_det $7 test $3 ;
label n= '# Samples Analyzed'
det '# Samples Detected'
freq_det='Freq. of Detection'
test='Perform Dist. Test?' ;
x1=put(det,$3.) ;
x2=put(n,$3.) ;
freq_det=compress(x1)||'|'/'||compress(x2) ;
*****;
* Based on freq. of detect., decide which analytes tested for dist. ;
*****;
length censored $3 ;
if det=0 then do ;
test='NO' ; * All Nondetects -> No Dist. Test ;
censored='YES' ; * All Nondetects -> Censored data ;
end ;
if n = 1 then do ;
test='NO' ; * Only 1 value -> No Dist. Test ;
if det=1 then
censored='NO' ; * It is a detect -> Censored data ;
end ;
if n > 1 and det ne . and det > 0 and det < n then do ;
test='YES' ; * At least 1 detect -> Do Dist. Test ;
censored='YES' ; * Some Nondetects -> Censored data ;
mean=. ; * Will re-calculate later ;
end ;
if n > 1 and det ne . and det > 0 and det = n then do ;
test='YES' ; * At least 1 detect -> Do Dist. Test ;
censored='NO' ; * No Nondetects -> Uncensored data ;
mean=. ; * Will re-calculate later ;
end ;
label censored='Censored Data? (YES/NO)' ;
*****;
* Only keep MEAN for data with test='NO' ;
* (re-calculate for other data later) ;
*****;
keep &SORTBY1 casnum n det mean freq_det test censored ;
run ;

*****;
* Next: obtain MAX and MIN for detects and nondetects ;
*
* NOTE: use VALUE instead of VALUE2 here. ;
*****;
proc means noprint min max data=&DS_NAME1 ;
where det_cntr=0 ;

```

```

by &SORTBY1 ;
var &VALUE ;
output out=nondets min=min_nond max=max_nond ;
run ;

proc means noprint min max data=&DS_NAME1 ;
  where det_cntr=1 ;
  by &SORTBY1 ;
  var &VALUE ;
  output out=dets min=min_det max=max_det ;
run ;

*****;
* Next: Run tests for normality and lognormality ;
* (Approach for lognormal test: transform -> normal test) ;
* (Transform rads and test for normality if all concs. > 0) ;
*****;
data &DS_NAME1 ;
  merge &DS_NAME1 freqdet dets nondets ;
  by &SORTBY1 ;
  if value2 ne . and value2 <= 0 then lnvalue=. ;
  if value2 ne . and value2 > 0 then lnvalue=log(value2) ;
  if value2 = . then lnvalue=. ;
  drop n det mean_freq_type ;
run ;

*****;
* Test for Normality: ;
*****;
proc univariate noprint data=&DS_NAME1 normal ;
  by &SORTBY1 ;
  where test='YES' ;
  id test censored min_det max_det min_nond max_nond ;
  var value2 ;
  output out=norstat normal=norstat probn=probn mean=meann var=varn
         std=stdn n=nn pctlpts=20 80 pctlpre=p median=median ;
  * meann -> mean from normal distribution ;

data norstat ; set norstat ;
  if nn ne . and nn > 1 then t=tinv(0.95,nn-1) ;
  ucl95n = meann + t*stdn/sqrt(nn) ;
  label norstat='Test Statistic for Normality'
         probn = 'p-value for Normal Test'
         ucl95n = 'Upper 95% CL on Mean for Normal'
         varn = 'Variance (VALUE2) assuming Normal Dist.' ;
  keep &SORTBY1 test norstat probn meann ucl95n nn median
      censored min_det max_det min_nond max_nond varn p20 p80 ;

run ;

*****;
* Test for Lognormality: ;
*****;
proc univariate noprint data=&DS_NAME1 normal ;
  by &SORTBY1 ;
  where (test='YES' and anatype ne 'Radionuclides') or
        (test='YES' and anatype = 'Radionuclides' and
         min_det ne 0 and min_det > 0 and
         min_nond ne 0 and (min_nond > 0 or min_nond = .)) ;
  id test censored min_det max_det min_nond max_nond ;
  var lnvalue ;
  output out=logstat normal=logstat probn=probn n=nt mean=meant
         var=varv pctlpts=20 80 pctlpre=lnp median=lnmedian ;
  * meant -> Transformed mean, varv -> Transformed Var., etc. ;

run ;

*****;
* Next: Calculate mean based on lognormal distribution ;
*****;
data logstat ; set logstat ;
  label logstat='Test Statistic for Lognormality'
         probl = 'p-value for Lognormal Test'
         ucl95l = 'Upper 95% CL on Mean for Lognormal' ;
  factor1=meant + varv/2 ;
  meanl =exp(factor1) ; * meanl -> mean of lognormal dist. ;
  factor2=(varv/nt) + ((varv*varv)/(2*(nt+1))) ;
  ucl95l=exp(factor1 + 1.645*sqrt(factor2)) ; * ucl95 for lognorm. ;
  p20l=exp(lnp20) ;

```

```

p801=exp(lnp80) ;
medianl=exp(lnmedian) ;
keep &SORTBY1 test logstat probl meanl ucl95l p20l p80l
      censored min_det max_det min_nond max_nond medianl ;

run ;

*****;
* Assign distribution & mean for those tested (where test=YES); ;
*****;
data testyes ;
merge norstat logstat ;
by &SORTBY1 ;
length dist $2 ;
*****;
* Case 1: Six or less data points -> assign as normally distributed ;
*****;
if test='YES' and nn <= 6 then do ;
    dist='N' ;
    mean=meann ;
    ucl95=ucl95n ;
end ;
*****;
* Case 2: Enough data to test for normal, but not enough for logn. ;
*****;
if test='YES' and nn > 6 and probl=. and probn ne . then do ;
    dist='N' ;
    mean=meann ;
    ucl95=ucl95n ;
end ;
*****;
* Case 3: Both tests run, with normal test giving larger p-value: ;
*****;
if test='YES' and nn > 6 and probn ne . and probl ne . and
    (probn >= probl) then do ;
    dist='N' ;
    mean=meann ;
    ucl95=ucl95n ;
end ;
*****;
* case 4: both tests run, with lognormal test giving larger p-value: ;
* (Uncensored data only) ;
*****;
if test='YES' and nn > 6 and probn ne . and probl ne . and
    (probn < probl) and censored='NO' then do ;
    dist='L' ;
    mean=meanl ;
    ucl95=ucl95l ;
    median=medianl ;
    p20=p20l ;
    p80=p80l ;
end ;
*****;
* case 5: both tests run, with lognormal test giving larger p-value: ;
* (Censored data only) ;
*****;
if test='YES' and nn > 6 and probn ne . and probl ne . and
    (probn < probl) and censored='YES' then do ;
    dist='L' ;
    median=medianl ;
    p20=p20l ;
    p80=p80l ;

*****;
* Case 5a: No variation in detected values for lognormal ... ;
* -> calculate as if all values are detected values. ;
*****;
if min_det ne . and max_det ne . and min_det=max_det then do ;
    mean =meanl ;
    ucl95=ucl95l ;
end ;
*****;
* Case 5b: Variation in detected values for lognormal ... ;
* -> calculate again using PROC LIFEREG (utilizing ;
* censored values). ;
*****;
if min_det ne . and max_det ne . and min_det ne max_det then do ;
    mean =. ; * Recalculate with PROC LIFEREG ;
    ucl95=. ;
end ;
end ;

```

```

*****;
* case 6: No variation for any of the data ... includes detects and ;
* nondetects (-> all same value) --> assume normal ;
* (Situational problem: no p-value calculated) ;
*****;
if test='YES' and varn=0 then do ;
  dist = 'N' ;
  mean = meann ;
  ucl95 = ucl95n ;
end ;
label dist = 'Distribution Used'
      mean = 'Mean Concentration'
      ucl95 = 'Upper 95% Confidence Limit on Mean' ;
drop meann meanl ucl95n ucl95l min_det max_det min_nond max_nond nn
      medianl p20l p80l ;
run ;

```

```

*****;
* Determine if PROC LIFEREG needed ;
* - set up LIFEREG statements within macro ;
* - count situations to see if macro needed ;
* - use IF-THEN statement to determine if ;
* LIFEREG statements (macro) needed ;
*****;

```

```

*****;
* Define MACRO called DOLIFE ... should ;
* execute only if PROC LIFEREG needed ;
*****;

```

```

%macro dolife ;
  dummy=1 ;
  drop dummy ;
run ;
* This ends the chcklog2 data set ;

```

```

*****;
* Set up censored data for estimation of mean value (lognormal) ;
* (Must have variable DIST on raw data set first) ;
*****;
data logcens ; set testyes ; * data set for lognormal/censored data ;
* (with variation in detected values) ;
if test='YES' and censored='YES' and dist='L' and mean=. ;
keep &SORTBY1 dist ;
run ;

```

```

data setup ; merge &DS_NAME1(in=a) logcens(in=b) ;
by &SORTBY1 ;
if b=1 ;
if det_cntr=0 then do ; * for Nondetects => right-censored data: ;
  upper = &VALUE ;
  lower = . ;
end ;
if det_cntr=1 then do ; * for Detects => uncensored data: ;
  upper = &VALUE ;
  lower = &VALUE ;
end ;
keep &SORTBY1 upper lower freq_det dist ;
run ;

```

```

*****;
* Next: calculate MEAN for uncensored lognormal data: ;
*****;
proc lifereg data=setup noprint outest=ourest covout ;
by &SORTBY1 ;
model (lower,upper) = /distribution=lnormal ;
data params ; set ourest ;
if _name_ = 'LOWER' and _type_ = 'PARMS' ;
muhat=intercep ;
varhat= scale_ ;
keep &SORTBY1 muhat varhat ;
data var_mu ; set ourest ;
if _name_ = 'INTERCPT' and _type_ = 'COV' ;
v11=intercep ;
v12= scale_ ;
keep &SORTBY1 v11 v12 ;
data var_var ; set ourest ;
if _name_ = 'SCALE' and _type_ = 'COV' ;
v22= scale_ ;
keep &SORTBY1 v22 ;
run ;

```

```

data censored ; merge params var_mu var_var ;
  by &SORTBY1 ;
  meanc = exp(muhat + varhat/2) ;
  var_mean = v11 + 0.25*v22 + v12 ;
  ucl95c = exp(muhat + varhat/2 + 1.645*sqrt(var_mean)) ;
  label meanc = 'Mean of Censored Lognormal Data'
  ucl95c = 'UCL95 for Censored Lognormal Data' ;
  keep &SORTBY1 meanc ucl95c ;
run ;

*****;
* Merge back with testyes ;
*****;
data testyes ; merge censored(in=a) testyes(in=b) ;
  by &SORTBY1 ;
  if a=1 and meanc ne . then do ;
    mean =meanc ;
    ucl95=ucl95c ;
  end ;
  drop meanc ucl95c ;
*****;
* Define dummy so that macro can be completed ;
* (will be dropped following this macro) ;
*****;
dummy=1 ;
%mend dolife ; * End of macro definition ;

*****;
* Start the check to see if LIFEREG needed ;
*****;
data checklog ; set testyes ;
  if test='YES' and censored='YES' and dist='L' and mean=.
  then counter=1 ;
  else counter=0 ;
  keep &SORTBY1 counter ;
run ;
*****;
* Count number of situations where LIFEREG needed ;
*****;
proc means noprint data=checklog sum ;
  var counter ;
  output out=chcklog2 sum=totalx ;
run ;
data chcklog2 ; set chcklog2 ;
  if totalx ne . and totalx > 0 then answer='YES' ; else
  if totalx ne . and totalx = 0 then answer='NO' ;
  dummy=2 ;
  keep totalx answer dummy ;
run ;
*****;
* Put values of count into a macro variable ;
*****;
data _null_ ; set chcklog2 ;
  call symput('answer',answer) ;
run ;

*****;
* Execute macro to perform LIFEREG if data meet criteria ;
* (i.e., if totalx > 0 ... or answer='YES') ;
*****;
%MACRO LIFEORNO ;
  data chcklog2 ; set chcklog2 ;
  %IF &ANSWER=YES %THEN %DO ;
    %DOLIFE ;
  %END ;
  drop dummy ;
run ;
%MEND LIFEORNO ;

*****;
* Execute the LIFEORNO macro ;
*****;
%LIFEORNO
run ;

*****;
* Next: Put summary data sets together and assign appropriate
* statistic as representative concentration: ;
* Four situations: ;
* 1) All nondetects -> Use max_nond as rep. conc. ;

```



```

*      2) n=1 (one obs.)    -> Use max_det or max_nond ;
*      3) Normal & n > 1   -> Use min(UCL95,MAX_DET) as rep. conc.;
*      4) Lognormal & n > 1 -> Use min(UCL95,MAX_DET) as rep. conc.;
*****;
data summary ;
merge freqdet testyes nondets dets ;
by &SORTBY1 ;
drop_freq_type_ ;
*****;
* First situation: ;
*****;
if det=0 then do ;
  c =max_nond ;
  ucl95=. ;
end ;
*****;
* Second situation: ;
*****;
if n=1 and det=1 then do ;
  c =max_det ;
  ucl95=. ;
end ;
*****;
* Third and fourth situations: ;
*****;
if (n > 1) and (det > 0) and (ucl95 ne . and ucl95 <= max_det)
  then c=ucl95 ;
if (n > 1) and (det > 0) and (ucl95 ne . and ucl95 > max_det)
  then c=max_det ;
*****;
* Assign those not tested for distribution as "NT": ;
*****;
if test='NO' then dist='NT' ;
*****;
* Assign formats to numerical values & labels to others: ;
*****;
format mean min_nond min_det max_nond max_det ucl95 c e9. ;
label c = 'Rep. Conc. (used in HHRA)'
      min_det = 'Min. Detected Conc.'
      max_det = 'Max. Detected Conc.'
      min_nond = 'Min. Nondetected Conc.'
      max_nond = 'Max. Nondetected Conc.' ;
*****;
* Create dummy variable to aid with output ordering (see below) ;
*****;
* dummy1=1 ; * Add this statement if section below executed ;
run ;

*****;
* Make data set permanent ;
*****;
libname screen "&DATA_LOC" ;
data screen.&DS_NAME2 ;
set summary ;
run ;

```

Section 3
PRG Screen Program

```

libname in '/pgdp/wag28' ;
libname prg '/pgdp/prg' ;
options nodate nonumber ls=120 ps=60 ;

*****;
* PRG screen
*****;
* Let Chromium=Chromium VI for PRG screening purposes ;

data in ; set in.wg28stat ;
if chemical='Chromium' or casnum=7440473 then casnum=18540299 ;
proc sort ; by casnum units ;

data prgso ; set prg.res9906 ;
if fishbtf>100 then bioaccum='Yes' ;
if casnum=. or raduse='No' or (prgn=. and prgc=.) or analysis='Thorium'
or analysis='Mercury (elemental)' then delete ;
if anatype='Radionuclides' then units='pCi/g' ;
else units='mg/kg' ;
reshi=prgn ;
resecr=prgc ;
format reshi resecr e8. ;
keep units casnum reshi resecr bioaccum ;
proc sort ; by casnum ;

data prggw ; set prg.resg9906 ;
if fishbtf>100 then bioaccum='Yes' ;
if casnum=. or raduse='No' or (prgn=. and prgc=.) or analysis='Thorium'
or analysis='Mercury (elemental)' then delete ;
if anatype='Radionuclides' then units='pCi/L' ;
else units='mg/L' ;
reshi=prgn ;
resecr=prgc ;
format reshi resecr e8. ;
keep units casnum reshi resecr bioaccum ;
proc sort ; by casnum ;

data prg ; set prgso prggw ; by casnum units ;

data compare ; merge in(in=a) prg(in=b) ;
by casnum units ; if a=1 ;
if det>0 then do ;
if reshi ne . and max_det>=reshi then do ;
maxreshi='Yes' ;
end ;
else if reshi ne . and max_det<reshi then do ;
maxreshi='No' ;
end ;
if resecr ne . and max_det>=resecr then do ;
maxresecr='Yes' ;
end ;
else if resecr ne . and max_det<resecr then do ;
maxresecr='No' ;
end ;
if maxreshi='Yes' or maxresecr='Yes' then pflag='P' ;
end ;
if reshi ne . or resecr ne . then do ;
if maxreshi ne 'Yes' and maxresecr ne 'Yes' and bioaccum ne 'Yes' then
prgdelet='Yes' ;
else prgdelet='No' ;
end ;
proc sort ; by location med_type media anatype chemical ;

data in.compare ; set compare ;
run ;

```

Section 4

Background and RDA Screen Program

```

libname in '/pgdp/wag28' ;
libname back '/pgdp/background' ;

options nodate nonumber missing= ' ' ;
/*
*****;
* Background screen for groundwater only
*****;

* Divide gw summary statistics into filtered and unfiltered set ;

data pgdpu ; set in.compare ;
if med_type='WG' and prgdelet ne 'Yes' ;
if chemical='Chromium' then casnum=7440473 ;
if freq_det='0/' then delete ;
keep location med_type media chemical casnum max_det det units ;
proc sort ; by casnum ;

* Background for unfiltered data - don't include TRUs or Tc-99 ;

data backu ; set back.watrback ;
if analysis='CYANIDE (WATER)' then delete ;
bg=2*mean ;
if analysis='SILICA' then casnum=7631869 ;
if analysis='NITRATE AS NITROGEN' then casnum=14797559 ;
if analysis='NEPTUNIUM' or analysis='PLUTONIUM' or
analysis='TECHNETIUM' then delete ;
format bg e9. ;
keep casnum bg ;
proc sort ; by casnum ;

data unfilt ; merge pgdpu(in=a) backu(in=b) ; by casnum ;
if a=1 ;
if det>0 then do ;
if bg ne . and max_det>=bg then bflag='B' ;
end ;

data gwback ; set unfilt ;
drop casnum ;
*/
*****;
* Background screen for soil only
*****;

data sursoil ; set in.compare ;
if freq_det='0/' then delete ;
if med_type='SO' and media='Surface' and prgdelet ne 'Yes' ;
if chemical='Chromium' then casnum=7440473 ;
keep location med_type media chemical casnum max_det det units ;
proc sort ; by casnum ;

data subsoil ; set in.compare ;
if freq_det='0/' then delete ;
if med_type='SO' and media='Sub' and prgdelet ne 'Yes' ;
if chemical='Chromium' then casnum=7440473 ;
keep location med_type media chemical casnum max_det det units ;
proc sort ; by casnum ;

data backsur ; set back.soilback ;
bg=bg_value ;
if bg= . or depth='sub' then delete ;
keep casnum bg ;
proc sort ; by casnum ;

data backsub ; set back.soilback ;
bg=bg_value ;
if bg= . or depth='sur' then delete ;
keep casnum bg ;
proc sort ; by casnum ;

data surface ; merge sursoil(in=a) backsur(in=b) ;
by casnum ; if a=1 ;
if det>0 then do ;
if bg ne . and max_det>=bg then bflag='B' ;
end ;

data subface ; merge subsoil(in=a) backsub(in=b) ;
by casnum ; if a=1 ;
if det>0 then do ;
if bg ne . and max_det>=bg then bflag='B' ;
end ;

```

```

data allback ; set /*gwwback*/ surface subface ;
if bg ne . then do ;
  if bflag= ' ' then bckdelet='Yes' ;
  else bckdelet='No' ;
end ;
drop casnum ;

proc sort ; by location med_type media chemical units ;

proc sort data=in.compare out=compare ;
by location med_type media chemical units ;

data newstats ; merge compare allback ;
by location med_type media chemical units ;
format da rda e9. ;

* Now let's screen essential nutrients out - RDAs in mg/day ;

if det>0 and bckdelet ne 'Yes' and prgdelet ne 'Yes' then do ;

  if casnum=7440702 and units='mg/kg' then do ;
    rda=800/5 ; da=max det*2e-4 ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=16887006 and units='mg/kg' then do ;
    rda=600/5 ; da=max det*2e-4 ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7439896 and units='mg/kg' then do ;
    rda=10/5 ; da=max det*2e-4 ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7440508 and units='mg/kg' then do ;
    rda=1.0/5 ; da=max det*2e-4 ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7782414 and units='mg/kg' then do ;
    rda=1.5/5 ; da=max det*2e-4 ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7553562 and units='mg/kg' then do ;
    rda=0.12/5 ; da=max det*2e-4 ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7439954 and units='mg/kg' then do ;
    rda=150/5 ; da=max det*2e-4 ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7439987 and units='mg/kg' then do ;
    rda=0.05/5 ; da=max det*2e-4 ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7728140 and units='mg/kg' then do ;
    rda=800/5 ; da=max det*2e-4 ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7440097 and units='mg/kg' then do ;
    rda=1600/5 ; da=max det*2e-4 ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7782492 and units='mg/kg' then do ;
    rda=0.03/5 ; da=max det*2e-4 ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7440702 and units='mg/L' then do ;
    rda=800/5 ; da=max det ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=16887006 and units='mg/L' then do ;
    rda=600/5 ; da=max det ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7439896 and units='mg/L' then do ;
    rda=10/5 ; da=max det ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7440508 and units='mg/L' then do ;
    rda=1.0/5 ; da=max det ;
    if da>=rda then eflag='E' ;
  end ;
  if casnum=7782414 and units='mg/L' then do ;

```

```

    rda=1.5/5 ; da=max_det ;
    if da>=rda then eflag='E' ;
end ;
if casnum=7553562 and units='mg/L' then do ;
    rda=0.12/5 ; da=max_det ;
    if da>=rda then eflag='E' ;
end ;
if casnum=7439954 and units='mg/L' then do ;
    rda=170/5 ; da=max_det ;
    if da>=rda then eflag='E' ;
end ;
if casnum=7439987 and units='mg/L' then do ;
    rda=0.05/5 ; da=max_det ;
    if da>=rda then eflag='E' ;
end ;
if casnum=7728140 and units='mg/L' then do ;
    rda=800/5 ; da=max_det ;
    if da>=rda then eflag='E' ;
end ;
if casnum=7440097 and units='mg/L' then do ;
    rda=1600/5 ; da=max_det ;
    if da>=rda then eflag='E' ;
end ;
if casnum=7782492 and units='mg/L' then do ;
    rda=0.03/5 ; da=max_det ;
    if da>=rda then eflag='E' ;
end ;
end ;
if rda ne . then do ;
    if eflag= ' ' then rdadelet='Yes' ;
    else rdadelet='No' ;
end ;

data in.newstats ; set newstats ; * dataset for ras - only ra data ;

run ;

```

Section 5

Toxicity Value Database Preparation Programs


```

libname in '/pgdp/wag28' ;
libname tox '/pgdp/tox' ;

data copc ; set in.newstats(rename=(media=med_name)) ;

if freq_det='0' or index(chemical,'Alkalinity')>0 or
chemical='Organic Carbon' or chemical='Gross' or chemical='Alpha activity' or
chemical='Calcium' or chemical='Chloride' or chemical='Iodine' or
chemical='Beta activity' or chemical='Magnesium' or chemical='Potassium' or
chemical='Sodium' or chemical='Phosphorus' then delete ;
if (prydelet ne 'Yes' and bckdelet ne 'Yes' and rdadelet ne 'Yes') or
(reshi=. and resecr=. and bg=. and rda=.) ;

if location='SWMU 99A' then size=2.4 ;
if location='SWMU 99B' then size=0.3 ;
if location='SWMU 193A' then size=17.4 ;
if location='SWMU 193B' then size=4.3 ;
if location='SWMU 193C' then size=87.0 ;
if location='SWMU 194' then size=41.7 ;
if location='AOC 204' then size=11.3 ;

data gw ; set copc ;
if med_type='WG' ;
media='Water' ;
proc sort ; by casnum ;

data soil ; set copc ;
if med_type in ('SO','SE') ;
media='Soil' ;
proc sort ; by casnum ;

data food ; set copc ;
if med_name=(Subsurface' then delete ;
media='Food' ;
proc sort ; by casnum ;

data gwtox ; set tox.pgdp9907(rename=(analysis=chemical)) ;
if wateruse='Yes' ;
if casnum=. or raduse='No' or chemical='Thorium' or
chemical='Mercury (elemental)' then delete ;
drop chemical anatype ;
proc sort ; by casnum ;

data soiltox ; set tox.pgdp9907(rename=(analysis=chemical)) ; ;
if soiluse='Yes' ;
if casnum=. or raduse='No' or chemical='Thorium' or
chemical='Mercury (elemental)' then delete ;
drop chemical anatype ;
proc sort ; by casnum ;

data foodtox ; set tox.pgdp9907(rename=(analysis=chemical)) ; ;
if fooduse='Yes' ;
if casnum=. or raduse='No' or chemical='Thorium' or
chemical='Mercury (elemental)' then delete ;
drop chemical anatype ;
proc sort ; by casnum ;

data copcgw ; merge gw(in=a) gwtox(in=b) ; by casnum ;
if a=1 ;

data copcso ; merge soil(in=a) soiltox(in=b) ; by casnum ;
if a=1 ;

data copcfo ; merge food(in=a) foodtox(in=b) ; by casnum ;
if a=1 ;

data ind ; set copcso ;
if med_name='Surface' ;
use='ind' ;

data find ; set copcso copcgw ;
if med_name='Sub' then delete ;
use='find' ;

data exc ; set copcso ;
if med_name='Subsurface' ;
use='exc' ;

data rec ; set copcfo ;
if med_name='Surface' ;
use='rec' ;

```

```
data res ; set copcso copcgw copcfo ;  
if med_name='Sub' then delete ;  
use='res ' ;  
  
data in.quandets ; set ind find exc rec res ;  
  
run ;
```

Section 6
Output Production Program

```

libname pgdp '/pgdp/wag28' ;
options nodate nonumber missing=' ' ls=115 ps=80 ;
/*
data table1 ; set pgdp.wag28 ;
label sta_name='Sampling station' ;
keep location sta_name ;
proc sort nodups ; by location sta_name ;

title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.1. Assignment of sampling stations by location' ;
footnote1 ' ' ;
footnote2 ' ' ;

filename tab1 "wag28_table1.txt" ;
proc printto print=tab1 new ;

proc print noobs uniform label split='@' ; by location ;
var sta_name ;
run ;

options nodate nonumber missing=' ' ls=150 ps=60 ;

data table3 ; set pgdp.wg28stat ;
keep location media anatype chemical freq_det max_det min_det
max_nond min_nond dist mean units ;

data table3 ; set table3 ;
mind=put(min_det,e9.) ;
maxd=put(max_det,e9.) ;
if mind ne '' and maxd ne '' then detrange=trim(mind)||' -' ||trim(maxd) ;
minn=put(min_nond,e9.) ;
maxn=put(max_nond,e9.) ;
if minn ne '' and maxn ne '' then nonrange=trim(minn)||' -' ||trim(maxn) ;
analyte=trim(chemical) ;
label analyte ='Analyte'
      freq_det='Frequency@of@Detection'
      detrange='Detected@Range'
      nonrange='Nondetected@Range'
      dist      ='Distribution'
      mean      ='Arithmetic@Mean'
      units     ='Units' ;
drop chemical max_det min_det max_nond min_nond mind maxd minn maxn ;
proc sort ; by location media anatype analyte ;

title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.3. Data summary for all analytes by location and medium' ;
footnote1 ' ' ;
footnote2 '*L=Lognormal, N=Normal, NT=Not tested' ;

filename tab3 "wag28_table3.txt" ;
proc printto print=tab3 new ;

proc print noobs uniform label split='@' ; by location media ;
var analyte freq_det detrange nonrange dist mean units ;
run ;

data table4 ; set table3 ;
if freq_det='0/' then delete ;

title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;

```

```

title8 ' ' ;
title9 'Table 1.4. Data summary for detected analytes by location and medium' ;
footnote1 ' ' ;
footnote2 '*L=Lognormal, N=Normal, NT=Not tested' ;

filename tab4 "wag28_table4.txt" ;
proc printto print=tab4 new ;

proc print noobs uniform label split='@' ; by location media ;
var analyte freq_det detrange nonrange dist mean units ;
run ;

data table5 ;
set pgdp.compare ;
if freq_det='0/' or index(chemical,'Alkalinity')>0 or
  chemical='Organic Carbon' or chemical='Gross' then delete ;
keep location med_type media anatype chemical freq_det max_det reshi resecr
  maxreshi maxrescr units ;

data table5 ; set table5 ;
analyte=trim(chemical) ;
freq=trim(freq_det) ;
unit=trim(units) ;
label analyte = 'Analyte'
      freq    = 'Frequency@of@Detection'
      max_det = 'Maximum@detected@concentration'
      reshi   = 'HI'
      resecr  = 'ELCR'
      maxreshi='Exceed HI?'
      maxrescr='Exceed ELCR?'
      unit    = 'Units' ;
drop chemical units freq_det ;
proc sort ; by location media med_type anatype analyte ;

title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.5. Comparison of maximum detected concentrations and activities to human health risk-based'
title10 ' screening criteria by location and medium' ;
footnote1 ' ' ;
footnote2 ' ' ;

filename tab5 "wag28_table5.txt" ;
proc printto print=tab5 new ;

proc print noobs uniform label split='@' ; by location media ;
var analyte freq max_det reshi resecr maxreshi maxrescr unit ;
run ;

data table6 ;
set pgdp.newstats ;
if freq_det='0/' or index(chemical,'Alkalinity')>0 or
  chemical='Organic Carbon' or chemical='Gross' then delete ;
if det>0 and bg ne . then do ;
  if bflag='B' then exceedbg='Yes' ;
  else exceedbg='No' ;
end ;
keep location med_type media anatype chemical freq_det max_det bg exceedbg units ;

data table6 ; set table6 ;
analyte=trim(chemical) ;
freq=trim(freq_det) ;
unit=trim(units) ;
label analyte = 'Analyte'
      freq    = 'Frequency@of@Detection'
      max_det = 'Maximum@detected@concentration'
      bg      = 'Background@concentration'
      exceedbg='Exceed@Background?'
      unit    = 'Units' ;
drop chemical units freq_det ;
proc sort ; by location media med_type anatype analyte ;
options nodate nonumber missing=' ' ls=115 ps=80 ;
title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;

```

```

title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.6. Comparison of maximum detected concentrations and activities to background concentrations' ;
title10 ' by location and medium' ;
footnote1 ' ' ;
footnote2 ' ' ;

filename tab6 "wag28_table6.txt" ;
proc printto print=tab6 new ;

proc print noobs uniform label split='@' ; by location media ;
var analyte freq max_det by exceedbg unit ;

data table8 ;
set pgdp.newstats ;
if freq_det='0/' or index(chemical,'Alkalinity')>0 or
  chemical='Organic Carbon' or chemical='Gross' then delete ;
if rda ne . and max_det ne . then do ;
  if eflag='E' then exceedrda='Yes' ;
  else exceedrda='No ' ;
end ;
keep location med_type media anatype chemical freq_det rda max_det exceedrda units ;

data table8 ; set table8 ;
format rda5 daydose e9. ;
analyte=trim(chemical) ;
freq=trim(freq_det) ;
unit=trim(units) ;
rda5=5*rda ;
if units='mg/L' then daydose=max_det ;
if units='mg/kg' then daydose=max_det*2e-4 ;
label analyte = 'Analyte'
      daydose = 'Daily dose@for child'
      freq    = 'Frequency@of@Detection'
      max_det = 'Maximum@detected@concentration'
      rda     = '1/5 RDA'
      rda5    = 'RDA@for@child'
      exceedrda='Exceed@RDA?'
      unit    = 'Units' ;
drop chemical freq_det units ;
proc sort ; by location media med_type anatype analyte ;
options nodate nonumber missing=' ' ls=150 ps=60 ;
title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.8. Comparison of maximum detected concentrations of essential nutrients to recommended dietary allc' ;
title10 ' for children' ;
footnote1 ' ' ;
footnote2 ' ' ;

filename tab8 "wag28_table8.txt" ;
proc printto print=tab8 new ;

proc print noobs uniform label split='@' ; by location media ;
var analyte freq max_det unit daydose rda5 rda exceedrda ;

data table9 ;
set pgdp.quandats ;
if sfo=. and sfi=. and sfx=. and rfdoc=. and rfdic=. and adsfo=. and
  adrfdoc=. then name=trim(chemical)||'+' ;
else name=trim(chemical) ;
keep location med_type med_name anatype name freq_det ;
proc sort nodups ; by location med_type med_name anatype name freq_det ;

data table9 ; set table9 ;
freq=trim(freq_det) ;
analyte=trim(name) ;
label analyte = 'Analyte'
      freq    = 'Frequency@of@Detection' ;
drop name freq_det ;
proc sort ; by location med_name med_type anatype analyte ;
options nodate nonumber missing=' ' ls=115 ps=80 ;
title1 ' ' ;
title2 ' ' ;

```

```

title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.9. Chemicals of potential concern' ;
footnote1 ' ' ;
footnote2 '* COPC will be evaluated qualitatively' ;

filename tab9 "wag28_table9.txt" ;
proc printto print=tab9 new ;

proc print noobs uniform label split='@' ; by location med_name ;
var analyte freq ;

data table10 ;
set pgdp.newstats ;
if freq det='0/' then delete ;
keep location med_type media anatype chemical freq_det max_det min_det mean by
  reshi resecr rda bflag pflag eflag min_nond max_nond units prgdelet
  bckdelet rdadelet bioaccum ;

data table10 ; set table10 ;
length reason $8 ;
analyte=trim(chemical) ;
freq=trim(freq_det) ;
unit=trim(units) ;
mind=put(min_det,e9.) ;
maxd=put(max_det,e9.) ;
if mind ne ' ' and maxd ne ' ' then drange=trim(mind)||' -' ||trim(maxd) ;
minn=put(min_nond,e9.) ;
maxn=put(max_nond,e9.) ;
if minn ne ' ' and maxn ne ' ' then nrange=trim(minn)||' -' ||trim(maxn) ;
detrange=trim(drange) ;
nonrange=trim(nrange) ;
if prgdelet='Yes' or bckdelet='Yes' or rdadelet='Yes' then copc='No' ;
else copc='Yes' ;
if copc='Yes' and pflag=' ' and bflag=' ' and eflag=' ' and bioaccum='Yes' then
  keep='Bio' ;
else if copc='Yes' and pflag=' ' and bflag=' ' and eflag=' ' then keep='Qual' ;
else keep=compress(trim(pflag)||trim(bflag)||trim(eflag)) ;
if copc='No' then reason=copc ;
else reason=trim(copc)||'/' ||trim(keep) ;
if analyte='Sector' then reason=' ' ;
label analyte = 'Analyte'
      freq = 'Frequency of Detection'
      detrangle = 'Detected@Range'
      nonrange = 'Nondetected@Range'
      bg = 'Background value'
      reshi = 'HI'
      resecr = 'ELCR'
      mean = 'Arithmetic Mean'
      rda = '1/5@RDA'
      reason = 'COPC/@Basis*'
      unit = 'Units' ;
drop chemical freq_det pflag bflag eflag mind maxd min_det max_det copc
  keep minn maxn min_nond max_nond units drange nrange prgdelet bckdelet
  rdadelet ;
proc sort ; by location media med_type anatype analyte ;
options nodate nonumber missing=' ' ls=150 ps=60 ;
title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.10. Summary of data evaluation' ;
footnote1 ' ' ;
footnote2 '*P= > PRG, B= > Background, E= > Essential Nutrient, Bio= Bioaccumulates, Qual=Qualitative analyte' ;

filename tab10 "wag28_table10.txt" ;
proc printto print=tab10 new ;

proc print noobs uniform label split='@' ; by location media ;
var analyte freq nonrange detrangle mean reshi resecr unit reason ;

data table11 ; set pgdp.newstats ;

```

```

if freq_det=:0/ or index(chemical,'Alkalinity')>0 or
chemical='Organic Carbon' or chemical=:Gross' or
chemical='Calcium' or chemical='Chloride' or chemical='Iodine' or
chemical='Magnesium' or chemical='Potassium' or chemical='Sodium'
or chemical='Phosphorus' then delete ;

if prgdelete='Yes' or bckdelete='Yes' or rdadelet='Yes' then delete ;
keep location media anatype chemical c ;
proc sort nodups ; by location anatype chemical media c ;

proc transpose let out=conc ; by location anatype chemical ;
var c ; id media ;

data table11 ; set conc(rename=(rga_grou=rga)) ;
analyte=trim(chemical) ;
label analyte ='Analyte'
    rga      ='RGA Groundwater@(mg/L or pCi/L)'
    mcnairy  ='McNairy Groundwater@(mg/L or pCi/L)'
    surface  ='Surface soil@(mg/kg or pCi/g)'
    subsurfa='Subsurface soil@(mg/kg or pCi/g)' ;
drop _name_ _label_ _chemical_ ;
proc sort ; by location anatype analyte ;
options nodate nonumber missing=' ' ls=115 ps=80 ;
title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.11. Representative concentrations* of COPCs in media' ;
footnote1 ' ' ;
footnote2 '** Smaller of maximum detect and UCL95 ' ;

filename tab11 "wag28_table11.txt" ;
proc printto print=tab11 new ;

proc print noobs uniform label split='@' ; by location ;
var analyte rga mcnairy surface subsurfa ;

data vfpef ; set pgdp.calcall ;
if vf=. and pef=. then delete ;
keep anatype chemical vf pef ;
proc sort nodups ; by anatype chemical vf pef ;

data other ; set pgdp.quandets ;
keep anatype chemical kp bwet ;
proc sort nodups ; by anatype chemical kp bwet ;

data table39 ; merge vfpef other ; by anatype chemical ;
format vf pef kp bwet e9. ;
analyte=trim(chemical) ;
label analyte ='Analyte'
    kp      ='Permeability constant (cm/hr)'
    bwet    ='Vegetable bio-uptake factor (kg/kg)'
    vf      ='Volatilization factor (m^3/kg)'
    pef     ='Particulate emission factor (m^3/kg)' ;
keep anatype analyte vf pef kp bwet ;
proc sort nodups ; by anatype analyte ;
options nodate nonumber missing=' ' ls=115 ps=80 ;
title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.39. Miscellaneous factors used to calculate chronic daily intakes of COPCs' ;
footnote1 ' ' ;
footnote2 ' ' ;

filename tab39 "wag28_table39.txt" ;
proc printto print=tab39 new ;

proc print noobs uniform label split='@' ;
var analyte kp bwet vf pef ;
*/
data veg ; set pgdp.calcall ;
if cv=. then delete ;

```



```

if med_type='WG' and anatype='Rad' then cv=cv/1000 ;
keep location med_type med_name chemical anatype cv ;
proc sort ; by location anatype chemical ;

proc transpose let out=vegconc ;
by location anatype chemical ;
var cv ; id med_name ;

data vegconc ; set vegconc(rename=(surface=vegsoil rga_grou=vegrgw mcnairy=vegmw)) ;
drop _name_ ;

data rabbit ; set pgdp.calcall ;
if cr=. then delete ;
keep location med_type med_name chemical anatype cr ;
proc sort ; by location anatype chemical ;

proc transpose let out=rabconc ;
by location anatype chemical ;
var cr ; id med_name ;

data rabconc ; set rabconc(rename=(surface=rabsoil)) ;
drop _name_ ;

data quail ; set pgdp.calcall ;
if cq=. then delete ;
keep location med_type med_name chemical anatype cq ;
proc sort ; by location anatype chemical ;

proc transpose let out=quaconc ;
by location anatype chemical ;
var cq ; id med_name ;

data quaconc ; set quaconc(rename=(surface=quasoil)) ; ;
drop _name_ ;

data deer ; set pgdp.calcall ;
if cd=. then delete ;
keep location med_type med_name chemical anatype cd ;
proc sort ; by location anatype chemical ;

proc transpose let out=deerconc ;
by location anatype chemical ;
var cd ; id med_name ;

data deerconc ; set deerconc(rename=(surface=deersoil)) ; ;
drop _name_ ;

data food ; merge vegconc rabconc quaconc deerconc ;
by location anatype chemical ;

data table40 ; set food ;
format vegsoil vegrgw vegmgw rabsoil quasoil deersoil e9. ;
analyte=trim(chemical) ;
label analyte ='Analyte'
vegsoil ='Soil vegetable conc.@(mg/kg or pCi/g)'
vegrgw ='RGA GW veg. conc.@(mg/kg or pCi/g)'
vegmgw ='McNairy GW veg. conc.@(mg/kg or pCi/g)'
rabsoil ='Soil rabbit conc.@(mg/kg or pCi/g)'
quasoil ='Soil quail conc.@(mg/kg or pCi/g)'
deersoil ='Soil deer conc.@(mg/kg or pCi/g)' ;
drop chemical ;
proc sort ; by location anatype analyte ;
options nodate nonumber missing=' ' ls=150 ps=60 ;
title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 'Table 1.40. Representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail' ;
footnote1 ' ' ;
footnote2 ' ' ;

filename tab40 "wag28_table40.txt" ;
proc printto print=tab40 new ;

proc print noobs uniform label split='@' ; by location ;
var analyte vegsoil vegrgw vegmgw rabsoil quasoil deersoil ;

run ;

```

Section 7

CDI and Risk Calculation Programs

7a. CDI Tables

```
libname pgdp '/pgdp/wag28' ;
options nodate nonumber missing= ' ' ls=115 ps=80 ;
```

```
%MACRO CDITAB
```

```
(LANDUSE, DER, ING, INGV, INGD, INGR, INGO, EXT, INH, INHS, INHH, PATHS, NUM, CLASS, TARGET, TAB) ;
data cdi ; set pgdp.callcall(rename=(med_name=media)) ;
if landuse="&landuse" ;
analyte=trim(chemical) ;
label analyte = 'Analyte'
&der = 'Dermal contact'
&ing = 'Ingestion'
&ingv='Ingestion of vegetables'
&ingd='Ingestion of venison'
&ingr='Ingestion of rabbit'
&ingq='Ingestion of quail'
&ext = 'External exposure'
&inh = 'Inhalation of volatiles and particulates'
&inhs='Inh. of volatiles while showering'
&inhh='Inh. of volatiles during household use' ;
```

```
keep location media analyte &paths anatype ;
proc sort ; by location media anatype analyte ;
```

```
title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 "Table &num &class chronic daily intakes for &target" ;
footnote1 ' ' ;
footnote2 ' ' ;
```

```
filename &tab "wag28_&tab.txt" ;
proc printto print=&tab new ;
```

```
proc print noobs uniform label split='*' ; by location media ;
var analyte &paths ;
run ;
```

```
%MEND ;
```

```
%cditab(Industrial, dncdi, gncdi, gvncdia, gdncdia, grncdia, gqncdia, xccdi, incdi,
incdisa, incdiha, gncdi dncdi incdi, 1.42., Noncarcinogenic, current industrial worker,
table42) ;
```

```
%cditab(Industrial, dccdi, gccdi, gvccdia, gdccdia, grccdia, gqccdia, xccdi, iccdi,
iccdisa, iccdis, iccdisa, gccdi dccdi iccdi xccdi, 1.43., Carcinogenic,
current industrial worker, table43) ;
```

```
%cditab(Future Industrial, dncdi, gncdi, gvncdia, gdncdia, grncdia, gqncdia, xccdi,
incdi, incdis, incdiha, gncdi dncdi incdi incdis, 1.44., Noncarcinogenic,
future industrial worker, table44) ;
```

```
%cditab(Future Industrial, dccdi, gccdi, gvccdia, gdccdia, grccdia, gqccdia, xccdi,
iccdi, iccdis, iccdisa, gccdi dccdi iccdi iccdis xccdi, 1.45., Carcinogenic,
future industrial worker, table45) ;
```

```
%cditab(Residential, dncdia, gncdia, gvncdia, gdncdia, grncdia, gqncdia, xccdia, incdia,
incdisa, incdiha, gncdia dncdia incdia incdisa incdiha gvncdia, 1.46.,
Noncarcinogenic, future adult resident, table46) ;
```

```
%cditab(Residential, dncdic, gncdic, gvncdic, gdncdic, grncdic, gqncdic, xccdic, incdic,
incdisc, incdihc, gncdic dncdic incdic incdisc incdihc gvncdic, 1.47.,
Noncarcinogenic, future child resident, table47) ;
```

```
%cditab(Residential, dccdia, gccdia, gvccdia, gdccdia, grccdia, gqccdia, xccdia, iccdisa,
iccdisa, iccdisa, gccdia dccdia iccdisa iccdisa iccdisa xccdia gvccdia, 1.48.,
Carcinogenic, future adult resident, table48) ;
```

```
%cditab(Residential, dccdic, gccdic, gvccdic, gdccdic, grccdic, gqccdic, xccdic, iccdis,
iccdisc, iccdis, gccdic dccdic iccdis iccdis iccdis xccdic gvccdic, 1.49.,
Carcinogenic, future child resident, table49) ;
```

```
%cditab(Recreational, dncdia, gncdia, gvncdia, gdncdia, grncdia, gqncdia, xccdia, incdia,
incdisa, incdiha, gncdia grncdia gqncdia, 1.50., Noncarcinogenic,
future adult recreational user, table50) ;
```

```
%cditab(Recreational, dccdia, gccdia, gvccdia, gdccdia, grccdia, gqccdia, xccdia, iccdisa,
iccdisa, iccdisa, gdccdia gqccdia, 1.51., Carcinogenic,
future adult recreational user, table51) ;
```

```
%cditab(Recreational, dncdit, gncdit, gvncdit, gdncdit, grncdit, gqncdit, xccdia, incdia,
incdisa, incdiha, gncdit grncdit gqncdit, 1.52., Noncarcinogenic,
future teen recreational user, table52) ;
```

```
%cditab(Recreational, dccdit, gccdit, gvccdit, gdccdit, grccdit, gqccdit, xccdia, iccdisa,
```

iccdisa,iccdiha,gccdit grccdit gqccdit,1.53.,Carcinogenic,
future teen recreational user,table53) ;
%cditab (Recreational,dncdic,gncdic,gvncdic,gdncdic,grncdic,gqncdic,xccdic,incdic,
incdisc,incdihc,gdncdic grncdic gqncdic,1.54.,Noncarcinogenic,
future child recreational user,table54) ;
%cditab (Recreational,dccdic,gccdic,gvccdic,gdcccic,grccdic,gqccdic,xccdic,iccdic,
iccdisc,iccdihc,gdcccic grccdic gqccdic,1.55.,Carcinogenic,
future child recreational user,table55) ;
%cditab (Excavation,dncdi,gncdi,gvncdia,gdncdia,grncdia,gqncdia,xccdi,incdi,
incdisa,incdiha,gncdi dncdi incdi,1.56.,Noncarcinogenic,future excavation worker,
table56) ;
%cditab (Excavation,dccdi,gccdi,gvccdia,gdcccia,grccdia,gqccdia,xccdi,iccdi,
iccdisa,iccdiha,gccdi dccdi iccdi xccdi,1.57.,Carcinogenic,
future excavation worker,table57) ;

7b. Risk and HI Estimate

```

libname pgdp '/pgdp/wag28' ;
options ls=115 ps=80 mprint ;

*****;

%MACRO SETUP(risk,hq,ccdi,ncdi,sf,ur,rfd,rfc,med,land_use,ds_name,pathway) ;

data path ; set pgdp.calcall ;
format risk hq ccdi ncdi sf ur rfd rfc e9. ;

if anatype='Rad' then iur=. ;
if med_type='SO' and anatype ne 'Radionuclides' then sfi=. ;

if med_name='%med' and landuse='%land_use' ;

risk=&risk ; hq=&hq ; ccdi=&ccdi ; ncdi=&ncdi ;
sf=&sf ; ur=&ur ; rfd=&rfd ; rfc=&rfc ;

keep landuse location anatype.chemical risk hq ccdi ncdi sf ur rfd rfc class ;

proc sort ; by location ;

proc means noprint ; by location ;
var risk hq ;
output out=csopath sum=riskpath hqpath ;

data csopath ; set csopath ;
drop type_freq ;
format riskpath hqpath e9. ;
chemical='Pathway Total' ;
anatype='ZZZ' ;
landuse='%land_use' ;

data ads_name ; set path csopath ;
length pathway $60 ;
pathway='%&pathway' ;
run ;
%MEND ;

*****Excavation*****;

%setup(grisk,ghq,gccdi,gncdi,sfo,..,rfdoc,..,Subsurface Soil,Excavation,eingso,
Excavation Ingestion of Soil) ;
%setup(drisk,dhq,dccdi,dncdi,adsfo,..,adrfdoc,..,Subsurface Soil,Excavation,ederso,
Excavation Dermal Contact with Soil) ;
%setup(irisk,ihq,iccdi,incdi,sfi,iur,..,rfcic,Subsurface Soil,Excavation,einhso,
Excavation Inhalation of Soil) ;
%setup(xrisk,..,xccdi,..,sfx,..,..,Subsurface Soil,Excavation,eextso,
Excavation External Exposure to Soil) ;

*****Future Industrial*****;

%setup(grisk,ghq,gccdi,gncdi,sfo,..,rfdoc,..,McNairy Groundwater,Future Industrial,
fingmc,Future Industrial Ingestion of McNairy Groundwater) ;
%setup(drisk,dhq,dccdi,dncdi,adsfo,..,adrfdoc,..,McNairy Groundwater,Future Industrial,
fdermc,Future Industrial Dermal Contact with McNairy Groundwater) ;
%setup(irisks,ihqs,iccdis,incdis,sfi,..,rfdic,McNairy Groundwater,Future Industrial,
finhmc,Future Industrial Inhalation of McNairy Groundwater) ;

%setup(grisk,ghq,gccdi,gncdi,sfo,..,rfdoc,..,RGA Groundwater,Future Industrial,
fingrg,Future Industrial Ingestion of RGA Groundwater) ;
%setup(drisk,dhq,dccdi,dncdi,adsfo,..,adrfdoc,..,RGA Groundwater,Future Industrial,
fderry,Future Industrial Dermal Contact with RGA Groundwater) ;
%setup(irisks,ihqs,iccdis,incdis,sfi,..,rfdic,RGA Groundwater,Future Industrial,
finhrg,Future Industrial Inhalation of RGA Groundwater) ;

%setup(grisk,ghq,gccdi,gncdi,sfo,..,rfdoc,..,Surface Soil,Future Industrial,fingso,
Future Industrial Ingestion of Soil) ;
%setup(drisk,dhq,dccdi,dncdi,adsfo,..,adrfdoc,..,Surface Soil,Future Industrial,fderso,
Future Industrial Dermal Contact with Soil) ;
%setup(irisk,ihq,iccdi,incdi,sfi,iur,..,rfcic,Surface Soil,Future Industrial,finhso,
Future Industrial Inhalation of Soil) ;
%setup(xrisk,..,xccdi,..,sfx,..,..,Surface Soil,Future Industrial,fextso,
Future Industrial External Exposure to Soil) ;

*****Industrial*****;

%setup(grisk,ghq,gccdi,gncdi,sfo,..,rfdoc,..,Surface Soil,Industrial,iingso,
Industrial Ingestion of Soil) ;
%setup(drisk,dhq,dccdi,dncdi,adsfo,..,adrfdoc,..,Surface Soil,Industrial,iderso,
Industrial Dermal Contact with Soil) ;

```

```

%setup(irisk,ihq,iccdi,incdi,sfi,iur,,rfcic,Surface Soil,Industrial,iinhso,
Industrial Inhalation of Soil) ;
%setup(xrisk,,xccdi,,sfx,,,,,Surface Soil,Industrial,iextso,
Industrial External Exposure to Soil) ;

*****Recreational*****

%setup(gdriska,gdhqa,gdcdia,gdncdia,sfo,,rfdoc,,Surface Soil,Recreational,cingdsoa,
Recreational Adult Ingestion of Venison) ;
%setup(grriska,grhqa,grccdia,grncdia,sfo,,rfdoc,,Surface Soil,Recreational,cingrsoa,
Recreational Adult Ingestion of Rabbit) ;
%setup(ggriska,gghqa,gqccdia,gqncdia,sfo,,rfdoc,,Surface Soil,Recreational,cingqsoa,
Recreational Adult Ingestion of Quail) ;

%setup(gdriskc,gdhqc,gdcdic,gdncdic,sfo,,rfdoc,,Surface Soil,Recreational,cingdsoc,
Recreational Child Ingestion of Venison) ;
%setup(grriskc,grhqc,grccdic,grncdic,sfo,,rfdoc,,Surface Soil,Recreational,cingrsoc,
Recreational Child Ingestion of Rabbit) ;
%setup(ggriskc,gghqc,gqccdic,gqncdic,sfo,,rfdoc,,Surface Soil,Recreational,cingqsoc,
Recreational Child Ingestion of Quail) ;

%setup(gdriskt,gdhqt,gdcdit,gdncdit,sfo,,rfdoc,,Surface Soil,Recreational,cingdsot,
Recreational Teen Ingestion of Venison) ;
%setup(grriskt,grhqt,grccdit,grncdit,sfo,,rfdoc,,Surface Soil,Recreational,cingrsot,
Recreational Teen Ingestion of Rabbit) ;
%setup(ggriskt,gghqt,gqccdit,gqncdit,sfo,,rfdoc,,Surface Soil,Recreational,cingqsot,
Recreational Teen Ingestion of Quail) ;

*****Residential*****

%setup(griska,ghqa,gccdia,gncdia,sfo,,rfdoc,,Surface Soil,Residential,ringsoa,
Residential Adult Ingestion of Soil) ;
%setup(gvriska,gvhqa,gvccdia,gvncdia,sfo,,rfdoc,,Surface Soil,Residential,ringvsoa,
Residential Adult Ingestion of Vegetables from Soil) ;
%setup(driska,dhqa,dccdia,dncdia,adsfo,,adrfdoc,,Surface Soil,Residential,rdersoa,
Residential Adult Dermal Contact with Soil) ;
%setup(iriska,ihqa,iccdia,incdia,sfi,iur,,rfcic,Surface Soil,Residential,rinhsoa,
Residential Adult Inhalation of Soil) ;
%setup(xrisk,,xccdi,,sfx,,,,,Surface Soil,Residential,extsoa,
Residential Adult External Exposure to Soil) ;

%setup(griskc,ghqc,gccdic,gncdic,sfo,,rfdoc,,Surface Soil,Residential,ringsoc,
Residential Child Ingestion of Soil) ;
%setup(gvriskc,gvhqc,gvccdic,gvncdic,sfo,,rfdoc,,Surface Soil,Residential,ringvsoc,
Residential Child Ingestion of Vegetables from Soil) ;
%setup(driskc,dhqc,dccdic,dncdic,adsfo,,adrfdoc,,Surface Soil,Residential,rdersoc,
Residential Child Dermal Contact with Soil) ;
%setup(iriskc,ihqc,iccdic,incdic,sfi,iur,,rfcic,Surface Soil,Residential,rinhsoc,
Residential Child Inhalation of Soil) ;
%setup(xriskc,,xccdic,,sfx,,,,,Surface Soil,Residential,extsoc,
Residential Child External Exposure to Soil) ;

%setup(griska,ghqa,gccdia,gncdia,sfo,,rfdoc,,McNairy Groundwater,Residential,ringmca,
Residential Adult Ingestion of McNairy Groundwater) ;
%setup(gvriska,gvhqa,gvccdia,gvncdia,sfo,,rfdoc,,McNairy Groundwater,Residential,ringvmca,
Residential Adult Ingestion of Vegetables from McNairy Groundwater) ;
%setup(driska,dhqa,dccdia,dncdia,adsfo,,adrfdoc,,McNairy Groundwater,Residential,rdermca,
Residential Adult Dermal Contact with McNairy Groundwater) ;
%setup(irisksa,ihqsa,iccdisa,incdisa,sfi,,,,,rfdic,McNairy Groundwater,Residential,rinhsmca,
Residential Adult Inhalation While Showering of McNairy Groundwater) ;
%setup(iriskha,ihqha,iccdiha,incdiha,sfi,,,,,rfdic,McNairy Groundwater,Residential,rinhhmca,
Residential Adult Inhalation Household Use of McNairy Groundwater) ;

%setup(griskc,ghqc,gccdic,gncdic,sfo,,rfdoc,,McNairy Groundwater,Residential,ringmcc,
Residential Child Ingestion of McNairy Groundwater) ;
%setup(gvriskc,gvhqc,gvccdic,gvncdic,sfo,,rfdoc,,McNairy Groundwater,Residential,ringvmcc,
Residential Child Ingestion of Vegetables from McNairy Groundwater) ;
%setup(driskc,dhqc,dccdic,dncdic,adsfo,,adrfdoc,,McNairy Groundwater,Residential,rdermcc,
Residential Child Dermal Contact with McNairy Groundwater) ;
%setup(irisksc,ihqsc,iccdisc,incdisc,sfi,,,,,rfdic,McNairy Groundwater,Residential,rinhsmcc,
Residential Child Inhalation While Showering of McNairy Groundwater) ;
%setup(iriskhc,ihqhc,iccdihc,incdihc,sfi,,,,,rfdic,McNairy Groundwater,Residential,rinhhmcc,
Residential Child Inhalation Household Use of McNairy Groundwater) ;

%setup(griska,ghqa,gccdia,gncdia,sfo,,rfdoc,,RGA Groundwater,Residential,ringrga,
Residential Adult Ingestion of RGA Groundwater) ;
%setup(gvriska,gvhqa,gvccdia,gvncdia,sfo,,rfdoc,,RGA Groundwater,Residential,ringvrga,
Residential Adult Ingestion of Vegetables from RGA Groundwater) ;
%setup(driska,dhqa,dccdia,dncdia,adsfo,,adrfdoc,,RGA Groundwater,Residential,rderrga,
Residential Adult Dermal Contact with RGA Groundwater) ;
%setup(irisksa,ihqsa,iccdisa,incdisa,sfi,,,,,rfdic,RGA Groundwater,Residential,rinhrga,

```



```

Residential Adult Inhalation While Showering of RGA Groundwater) ;
*setup(iriskha,ihqha,iccdiha,incdiha,sfi,...,rfdic,RGA Groundwater,Residential,rinhrga,
Residential Adult Inhalation Household Use of RGA Groundwater) ;

```

```

*setup(griskc,ghqc,gccdic,gncdic,sfo,..,rfdoc,..,RGA Groundwater,Residential,ringrgc,
Residential Child Ingestion of RGA Groundwater) ;
*setup(gvriskc,gvhqc,gvccdic,gvncdic,sfo,..,rfdoc,..,RGA Groundwater,Residential,ringvrgc,
Residential Child Ingestion of Vegetables from RGA Groundwater) ;
*setup(driskc,dhqc,dccdic,dncdic,adsfo,..,adrfdoc,..,RGA Groundwater,Residential,rderrgc,
Residential Child Dermal Contact with RGA Groundwater) ;
*setup(iriskc,ihqsc,iccdisc,incdisc,sfi,...,rfdic,RGA Groundwater,Residential,rinhrgc,
Residential Child Inhalation While Showering of RGA Groundwater) ;
*setup(iriskhc,ihqhc,iccdihc,incdihc,sfi,...,rfdic,RGA Groundwater,Residential,rinhrgc,
Residential Child Inhalation Household Use of RGA Groundwater) ;

```

```

*MACRO TABLE(ds_list,hititle9,rititle9,land) ;

```

```

data paths ; set &ds_list ;
length analyte $100 ;
analyte=trim(chemical) ;
drop chemical ;
label analyte ='Analyte'
class ='Weight of Evidence Class'
risk ='Analyte Specific Risk'
hq ='Hazard Quotient'
ccdi ='Carcinogenic CDI'
ncdi ='Noncarcinogenic CDI'
sf ='Slope Factor'
rfd ='Reference Dose'
ur ='Unit Risk'
rfc ='Reference Concentration'
riskpath='Total Pathway Risk'
hqpath ='Pathway Hazard Index' ;

```

```

proc sort ; by location pathway ;

```

```

data hitable ; set paths ;
if index(pathway,'External Exposure')>0 then delete ;

```

```

title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 "&hititle9" ;
footnote1 ' ' ;
footnote2 ' ' ;

```

```

filename hiest "wag28 &land_hi_estimate.out" ;
proc printto print=hiest new ;

```

```

proc print noobs uniform data=hitable label split='*' ;
by location pathway ;
var analyte ncdi rfd rfc hq hqpath ;

```

```

data ritable ; set paths ;
title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 "&rititle9" ;
footnote1 ' ' ;
footnote2 ' ' ;

```

```

filename riskest "wag28 &land_risk_estimate.out" ;
proc printto print=riskest new ;

```

```

proc print noobs uniform data=paths label split='*' ;
by location pathway ;
var analyte ccdi sf ur risk riskpath ;

```

```

run ;

```

*MEND ;

```
*table(eingso ederso einhso eextso,Excavation Hazard Index Estimates,  
Excavation Excess Lifetime Cancer Risks,exc) ;  
*table(fingmc fdermc finhmc fingry fderry finhrg fingso fderso finhso fextso,  
Future Industrial Hazard Index Estimates,Future Industrial Excess Lifetime Cancer Risks,find) ;  
*table(iingso iderso iinhso iextso,  
Industrial Hazard Index Estimates,Industrial Excess Lifetime Cancer Risks,ind) ;  
*table(cingdsoa cingrsoa cingqsoa cingdsoc cingrsoc cingqsoc cingdsot cingrsot cingqsot,  
Recreational Hazard Index Estimates,Recreational Excess Lifetime Cancer Risks,rec) ;  
*table(ringsoa rdersoa rinhsoc rextsoa ringsoc rdersoc rinhsoc rextsoc ringvsoa  
ringvsoc ringmca rdermca rinhmca rinhmca ringvmca ringrga rderrya rinhsrga  
rinhsrga ringvrga ringmcc rdermcc rinhmcc rinhmcc ringvmcc ringrgc rderryc  
rinhsrgc rinhsrgc ringvrgc,Residential Hazard Index Estimates,  
Residential Excess Lifetime Cancer Risks,res) ;
```

7c. Risk and Hazard Calculation

```

libname in '/pgdp/wag28' ;

data indso ; set in.quandets ;
if use='ind' ;
drop media ;
proc sort ; by location med_type med_name anatype chemical units ;

data findso ; set in.quandets ;
if use='find' and med_type='SO' ;
drop media ;
proc sort ; by location med_type med_name anatype chemical units ;

data findgw ; set in.quandets ;
if use='find' and med_type='WG' ;
drop media ;
proc sort ; by location med_type med_name anatype chemical units ;

data exc ; set in.quandets ;
if use='exc' ;
drop media ;
proc sort ; by location med_type med_name anatype chemical units ;

data recso ; set in.quandets ;
if use='rec' and med_type='SO' ;
drop media ;
proc sort ; by location med_type med_name anatype chemical units ;

data resgw ; set in.quandets ;
if use='res' and media='Water' ;
drop media ;
proc sort ; by location med_type med_name anatype chemical units ;

data resso ; set in.quandets ;
if use='res' and media='Soil' ;
drop media ;
proc sort ; by location med_type med_name anatype chemical units ;

data resvegso ; set in.quandets ;
if use='res' and media='Food' and med_type='SO' ;
drop media ;
proc sort ; by location med_type med_name anatype chemical units ;

data resveggw ; set in.quandets ;
if use='res' and media='Food' and med_type='WG' ;
drop media ;
proc sort ; by location med_type med_name anatype chemical units ;

filename ingsoil '/pgdp/equations/ingestion_soil.sas' ;
filename inhsoil '/pgdp/equations/inhalation_soil_sed_new.sas' ;
filename dersoil '/pgdp/equations/dermal_soil_sed.sas' ;
filename extsoil '/pgdp/equations/external_soil.sas' ;

filename ingvsol '/pgdp/equations/ingestion_veg_soil.sas' ;
filename ingdeer '/pgdp/equations/ingestion_deer_soil.sas' ;
filename ingrabt '/pgdp/equations/ingestion_rabbit_soil.sas' ;
filename ingqual '/pgdp/equations/ingestion_quail_soil.sas' ;

filename inggw '/pgdp/equations/ingestion_gw_sw.sas' ;
filename inhhgw '/pgdp/equations/inhalation_hhuse_gw_sw.sas' ;
filename inhsgw '/pgdp/equations/inhalation_shower_gw_sw.sas' ;
filename dergw '/pgdp/equations/dermal_gw_sw.sas' ;

filename ingvgw '/pgdp/equations/ingestion_veg_gw_sw.sas' ;

*****
* Residential Child ;

%LET ds_name1=ressingc ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET gccdi=gcddic ;
%LET gncdi=gnccdic ;
%LET grisk=griskc ;
%LET ghq=ghqc ;
%LET ir=200 ;
%LET ed=6 ;
%LET ef=350 ;
%LET bw=14.5 ;
%LET area=0.25 ;

%include ingsoil ;

```

```
%LET ds_name1=ressderc ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET dccdi=dccdic ;
%LET dncdi=dncdic ;
%LET drisk=driskc ;
%LET dhq=dhqc ;
%LET sa=0.373 ;
%LET ed=6 ;
%LET ef=350 ;
%LET bw=14.5 ;
```

```
%include dersoil ;
```

```
%LET ds_name1=ressigvc ;
%LET ds_name2=resvegso ;
%LET landuse=Residential ;
%LET gvccdi=gvccdic ;
%LET gvncci=gvnccdic ;
%LET gvrisk=gvriskc ;
%LET gvhq=gvhq ;
%LET ir=0.13 ;
%LET fi= 0.4 ;
%LET ed=6 ;
%LET ef=350 ;
%LET bw=14.5 ;
%LET area=0.25 ;
```

```
%include ingvsol ;
```

```
%LET ds_name1=ressextc ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET xccdi=xccdic ;
%LET xrisk=xriskc ;
%LET ed=6 ;
%LET se= 0.2 ;
%LET te= 1 ;
%LET efx=350/365 ;
%LET area=0.25 ;
```

```
%include extsoil ;
```

```
%LET ds_name1=ressinhc ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET iccdi=iccdic ;
%LET incdi=incdic ;
%LET irisk=iriskc ;
%LET ihq=ihqc ;
%LET ir=0.833 ;
%LET et=24 ;
%LET ed=6 ;
%LET ef=350 ;
%LET focvf=0.006 ;
%LET pbvf=1.5 ;
%LET psvf=2.65 ;
%LET theta_wv=0.15 ;
%LET qcvf=73.63 ;
%LET Tvf=9.5e8 ;
%LET qcpef=73.63 ;
%LET vpef=0.5 ;
%LET Ompef=3.58 ;
%LET Utpef=11.32 ;
%LET Fxpef=0.0145 ;
```

```
%include inhsoil ;
```

```
%LET ds_name1=resgingc ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET gccdi=gccdic ;
%LET gncdi=gncdic ;
%LET grisk=griskc ;
%LET ghq=ghqc ;
%LET ir=1 ;
%LET ed=6 ;
%LET ef=350 ;
%LET bw=14.5 ;
```

```
*include inggw ;

%LET ds_name1=resgderc ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET dccdi=dccdic ;
%LET dncdi=dncdic ;
%LET drisk=driskc ;
%LET dhq=dhqc ;
%LET sa=0.720 ;
%LET ed=6 ;
%LET ef=350 ;
%LET bw=14.5 ;
%LET et=0.2 ;
```

```
*include dergw ;

%LET ds_name1=resgigvc ;
%LET ds_name2=resveggw ;
%LET landuse=Residential ;
%LET gvccdi=gvccdic ;
%LET gvncdi=gvncdic ;
%LET gvrisk=gvriskc ;
%LET gvhq=gvhqc ;
%LET ir=0.13 ;
%LET fi=0.4 ;
%LET ed=6 ;
%LET ef=350 ;
%LET bw=14.5 ;
```

```
*include ingvgw ;

%LET ds_name1=resgihhc ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET iccdih=iccdihc ;
%LET incdih=incdihc ;
%LET iriskh=iriskhc ;
%LET ihqh=ihqhc ;
%LET ir=0.833 ;
%LET et=24 ;
%LET ed=6 ;
%LET ef=350 ;
%LET bw=14.5 ;
```

```
*include inhhgw ;

%LET ds_name1=resgihsc ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET iccdis=iccdisc ;
%LET incdis=incdisc ;
%LET irisks=irisksc ;
%LET ihqs=ihqsc ;
%LET ir=0.600 ;
%LET et=0.2 ;
%LET ed=6 ;
%LET ef=350 ;
%LET bw=14.5 ;
```

```
*include inhsgw ;

* Residential Adult ;

%LET ds_name1=ressinga ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET gccdi=gccdia ;
%LET gncdi=gncdia ;
%LET grisk=griska ;
%LET ghq=ghqa ;
%LET ir=100 ;
%LET ed=34 ;
%LET ef=350 ;
%LET bw=70 ;
%LET area=0.25 ;
```

```
*include ingsoil ;

%LET ds_name1=ressdera ;
%LET ds_name2=resso ;
```

```
%LET landuse=Residential ;
%LET dccdi=dccdia ;
%LET dncdi=dncdia ;
%LET drisk=driska ;
%LET dhq=dhqa ;
%LET sa=0.350 ;
%LET ed=34 ;
%LET ef=350 ;
%LET bw=70 ;
```

```
%include dersoil ;
```

```
%LET ds_name1=ressigva ;
%LET ds_name2=resvegso ;
%LET landuse=Residential ;
%LET gvccdi=gvccdia ;
%LET gvncki=gvnckdia ;
%LET gvrisk=gvriska ;
%LET gvhq=gvhqa ;
%LET ir=0.1995 ;
%LET fi= 0.4 ;
%LET ed=34 ;
%LET ef=350 ;
%LET bw=70 ;
%LET area=0.25 ;
```

```
%include ingvsol ;
```

```
%LET ds_name1=ressexta ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET xccdi=xccdia ;
%LET xrisk=xriska ;
%LET ed=34 ;
%LET se= 0.2 ;
%LET te= 1 ;
%LET efx=350/365 ;
%LET area=0.25 ;
```

```
%include extsoil ;
```

```
%LET ds_name1=ressinha ;
%LET ds_name2=resso ;
%LET landuse=Residential ;
%LET iccdi=iccdia ;
%LET incdi=incdia ;
%LET irisk=iriska ;
%LET ihq=ihqa ;
%LET ir=0.833 ;
%LET et=24 ;
%LET ed=34 ;
%LET ef=350 ;
%LET focvf=0.006 ;
%LET pbvf=1.5 ;
%LET psvf=2.65 ;
%LET theta_wv=0.15 ;
%LET qcvf=73.63 ;
%LET Tvf=9.5e8 ;
%LET qcpef=73.63 ;
%LET vpef=0.5 ;
%LET Umpef=3.58 ;
%LET Utpef=11.32 ;
%LET Fxpef=0.0145 ;
```

```
%include inhsoil ;
```

```
%LET ds_name1=resginga ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET gccdi=gccdia ;
%LET gncdi=gncdia ;
%LET grisk=griska ;
%LET ghq=ghqa ;
%LET ir=2 ;
%LET ed=34 ;
%LET ef=350 ;
%LET bw=70 ;
```

```
%include inggw ;
```

```
%LET ds_name1=resgdera ;
```

```

%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET dccdi=dccdia ;
%LET dncdi=dncdia ;
%LET drisk=driska ;
%LET dhq=dhqa ;
%LET sa=1.815 ;
%LET ed=34 ;
%LET ef=350 ;
%LET bw=70 ;
%LET et=0.2 ;

```

```
%include dergw ;
```

```

%LET ds_name1=resgigva ;
%LET ds_name2=resveggw ;
%LET landuse=Residential ;
%LET gvccdi=gvccdia ;
%LET gvnccdi=gvnccdia ;
%LET gvrisk=gvriska ;
%LET gvhq=gvhqa ;
%LET ir=0.1995 ;
%LET fi= 0.4 ;
%LET ed=34 ;
%LET ef=350 ;
%LET bw=70 ;

```

```
%include ingvgw ;
```

```

%LET ds_name1=resgihha ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET iccdih=iccdiha ;
%LET incdih=incdiha ;
%LET iriskh=iriskha ;
%LET ihqh=ihqha ;
%LET ir=0.833 ;
%LET et=24 ;
%LET ed=34 ;
%LET ef=350 ;
%LET bw=70 ;

```

```
%include inhhgw ;
```

```

%LET ds_name1=resgihsa ;
%LET ds_name2=resgw ;
%LET landuse=Residential ;
%LET iccdis=iccdisa ;
%LET incdis=incdisa ;
%LET irisks=irisksa ;
%LET ihqs=ihqsa ;
%LET ir=0.600 ;
%LET et=0.2 ;
%LET ed=34 ;
%LET ef=350 ;
%LET bw=70 ;

```

```
%include inhsgw ;
```

```
data resident , merge ressingc ressinhc ressdarc ressigvc ressextc
```

```

    resgingc resgderc resgigvc resgihhc resgihac
    ressinga ressinha ressdara ressigva ressexta
    resginga resgdera resgigva resgihha resgihsa ;

```

```
by location med type med name anatype chemical units ;
```

```

iriskh=sum(iriskha,iriskhc) ;
iriska=sum(irisksa,irisksc) ;
grisk=sum(griska,griskc) ;
drisk=sum(driska,driskc) ;
gvrisk=sum(gvriska,gvriskc) ;
xrisk=sum(xriska,xriskc) ;
irisk=sum(iriska,iriskc) ;

```

```
run ;
```

```
*****
* Recreational Child ;
```

```

%LET ds_name1=recsigdc ;
%LET ds_name2=recso ;
%LET landuse=Recreational ;
%LET gdcddi=gdcddic ;

```



```
%LET gdnctdi=gdnctdic ;
%LET gdrisk=gdriskc ;
%LET gdhq=gdhqc ;
%LET ir=0.007 ;
%LET ed=6 ;
%LET ef=350 ;
%LET bw=14.5 ;
%LET area=494 ;
```

```
%include ingdeer ;
```

```
%LET ds_name1=recsigrc ;
%LET ds_name2=recso ;
%LET landuse=Recreational ;
%LET grctdi=grctdic ;
%LET grnctdi=grnctdic ;
%LET grrisk=grriskc ;
%LET grhq=grhq ;
%LET ir=0.0033 ;
%LET ed=6 ;
%LET ef=350 ;
%LET bw=14.5 ;
%LET area=7.7 ;
```

```
%include ingrabt ;
```

```
%LET ds_name1=recsigqc ;
%LET ds_name2=recso ;
%LET landuse=Recreational ;
%LET gqctdi=gqctdic ;
%LET gqncdi=gqncdic ;
%LET gqrisk=gqriskc ;
%LET gqhqc=gqhqc ;
%LET ir=0.00094 ;
%LET ed=6 ;
%LET ef=350 ;
%LET bw=14.5 ;
%LET area=25.5 ;
```

```
%include ingqual ;
```

```
* Recreational Adult ;
```

```
%LET ds_name1=recsigda ;
%LET ds_name2=recso ;
%LET landuse=Recreational ;
%LET gdctdi=gdctdia ;
%LET gdnctdi=gdnctdia ;
%LET gdrisk=gdriskc ;
%LET gdhq=gdhqa ;
%LET ir=0.032 ;
%LET ed=22 ;
%LET ef=350 ;
%LET bw=70 ;
%LET area=494 ;
```

```
%include ingdeer ;
```

```
%LET ds_name1=recsigra ;
%LET ds_name2=recso ;
%LET landuse=Recreational ;
%LET grctdi=grctdia ;
%LET grnctdi=grnctdia ;
%LET grrisk=grriska ;
%LET grhq=grhqa ;
%LET ir=0.0165 ;
%LET ed=22 ;
%LET ef=350 ;
%LET bw=70 ;
%LET area=7.7 ;
```

```
%include ingrabt ;
```

```
%LET ds_name1=recsigqa ;
%LET ds_name2=recso ;
%LET landuse=Recreational ;
%LET gqctdi=gqctdia ;
%LET gqncdi=gqncdia ;
%LET gqrisk=gqriskc ;
%LET gqhqc=gqhqa ;
%LET ir=0.0047 ;
```

```
%LET ed=22 ;
%LET ef=350 ;
%LET bw=70 ;
%LET area=25.5 ;
```

```
%include ingqual ;
```

```
* Recreational Teen ;
```

```
%LET ds_name1=recsigdt ;
%LET ds_name2=recso ;
%LET landuse=Recreational ;
%LET gdcddi=gdcddit ;
%LET gdncdi=gdncdit ;
%LET gdrisk=gdriskt ;
%LET gdhq=gdhqt ;
%LET ir=0.032 ;
%LET ed=12 ;
%LET ef=350 ;
%LET bw=43 ;
%LET area=494 ;
```

```
%include ingdeer ;
```

```
%LET ds_name1=recsigrt ;
%LET ds_name2=recso ;
%LET landuse=Recreational ;
%LET grccdi=grccdit ;
%LET grncdi=grncdit ;
%LET grrisk=grriskt ;
%LET grhq=grhqt ;
%LET ir=0.0082 ;
%LET ed=12 ;
%LET ef=350 ;
%LET bw=43 ;
%LET area=7.7 ;
```

```
%include ingrabt ;
```

```
%LET ds_name1=recsigqt ;
%LET ds_name2=recso ;
%LET landuse=Recreational ;
%LET gqccdi=gqccdit ;
%LET gqncdi=gqncdit ;
%LET gqrisk=gqriskt ;
%LET gqhq=gqhqt ;
%LET ir=0.0024 ;
%LET ed=12 ;
%LET ef=350 ;
%LET bw=43 ;
%LET area=25.5 ;
```

```
%include ingqual ;
```

```
data recreate ; merge recsigdc recsigrc recsigqc recsigda recsigra
  recsigqa recsigdt recsigrt recsigqt ;
by location med type med name anatype chemical units ;
gdrisk=sum(gdriska,gdriskc,gdriskt) ;
grrisk=sum(grriska,grriskc,grriskt) ;
gqrisk=sum(gqriska,gqriskc,gqriskt) ;
```

```
*****
* Industrial worker ;
```

```
%LET ds_name1=indsing ;
%LET ds_name2=indso ;
%LET landuse=Industrial ;
%LET gccdi=gccdi ;
%LET gncdi=gncdi ;
%LET grisk=grisk ;
%LET ghq=ghq ;
%LET ir=50 ;
%LET ed=25 ;
%LET ef=250 ;
%LET bw=70 ;
%LET area=0.5 ;
```

```
%include ingsoil ;
```

```
%LET ds_name1=indsder ;
%LET ds_name2=indso ;
```

```

%LET landuse=Industrial ;
%LET dccdi=dccdi ;
%LET dncdi=dncdi ;
%LET drisk=drisk ;
%LET dhq=dhq ;
%LET ed=25 ;
%LET ef=250 ;
%LET bw=70 ;
%LET sa=0.43 ;

%include dersoil ;

%LET ds_name1=indsinh ;
%LET ds_name2=indso ;
%LET landuse=Industrial ;
%LET iccdi=iccdi ;
%LET incdi=incdi ;
%LET irisk=irisk ;
%LET ihq=ihq ;
%LET ir=2.5 ;
%LET et=8 ;
%LET ed=25 ;
%LET ef=250 ;
%LET focvf=0.006 ;
%LET pbvf=1.5 ;
%LET psvf=2.65 ;
%LET theta_wv=0.15 ;
%LET qcvf=73.63 ;
%LET Tvf=9.5e8 ;
%LET qcpef=73.63 ;
%LET vpef=0.5 ;
%LET Umpef=3.58 ;
%LET Utpef=11.32 ;
%LET Fxpef=0.0145 ;

%include inhsoil ;

%LET ds_name1=indsext ;
%LET ds_name2=indso ;
%LET landuse=Industrial ;
%LET xccdi=xccdi ;
%LET xrisk=xrisk ;
%LET se=0.2 ;
%LET te=8/24 ;
%LET ed=25 ;
%LET efx=250/365 ;
%LET area=0.5 ;

%include extsoil ;

data indust ; merge indsing indsder indsinh indsext ;
by location med_type med_name anatype chemical units ;

*****
* Future Industrial worker ;

%LET ds_name1=findsing ;
%LET ds_name2=findso ;
%LET landuse=Future Industrial ;
%LET gccdi=gccdi ;
%LET gncdi=gncdi ;
%LET grisk=grisk ;
%LET ghq=ghq ;
%LET ir=50 ;
%LET ed=25 ;
%LET ef=250 ;
%LET bw=70 ;
%LET area=0.5 ;

%include ingsoil ;

%LET ds_name1=findsder ;
%LET ds_name2=findso ;
%LET landuse=Future Industrial ;
%LET dccdi=dccdi ;
%LET dncdi=dncdi ;
%LET drisk=drisk ;
%LET dhq=dhq ;
%LET ed=25 ;
%LET ef=250 ;
%LET bw=70 ;

```

```

%LET sa=0.43 ;

%include dersoil ;

%LET ds_name1=findsinh ;
%LET ds_name2=findso ;
%LET landuse=Future Industrial ;
%LET iccdi=iccdi ;
%LET incdi=incdi ;
%LET irisk=irisk ;
%LET ihq=ihq ;
%LET ir=2.5 ;
%LET et=8 ;
%LET ed=25 ;
%LET ef=250 ;
%LET focvf=0.006 ;
%LET pbvf=1.5 ;
%LET psvf=2.65 ;
%LET theta_wv=0.15 ;
%LET qcvf=73.63 ;
%LET Tvf=9.5e8 ;
%LET qcpef=73.63 ;
%LET vpef=0.5 ;
%LET Umpef=3.58 ;
%LET Utpef=11.32 ;
%LET Fxpef=0.0145 ;

```

```

%include inhsoil ;

```

```

%LET ds_name1=findsext ;
%LET ds_name2=findso ;
%LET landuse=Future Industrial ;
%LET xccdi=xccdi ;
%LET xrisk=xrisk ;
%LET se=0.2 ;
%LET te=8/24 ;
%LET ed=25 ;
%LET efx=250/365 ;
%LET area=0.5 ;

```

```

%include extsoil ;

```

```

%LET ds_name1=indging ;
%LET ds_name2=findgw ;
%LET landuse=Future Industrial ;
%LET gccdi=gccdi ;
%LET gncdi=gncdi ;
%LET grisk=grisk ;
%LET ghq=ghq ;
%LET ir=1 ;
%LET ed=25 ;
%LET ef=250 ;
%LET bw=70 ;

```

```

%include inggw ;

```

```

%LET ds_name1=indgder ;
%LET ds_name2=findgw ;
%LET landuse=Future Industrial ;
%LET dccdi=dccdi ;
%LET dncdi=dncdi ;
%LET drisk=drisk ;
%LET dhq=dhq ;
%LET sa=1.815 ;
%LET ed=25 ;
%LET ef=250 ;
%LET bw=70 ;
%LET et=0.2 ;

```

```

%include dergw ;

```

```

%LET ds_name1=indgihs ;
%LET ds_name2=findgw ;
%LET landuse=Future Industrial ;
%LET iccdi=iccdi ;
%LET incdi=incdi ;
%LET irisks=irisks ;
%LET ihqs=ihqs ;
%LET ir=0.600 ;
%LET et=0.2 ;
%LET ed=25 ;

```

```

%LET ef=250 ;
%LET bw=70 ;

%include inhsgw ;

data findust ; merge findsing findsder findsinh findsext indging indgder indgihs ;
by location med_type med_name anatype chemical units ;
run ;

*****;
* Excavation worker ;

%LET ds_name1=excscing ;
%LET ds_name2=exc ;
%LET landuse=Excavation ;
%LET gccdi=gccdi ;
%LET gncdi=gncdi ;
%LET grisk=grisk ;
%LET ghq=ghq ;
%LET ir=480 ;
%LET ed=25 ;
%LET ef=185 ;
%LET bw=70 ;
%LET area=size ; * Set ac term to 1 ;

%include ingsoil ;

%LET ds_name1=excscder ;
%LET ds_name2=exc ;
%LET landuse=Excavation ;
%LET dccdi=dccdi ;
%LET dncdi=dncdi ;
%LET drisk=drisk ;
%LET dhq=dhq ;
%LET sa=0.43 ;
%LET ed=25 ;
%LET ef=185 ;
%LET bw=70 ;

%include dersoil ;

%LET ds_name1=excscinh ;
%LET ds_name2=exc ;
%LET landuse=Excavation ;
%LET iccdi=iccdi ;
%LET incdi=incdi ;
%LET irisk=irisk ;
%LET ihq=ihq ;
%LET ir=2.5 ;
%LET et=8 ;
%LET ed=25 ;
%LET ef=185 ;
%LET focvf=0.006 ;
%LET pbvf=1.5 ;
%LET psvf=2.65 ;
%LET theta_wv=0.15 ;
%LET qcvf=73.63 ;
%LET Tvf=9.5e8 ;
%LET qcpef=73.63 ;
%LET vpef=0.5 ;
%LET Umpef=3.58 ;
%LET Utpef=11.32 ;
%LET Fxpef=0.0145 ;

%include inhsoil ;

%LET ds_name1=excscext ;
%LET ds_name2=exc ;
%LET landuse=Excavation ;
%LET xccdi=xccdi ;
%LET xrisk=xrisk ;
%LET se=0.2 ;
%LET te=8/24 ;
%LET ed=25 ;
%LET efx=185/365 ;
%LET area=size ; * Set ac term to 1 ;

%include extsoil ;

data excavate ; merge excscing excscder excscinh excscext ;
by location med_type med_name anatype chemical units ;

```

```
data calcall ; length landuse $30 ;  
set indust findust resident recreate excavate ;  
format totrisk hi hia hic hit e9. ;
```

```
totrisk=sum(grisk,drisk,irisk,xrisk,irisks,iriskh,gvrisk,gdrisk,grrisk,gqrisk) ;
```

```
hi=sum(gbq,dhq,ihq,ihqs) ;  
hia=sum(ihqsa,ghqa,ihqa,dhqa,gvhqa,ihqha,gdhqa,grhqa,gqhqa) ;  
hic=sum(ihqsc,ghqc,ihqc,dhqc,gvhqc,ihqhc,gdhqc,grhqc,gqhqc) ;  
hit=sum(gdhqt,grhqt,gqhqt) ;
```

```
proc sort ; by landuse location med_type med_name anatype chemical ;
```

```
data in.calcall ; set calcall ;
```

```
run ;
```

7d. Two-Way Tables

```

%MACRO CAR2WAY(LANDUSE, NUM, LAND, PATHS, TAB) ;

libname pgdp '/pgdp/wag28' ;
options nodate nonumber missing= ' ' ls=115 ps=80 ;

data risk ; set pgdp.call( rename=(med_name=media iriskh=iriskhh) ) ;
if landuse="&landuse" ;
analyte=trim(chemical) ;

if totrisk>1e-2 then totriskh=1-(exp(-totrisk)) ;
else totriskh=totrisk ;
if drisk>1e-2 then driskh=1-(exp(-drisk)) ;
else driskh=drisk ;
if xrisk>1e-2 then xriskh=1-(exp(-xrisk)) ;
else xriskh=xrisk ;
if irisk>1e-2 then iriskh=1-(exp(-irisk)) ;
else iriskh=irisk ;
if grisk>1e-2 then griskh=1-(exp(-grisk)) ;
else griskh=grisk ;
if irisks>1e-2 then irisksh=1-(exp(-irisks)) ;
else irisksh=irisks ;
if iriskhh>1e-2 then iriskhhh=1-(exp(-iriskhh)) ;
else iriskhhh=iriskhh ;
if gvrisk>1e-2 then gvriskh=1-(exp(-gvrisk)) ;
else gvriskh=gvrisk ;
if gdrisk>1e-2 then gdriskh=1-(exp(-gdrisk)) ;
else gdriskh=gdrisk ;
if grrisk>1e-2 then grriskh=1-(exp(-grrisk)) ;
else grriskh=grrisk ;
if gqrisk>1e-2 then gqriskh=1-(exp(-gqrisk)) ;
else gqriskh=gqrisk ;

keep location media anatype analyte drisk grisk irisks iriskhh totrisk irisk xrisk
gvrisk gdrisk grrisk gqrisk driskh griskh irisksh iriskhhh totriskh iriskh xriskh
gvriskh gdriskh grriskh gqriskh ;
proc sort ; by location media ;

proc means noprint ; by location media ;
var drisk grisk irisks iriskhh irisk xrisk gvrisk gdrisk grrisk gqrisk totrisk ;
output out=summary sum=drisk grisk irisks iriskhh irisk xrisk gvrisk gdrisk grrisk
gqrisk totrisk ;

data sum1 ; set summary ;
drop type freq ;
analyte='Pathway Total' ;
anatype='ZZ' ;
if totrisk>1e-2 then totriskh=1-(exp(-totrisk)) ;
else totriskh=totrisk ;
if drisk>1e-2 then driskh=1-(exp(-drisk)) ;
else driskh=drisk ;
if xrisk>1e-2 then xriskh=1-(exp(-xrisk)) ;
else xriskh=xrisk ;
if irisk>1e-2 then iriskh=1-(exp(-irisk)) ;
else iriskh=irisk ;
if grisk>1e-2 then griskh=1-(exp(-grisk)) ;
else griskh=grisk ;
if irisks>1e-2 then irisksh=1-(exp(-irisks)) ;
else irisksh=irisks ;
if iriskhh>1e-2 then iriskhhh=1-(exp(-iriskhh)) ;
else iriskhhh=iriskhh ;
if gvrisk>1e-2 then gvriskh=1-(exp(-gvrisk)) ;
else gvriskh=gvrisk ;
if gdrisk>1e-2 then gdriskh=1-(exp(-gdrisk)) ;
else gdriskh=gdrisk ;
if grrisk>1e-2 then grriskh=1-(exp(-grrisk)) ;
else grriskh=grrisk ;
if gqrisk>1e-2 then gqriskh=1-(exp(-gqrisk)) ;
else gqriskh=gqrisk ;

data sum2 ; set summary ;
drop type freq ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;
xriskh=xrisk/totrisk ;
driskh=drisk/totrisk ;
griskh=grisk/totrisk ;
iriskh=irisk/totrisk ;

gvriskh=gvrisk/totrisk ;
gdriskh=gdrisk/totrisk ;
grriskh=grrisk/totrisk ;

```



```

gqriskh=gqrisk/totrisk ;

irisksh=irisks/totrisk ;
iriskhh=iriskhh/totrisk ;

data sectotal ; set summary ;
gtotrisk=totrisk ;
keep location media gtotrisk ;

data risk ; merge risk sectotal ; by location media ;

data risk ; set risk sum1 sum2 ;
format totriskh griskh driskh iriskh irisksh iriskhhh xriskh gvriskh gdriskh
      gqriskh grriskh es. ;
format pct_tot 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then
  pct_tot=totrisk/gtotrisk*100 ;

label analyte ='Analyte'
      pct_tot ='% of Total'
      totriskh='Chemical Total'
      driskh   ='Dermal contact'
      griskh   ='Ingestion'
      gvriskh  ='Ingestion of vegetables'
      gdriskh  ='Ingestion of venison'
      grriskh  ='Ingestion of rabbit'
      gqriskh  ='Ingestion of quail'
      xriskh   ='External exposure'
      irisksh  ='Inh. of volatiles while showering'
      iriskhhh='Inh. of volatiles from household use'
      iriskh   ='Inhalation of volatiles and particulates' ;

proc sort ; by location media anatype analyte ;

title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 "Table &num Excess lifetime cancer risks for the &land" ;
footnote1 ' ' ;
footnote2 ' ' ;

filename &tab "wag28 &tab.txt" ;
proc printto print=&tab new ;

proc print noobs uniform label split='*' ; by location media ;
var analyte &paths totriskh pct_tot ;
run ;
%MEND ;

%car2way(Industrial,1.63,current industrial worker,griskh driskh iriskh xriskh,
table63) ;
%car2way(Future Industrial,1.71,future industrial worker,
griskh driskh iriskh irisksh xriskh,table71) ;
%car2way(Residential,1.72,future resident,
griskh driskh iriskh irisksh iriskhhh xriskh gvriskh,table72) ;
%car2way(Recreational,1.73,future recreational user,
gdriskh grriskh gqriskh,table73) ;
%car2way(Excavation,1.74,future excavation worker,griskh driskh iriskh xriskh,
table74) ;

%MACRO NCAR2WAY(LANDUSE,NUM,LAND,TAB,PATHS) ;

libname pgdp '/pgdp/wag28' ;
options nodate nonumber missing=' ' ls=115 ps=80 ;

data hq ; set pgdp.calcall(rename=(med_name=media)) ;
if landuse=:"&landuse" ;
analyte=trim(chemical) ;
label analyte='Analyte'
      hi      ='Chemical Total'
      hia     ='Chemical Total'
      hic     ='Chemical Total'
      hit     ='Chemical Total'

```

```

dhq      ='Dermal contact'
dhqa     ='Dermal contact'
dhqc     ='Dermal contact'
ghq      ='Ingestion'
ghqa     ='Ingestion'
ghqc     ='Ingestion'
gvhqa    ='Ingestion of vegetables'
gvhqc    ='Ingestion of vegetables'
gdhqa    ='Ingestion of venison'
gdhqc    ='Ingestion of venison'
gdhqt    ='Ingestion of venison'
grhqa    ='Ingestion of rabbit'
grhqc    ='Ingestion of rabbit'
grhqt    ='Ingestion of rabbit'
gqhqa    ='Ingestion of quail'
gqhqc    ='Ingestion of quail'
gqhqt    ='Ingestion of quail'
ihq      ='Inhalation of volatiles and particulates'
ihqa     ='Inhalation of volatiles and particulates'
ihqc     ='Inhalation of volatiles and particulates'
ihqs     ='Inh. of volatiles while showering'
ihqsa    ='Inh. of volatiles while showering'
ihqsc    ='Inh. of volatiles while showering'
ihqha    ='Inh. of volatiles from household use'
ihqhc    ='Inh. of volatiles from household use' ;

```

```

keep location media anatype analyte hi hia hic hit dhq dhqa dhqc ihqa ihqc
ghq ghqa ghqc gvhqa gvhqc gdhqa gdhqc gdhqt grhqa grhqc grhqt gqhqa gqhqc gqhqt
ihq ihqs ihqsa ihqsc ihqha ihqhc ;
proc sort ; by location media ;

```

```

proc means noprint ; by location media ;
var hi hia hic hit dhq dhqa dhqc ghq ghqa ghqc gvhqa gvhqc gdhqa gdhqc gdhqt grhqa
grhqc grhqt gqhqa gqhqc gqhqt ihq ihqs ihqsa ihqsc ihqha ihqhc ihqa ihqc;
output out=summary sum=hi hia hic hit dhq dhqa dhqc ghq ghqa ghqc gvhqa gvhqc gdhqa
gdhqc gdhqt grhqa grhqc grhqt gqhqa gqhqc gqhqt ihq ihqs ihqsa ihqsc ihqha ihqhc
ihqa ihqc;

```

```

data sum1 ; set summary ;
drop _type _freq ;
analyte='Pathway Total' ;
anatype='ZZ' ;

```

```

data sum2 ; set summary ;
drop _type _freq ;
analyte='Fraction of Total' ;
anatype='ZZZ' ;

```

```

dhq      = dhq/hi ;
dhqa     = dhqa/hia ;
dhqc     = dhqc/hic ;
ghq      = ghq/hi ;
ghqa     = ghqa/hia ;
ghqc     = ghqc/hic ;
gvhqa    = gvhqa/hia ;
gvhqc    = gvhqc/hic ;
ihq      = ihq/hi ;
ihqa     = ihq/hia ;
ihqc     = ihq/hic ;
ihqs     = ihqs/hi ;
ihqsa    = ihqsa/hia ;
ihqsc    = ihqsc/hic ;
ihqha    = ihqha/hia ;
ihqhc    = ihqhc/hic ;
gdhqa    = gdhqa/hia ;
gdhqc    = gdhqc/hic ;
gdhqt    = gdhqt/hit ;
grhqa    = grhqa/hia ;
grhqc    = grhqc/hic ;
grhqt    = grhqt/hit ;
gqhqa    = gqhqa/hia ;
gqhqc    = gqhqc/hic ;
gqhqt    = gqhqt/hit ;

```

```

data sectotal ; set summary ;
hitot=hi ;
hitota=hia ;
hitotc=hic ;
hitott=hit ;

```

```

keep location media hitot hitota hitotc hitott ;

```

```

data hq ; merge hq sectotal ; by location media ;

data hq ; set hq sum1 sum2 ;
format pct_tot pct_tota pct_totc pct_tott 5.2 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_tot =hi/hitot*100 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_tota=hia/hitota*100 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_totc=hic/hitotc*100 ;
if analyte not in ('Pathway Total','Fraction of Total') then pct_tott=hit/hitott*100 ;

if analyte='Fraction of Total' then do ;
  hi=. ; hia=. ; hic=. ; hit=. ;
end ;
label pct_tot ='% of Total'
      pct_tota='% of Total'
      pct_totc='% of Total'
      pct_tott='% of Total' ;

proc sort ; by location media anatype analyte ;

title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 "Table &num Systemic toxicity for the &land" ;
footnote1 ' ' ;
footnote2 ' ' ;

filename &tab "wag28_&tab..txt" ;
proc printto print=&tab new ;

proc print noobs uniform label split='*' ; by location media ;
var analyte &paths ;
run ;
%MEND ;

%ncar2way(Industrial,1.62.,current industrial worker,table62,ghq dhq ihq hi pct_tot) ;
%ncar2way(Future Industrial,1.64.,future industrial worker,table64,
  ghq dhq ihq ihqs hi pct_tot) ;

%ncar2way(Residential,1.65.,future adult resident,table65,
  ghqa dhqa ihqa ihqsa ihqha gvhqa hia pct_tota) ;
%ncar2way(Residential,1.66.,future child resident,table66,
  ghqc dhqc ihqc ihqsc ihqhc gvhqc hic pct_totc) ;

%ncar2way(Recreational,1.67.,future adult recreational user,table67,
  gdhqa grhqa gqhqa hia pct_tota) ;
%ncar2way(Recreational,1.68.,future teen recreational user,table68,
  gdhqt grhqt gqhqt hit pct_tott) ;
%ncar2way(Recreational,1.69.,future child recreational user,table69,
  gdhqc grhqc gqhqc hic pct_totc) ;

%ncar2way(Excavation,1.70.,future excavation worker,table70,ghq dhq ihq hi pct_tot) ;

```

Section 8
RGO Calculation Program

```

libname pgdp '/pgdp/wag28' ;
options nodate nonumber missing= ' ' ls=150 ps=60 ;

data calcall ; set pgdp.calcall(rename=(med_name=media)) ;
if hi=. and hic ne . then hi=hic ;
drop mcl ;
proc sort ; by landuse location med_type media ;

proc means noprint ; by landuse location med_type media ;
var totrisk hi ;
output out=totals (drop=_type_ _freq_) sum=gtotrisk hi_tot ;

data coc_test ; merge calcall totals ; by landuse location med_type media ;
format gtotrisk hi_tot rgo4 rgo5 rgo6 rgopt1 rgo1 rgo3 e8. ;

analyte=trim(chemical) ;

if gtotrisk>1e-6 and totrisk>1e-6 then riskcoc='Yes' ;
else riskcoc='No' ;

if hi_tot>1 and hi>0.1 then hqcoc='Yes' ;
else hqcoc='No' ;

if riskcoc='Yes' then do ;
    rgo4=c*1e-4/totrisk ;
    rgo5=c*1e-5/totrisk ;
    rgo6=c*1e-6/totrisk ;
end ;

if hqcoc='Yes' and hi ne . then do ;
    rgopt1=c*0.1/hi ;
    rgo1 =c*1/hi ;
    rgo3 =c*3/hi ;
end ;

if riskcoc='No' and hqcoc='No' then delete ;

label analyte ='Analyte'
      c      ='Representative concentration'
      totrisk='Risk at medium'
      hi     ='Hazard Index at medium'
      rgopt1 ='RGO at HI=0.1'
      rgo1   ='RGO at HI=1'
      rgo3   ='RGO at HI=3'
      rgo6   ='RGO at ELCR=1E-06'
      rgo5   ='RGO at ELCR=1E-05'
      rgo4   ='RGO at ELCR=1E-04'
      units  ='Units' ;
proc sort ; by landuse location media anatype analyte ;

filename tab "wag28_table88.txt" ;

data media ; set coc_test ;

title1 ' ' ;
title2 ' ' ;
title3 ' ' ;
title4 ' ' ;
title5 ' ' ;
title6 ' ' ;
title7 ' ' ;
title8 ' ' ;
title9 "Table 1.88. Remedial goal options for WAG 28" ;
footnote1 ' ' ;
footnote2 ' ' ;

proc printto print=tab new ;

proc print noobs uniform label ; by landuse location media ;
var analyte c totrisk hi rgopt1 rgo1 rgo3 rgo6 rgo5 rgo4 units ;

run ;

```

APPENDIX D

COMPLETE TOXICITY PROFILES FOR COCs

The COCs that contribute greater than or equal to 10 percent of the risk for a land use are listed below:

1,1-dichloroethene
antimony
barium
benz(a)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
beryllium
chromium
dibenzo(a,h)anthracene
indeno(1,2,3-cd)pyrene
iron
manganese
neptunium-234
PCB-1016
PCB-1254
PCB-1260
technetium-99
tetrachloroethene
trichloroethene
vanadium

The complete toxicity profiles for these chemicals may be found on the following internet sites:

Risk Assessment Information System http://risk.lsd.ornl.gov/tox/rap_hp.shtml

Integrated Risk Information System <http://www.epa.gov/ngispgm3/iris/index.html>

Agency for Toxic Substances and Disease Registry <http://www.atsdr.cdc.gov/atsdrhom.html>

APPENDIX E

HI AND ELCR SUMMARY

Excavation Hazard Index Estimates

----- LOCATION=AOC 204 PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	3.11E-07	9.00E-03		3.46E-05	
PCB-1254	4.67E-08	1.80E-05		2.59E-03	
PCB-1260	4.67E-08				
Polychlorinated biphenyl	1.87E-07				
Tetrachloroethene	6.30E-06	1.00E-02		6.30E-04	
Trichloroethene	3.24E-06	9.00E-04		3.60E-03	
Pathway Total					6.86E-03

----- LOCATION=AOC 204 PATHWAY=Excavation Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	1.39E-07	9.00E-03		1.54E-05	
PCB-1254	8.69E-08	2.00E-05		4.34E-03	
PCB-1260	8.69E-08				
Polychlorinated biphenyl	3.48E-07				
Tetrachloroethene	2.81E-06	1.00E-02		2.81E-04	
Trichloroethene	1.45E-06	6.00E-03		2.41E-04	
Pathway Total					4.88E-03

----- LOCATION=AOC 204 PATHWAY=Excavation Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	4.46E-06		3.15E-02	1.42E-04	
PCB-1254	7.51E-09		7.00E-05	1.07E-04	
PCB-1260	8.91E-09				
Polychlorinated biphenyl	1.68E-08				
Tetrachloroethene	5.07E-05		6.00E-01	8.45E-05	
Trichloroethene	2.04E-05		2.10E-02	9.72E-04	
Pathway Total					1.31E-03

----- LOCATION=SWMU 193A PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	9.56E-03	1.00E-01		9.56E-02	
Beryllium	9.93E-07	2.00E-05		4.96E-02	
Chromium	1.74E-05	6.00E-05		2.89E-01	
Anthracene	3.61E-07	2.28E-01		1.58E-06	
Benz(a)anthracene	5.60E-07				
Benzo(a)pyrene	7.78E-07				
Benzo(b)fluoranthene	1.59E-07				
Benzo(ghi)perylene	5.29E-07				
Chrysene	5.29E-07				
Di-n-butylphthalate	2.40E-07	1.00E-01		2.40E-06	
Di-n-octylphthalate	3.74E-07	1.80E-02		2.08E-05	
Dibenz(a,h)anthracene	4.05E-07				
Fluoranthene	9.65E-07	1.24E-02		7.78E-05	
Indeno(1,2,3-cd)pyrene	4.98E-07				
Pyrene	8.27E-07	9.30E-03		8.89E-05	
bis(2-Ethylhexyl)phthalate	5.29E-07	3.80E-03		1.39E-04	

Excavation Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Excavation Dermal Contact with Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Pathway Total					4.35E-01

----- LOCATION=SWMU 193A PATHWAY=Excavation Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	2.14E-02	1.00E+00		2.14E-02	
Beryllium	2.22E-06	2.00E-03		1.11E-03	
Chromium	3.88E-05	3.00E-03		1.29E-02	
Anthracene	4.03E-07	3.00E-01		1.34E-06	
Benz (a) anthracene	6.26E-07				
Benzo (a) pyrene	8.69E-07				
Benzo (b) fluoranthene	1.77E-07				
Benzo (ghi) perylene	5.91E-07				
Chrysene	5.91E-07				
Di-n-butylphthalate	2.68E-07	1.00E-01		2.68E-06	
Di-n-octylphthalate	4.17E-07	2.00E-02		2.09E-05	
Dibenz (a, h) anthracene	4.52E-07				
Fluoranthene	1.08E-06	4.00E-02		2.69E-05	
Indeno (1, 2, 3-cd) pyrene	5.56E-07				
Pyrene	9.23E-07	3.00E-02		3.08E-05	
bis(2-Ethylhexyl)phthalate	5.91E-07	2.00E-02		2.95E-05	
Pathway Total					3.55E-02

----- LOCATION=SWMU 193A PATHWAY=Excavation Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	3.23E-08				
Beryllium	3.36E-12		2.00E-05	1.68E-07	
Chromium	5.87E-11		1.00E-04	5.87E-07	
Anthracene	2.37E-08		1.05E+00	2.26E-08	
Benz (a) anthracene	3.04E-09				
Benzo (a) pyrene	1.63E-09				
Benzo (b) fluoranthene	1.76E-09				
Benzo (ghi) perylene	8.95E-13				
Chrysene	9.97E-09				
Di-n-butylphthalate	1.52E-09		3.50E-01	4.35E-09	
Di-n-octylphthalate	3.20E-10		7.00E-02	4.57E-09	
Dibenz (a, h) anthracene	1.99E-10				
Fluoranthene	1.62E-08		1.40E-01	1.16E-07	
Indeno (1, 2, 3-cd) pyrene	4.48E-10				
Pyrene	1.12E-08		1.05E-01	1.06E-07	
bis(2-Ethylhexyl)phthalate	1.26E-10		7.00E-02	1.80E-09	
Pathway Total					1.01E-06

----- LOCATION=SWMU 193B PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	1.09E-06	2.00E-05		5.46E-02	

Excavation Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Excavation Dermal Contact with Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	5.98E-05	6.00E-05		9.96E-01	
Vanadium	4.50E-05	7.00E-05		6.42E-01	
Pathway Total					1.69E+00

----- LOCATION=SWMU 193B PATHWAY=Excavation Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	2.44E-06	2.00E-03		1.22E-03	
Chromium	1.33E-04	3.00E-03		4.45E-02	
Vanadium	1.00E-04	7.00E-03		1.43E-02	
Pathway Total					6.00E-02

----- LOCATION=SWMU 193B PATHWAY=Excavation Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	3.69E-12		2.00E-05	1.85E-07	
Chromium	2.02E-10		1.00E-04	2.02E-06	
Vanadium	1.52E-10				
Pathway Total					2.21E-06

----- LOCATION=SWMU 193C PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	8.03E-03	1.00E-01		8.03E-02	
Beryllium	1.06E-06	2.00E-05		5.31E-02	
Cadmium	6.38E-07	1.00E-05		6.38E-02	
Chromium	3.35E-05	6.00E-05		5.58E-01	
Cobalt	1.58E-05	4.80E-02		3.29E-04	
Iron	2.16E-02	4.50E-02		4.80E-01	
Lead	2.12E-05	1.50E-08		1.41E+03	
Manganese	5.93E-04	1.84E-03		3.22E-01	
Vanadium	1.98E-05	7.00E-05		2.83E-01	
Zinc	9.27E-05	6.00E-02		1.54E-03	
Xylene	2.21E-08	1.84E+00		1.20E-08	
Pathway Total					1.41E+03

----- LOCATION=SWMU 193C PATHWAY=Excavation Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	1.79E-02	1.00E+00		1.79E-02	
Beryllium	2.37E-06	2.00E-03		1.19E-03	
Cadmium	7.12E-06	1.00E-03		7.12E-03	
Chromium	7.47E-05	3.00E-03		2.49E-02	
Cobalt	3.52E-05	6.00E-02		5.87E-04	

Excavation Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Excavation Ingestion of Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron	4.83E-02	3.00E-01		1.61E-01	
Lead	4.72E-05	1.00E-07		4.72E+02	
Manganese	1.32E-03	4.60E-02		2.88E-02	
Vanadium	4.43E-05	7.00E-03		6.33E-03	
Zinc	2.07E-04	3.00E-01		6.90E-04	
Xylene	9.87E-09	2.00E+00		4.94E-09	
Pathway Total					4.73E+02

----- LOCATION=SWMU 193C PATHWAY=Excavation Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	2.72E-08				
Beryllium	3.59E-12		2.00E-05	1.80E-07	
Cadmium	1.08E-11		2.00E-04	5.39E-08	
Chromium	1.13E-10		1.00E-04	1.13E-06	
Cobalt	5.33E-11		2.00E-05	2.67E-06	
Iron	4.29E+01				
Lead	7.15E-11		1.00E-03	7.15E-08	
Manganese	2.00E-09		5.00E-05	4.01E-05	
Vanadium	6.70E-11				
Zinc	3.13E-10				
Xylene	6.64E-08		7.00E+00	9.48E-09	
Pathway Total					4.42E-05

----- LOCATION=SWMU 194 PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	8.42E-03	1.00E-01		8.42E-02	
Beryllium	1.99E-06	2.00E-05		9.97E-02	
Cadmium	7.07E-07	1.00E-05		7.07E-02	
Chromium	1.63E-05	6.00E-05		2.72E-01	
Lead	2.46E-05	1.50E-08		1.64E+03	
Zinc	7.92E-05	6.00E-02		1.32E-03	
Ethylbenzene	2.51E-08	9.70E-02		2.58E-07	
Pathway Total					1.64E+03

----- LOCATION=SWMU 194 PATHWAY=Excavation Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	1.88E-02	1.00E+00		1.88E-02	
Beryllium	4.45E-06	2.00E-03		2.23E-03	
Cadmium	7.89E-06	1.00E-03		7.89E-03	
Chromium	3.65E-05	3.00E-03		1.22E-02	
Lead	5.49E-05	1.00E-07		5.49E+02	
Zinc	1.77E-04	3.00E-01		5.89E-04	
Ethylbenzene	1.12E-08	1.00E-01		1.12E-07	
Pathway Total					5.49E+02

Excavation Hazard Index Estimates

----- LOCATION=SWMU 194 PATHWAY=Excavation Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	2.85E-08				
Beryllium	6.74E-12		2.00E-05	3.37E-07	
Cadmium	1.19E-11		2.00E-04	5.98E-08	
Chromium	5.52E-11		1.00E-04	5.52E-07	
Lead	8.32E-11		1.00E-03	8.32E-08	
Zinc	2.68E-10				
Ethylbenzene	9.53E-08		1.00E+00	9.53E-08	
Pathway Total					1.13E-06

----- LOCATION=SWMU 99A PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	7.00E-03	1.00E-01		7.00E-02	
Antimony	3.93E-06	8.00E-06		4.91E-01	
Arsenic	4.68E-06	1.23E-04		3.80E-02	
Barium	1.81E-04	4.90E-03		3.68E-02	
Beryllium	4.75E-07	2.00E-05		2.38E-02	
Cadmium	2.58E-07	1.00E-05		2.58E-02	
Chromium	1.31E-05	6.00E-05		2.18E-01	
Lead	2.81E-05	1.50E-08		1.88E+03	
Manganese	3.37E-04	1.84E-03		1.83E-01	
Thallium	9.18E-07				
Zinc	1.42E-04	6.00E-02		2.36E-03	
1,1-Dichloroethene	4.67E-08	9.00E-03		5.19E-06	
1,2,4-Trichlorobenzene	1.28E-06	9.70E-03		1.32E-04	
1,2-Dichlorobenzene	3.19E-06	7.20E-02		4.43E-05	
1,3-Dichlorobenzene	3.19E-06	2.40E-02		1.33E-04	
1,4-Dichlorobenzene	3.19E-06				
2,4,5-Trichlorophenol	1.67E-06	5.00E-02		3.33E-05	
2,4,6-Trichlorophenol	1.28E-06				
2,4-Dinitrotoluene	1.28E-06	1.70E-03		7.51E-04	
2,6-Dinitrotoluene	1.28E-06	8.50E-04		1.50E-03	
2-Chloronaphthalene	1.28E-06	4.00E-02		3.19E-05	
2-Hexanone	4.59E-08				
2-Methyl-4,6-dinitrophenol	1.67E-06				
2-Methylnaphthalene	1.28E-06				
2-Nitroaniline	1.67E-06	3.00E-05		5.55E-02	
2-Nitrophenol					
3,3'-Dichlorobenzidine	9.53E-07				
3-Nitroaniline	1.67E-06				
4,4'-DDD	1.09E-07				
4,4'-DDE	1.09E-07				
4,4'-DDT	1.09E-07	3.50E-04		3.11E-04	
4-Bromophenyl phenyl ether	1.28E-06				
4-Chloro-3-methylphenol					
4-Chlorophenyl phenyl ether					
4-Nitroaniline	1.67E-06				
Acenaphthene	7.52E-07	1.86E-02		4.04E-05	
Acenaphthylene	7.80E-07				
Aldrin	5.29E-08	1.50E-05		3.53E-03	
Anthracene	1.52E-06	2.28E-01		6.66E-06	
Benz(a)anthracene	1.83E-06				
Benzo(a)pyrene	1.98E-06				
Benzo(b)fluoranthene	2.40E-06				
Benzo(ghi)perylene	1.63E-06				
Benzo(k)fluoranthene	1.55E-06				
Butyl benzyl phthalate	6.86E-07	1.22E-01		5.62E-06	

Excavation Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Excavation Dermal Contact with Soil -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chrysene	1.93E-06				
Di-n-butylphthalate	1.28E-06	1.00E-01		1.28E-05	
Di-n-octylphthalate	1.28E-06	1.80E-02		7.09E-05	
Dibenz(a,h)anthracene	1.39E-06				
Dibenzofuran	7.64E-07	2.00E-03		3.82E-04	
Dieldrin	1.09E-07	2.50E-05		4.36E-03	
Endosulfan I					
Endosulfan II					
Endosulfan Sulfate					
Endrin	1.09E-07	6.00E-06		1.82E-02	
Endrin Ketone					
Ethylbenzene	3.46E-08	9.70E-02		3.57E-07	
Fluoranthene	1.98E-06	1.24E-02		1.60E-04	
Fluorene	7.62E-07	2.00E-02		3.81E-05	
Heptachlor	5.29E-08	3.60E-04		1.47E-04	
Heptachlor Epoxide	5.29E-08	9.36E-06		5.65E-03	
Hexachlorobenzene	1.28E-06	4.00E-04		3.19E-03	
Hexachlorobutadiene	1.28E-06	1.00E-04		1.28E-02	
Hexachlorocyclopentadiene	1.28E-06	3.50E-03		3.65E-04	
Hexachloroethane	1.28E-06	5.00E-04		2.55E-03	
Indeno(1,2,3-cd)pyrene	1.66E-06				
Methoxychlor	5.29E-07	2.50E-03		2.12E-04	
N-Nitroso-di-n-propylamine	1.28E-06				
N-Nitrosodiphenylamine	1.28E-06				
Naphthalene	1.28E-06	1.60E-02		7.98E-05	
PCB-1016	3.16E-07	6.30E-05		5.02E-03	
PCB-1221	2.30E-07				
PCB-1232	2.30E-07				
PCB-1242	2.30E-07				
PCB-1248	2.30E-07				
PCB-1254	2.62E-07	1.80E-05		1.46E-02	
PCB-1260	3.27E-07				
Pentachlorophenol	1.67E-06	3.00E-02		5.55E-05	
Phenanthrene	1.78E-06				
Pyrene	2.04E-06	9.30E-03		2.19E-04	
Toxaphene	1.09E-06				
Vinyl Chloride	9.34E-08				
Xylene	2.51E-08	1.84E+00		1.36E-08	
alpha-BHC	5.29E-08				
alpha-Chlordane					
beta-BHC	5.29E-08				
bis(2-Chloroethoxy)methane	1.28E-06				
bis(2-Chloroethyl) ether	1.28E-06				
bis(2-Chloroisopropyl) ether	1.28E-06				
bis(2-Ethylhexyl)phthalate	7.50E-07	3.80E-03		1.97E-04	
cis-1,3-Dichloropropene					
delta-BHC	5.29E-08				
gamma-BHC (Lindane)	5.29E-08	2.91E-04		1.82E-04	
gamma-Chlordane					
trans-1,3-Dichloropropene					
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					1.88E+03

Excavation Hazard Index Estimates

----- LOCATION-SWMU 99A PATHWAY-Excavation Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	1.56E-02	1.00E+00		1.56E-02	
Antimony	8.76E-06	4.00E-04		2.19E-02	
Arsenic	1.04E-05	3.00E-04		3.48E-02	
Barium	4.03E-04	7.00E-02		5.76E-03	
Beryllium	1.06E-06	2.00E-03		5.31E-04	
Cadmium	2.88E-06	1.00E-03		2.88E-03	
Chromium	2.92E-05	3.00E-03		9.74E-03	
Lead	6.28E-05	1.00E-07		6.28E+02	
Manganese	7.53E-04	4.60E-02		1.64E-02	
Thallium	2.05E-06				
Zinc	3.16E-04	3.00E-01		1.05E-03	
1,1-Dichloroethene	2.09E-08	9.00E-03		2.32E-06	
1,2,4-Trichlorobenzene	1.42E-06	1.00E-02		1.42E-04	
1,2-Dichlorobenzene	1.42E-06	9.00E-02		1.58E-05	
1,3-Dichlorobenzene	1.42E-06	3.00E-02		4.75E-05	
1,4-Dichlorobenzene	1.42E-06				
2,4,5-Trichlorophenol	1.86E-06	1.00E-01		1.86E-05	
2,4,6-Trichlorophenol	1.42E-06				
2,4-Dinitrotoluene	1.42E-06	2.00E-03		7.12E-04	
2,6-Dinitrotoluene	1.42E-06	1.00E-03		1.42E-03	
2-Chloronaphthalene	1.42E-06	8.00E-02		1.78E-05	
2-Hexanone	2.05E-08				
2-Methyl-4,6-dinitrophenol	1.86E-06				
2-Methylnaphthalene	1.42E-06				
2-Nitroaniline	1.86E-06	6.00E-05		3.10E-02	
2-Nitrophenol	1.42E-06				
3,3'-Dichlorobenzidine	1.06E-06				
3-Nitroaniline	1.86E-06				
4,4'-DDD	1.22E-07				
4,4'-DDE	1.22E-07				
4,4'-DDT	1.22E-07	5.00E-04		2.43E-04	
4-Bromophenyl phenyl ether	1.42E-06				
4-Chloro-3-methylphenol	1.42E-06				
4-Chlorophenyl phenyl ether	1.42E-06				
4-Nitroaniline	1.86E-06				
Acenaphthene	8.39E-07	6.00E-02		1.40E-05	
Acenaphthylene	8.70E-07				
Aldrin	5.91E-08	3.00E-05		1.97E-03	
Anthracene	1.70E-06	3.00E-01		5.65E-06	
Benz(a)anthracene	2.04E-06				
Benzo(a)pyrene	2.21E-06				
Benzo(b)fluoranthene	2.68E-06				
Benzo(ghi)perylene	1.82E-06				
Benzo(k)fluoranthene	1.73E-06				
Butyl benzyl phthalate	7.66E-07	2.00E-01		3.83E-06	
Chrysene	2.16E-06				
Di-n-butylphthalate	1.42E-06	1.00E-01		1.42E-05	
Di-n-octylphthalate	1.42E-06	2.00E-02		7.12E-05	
Dibenz(a,h)anthracene	1.55E-06				
Dibenzofuran	8.53E-07	4.00E-03		2.13E-04	
Dieldrin	1.22E-07	5.00E-05		2.43E-03	
Endosulfan I	5.91E-08				
Endosulfan II	1.22E-07				
Endosulfan Sulfate	1.22E-07				
Endrin	1.22E-07	3.00E-04		4.05E-04	
Endrin Ketone	1.22E-07				
Ethylbenzene	1.54E-08	1.00E-01		1.54E-07	
Fluoranthene	2.21E-06	4.00E-02		5.54E-05	
Fluorene	8.50E-07	4.00E-02		2.13E-05	
Heptachlor	5.91E-08	5.00E-04		1.18E-04	
Heptachlor Epoxide	5.91E-08	1.30E-05		4.54E-03	

Excavation Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Excavation Ingestion of Soil -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Hexachlorobenzene	1.42E-06	8.00E-04		1.78E-03	
Hexachlorobutadiene	1.42E-06	2.00E-04		7.12E-03	
Hexachlorocyclopentadiene	1.42E-06	7.00E-03		2.04E-04	
Hexachloroethane	1.42E-06	1.00E-03		1.42E-03	
Indeno (1,2,3-cd)pyrene	1.86E-06				
Methoxychlor	5.91E-07	5.00E-03		1.18E-04	
N-Nitroso-di-n-propylamine	1.42E-06				
N-Nitrosodiphenylamine	1.42E-06				
Naphthalene	1.42E-06	2.00E-02		7.12E-05	
PCB-1016	5.88E-07	7.00E-05		8.41E-03	
PCB-1221	4.28E-07				
PCB-1232	4.28E-07				
PCB-1242	4.28E-07				
PCB-1248	4.28E-07				
PCB-1254	4.88E-07	2.00E-05		2.44E-02	
PCB-1260	6.09E-07				
Pentachlorophenol	1.86E-06	3.00E-02		6.20E-05	
Phenanthrene	1.98E-06				
Pyrene	2.27E-06	3.00E-02		7.57E-05	
Toxaphene	1.22E-06				
Vinyl Chloride	4.17E-08				
Xylene	1.12E-08	2.00E+00		5.61E-09	
alpha-BHC	5.91E-08				
alpha-Chlordane	5.91E-07				
beta-BHC	5.91E-08				
bis (2-Chloroethoxy)methane	1.42E-06				
bis (2-Chloroethyl) ether	1.42E-06				
bis (2-Chloroisopropyl) ether	1.42E-06				
bis (2-Ethylhexyl) phthalate	8.37E-07	2.00E-02		4.18E-05	
cis-1,3-Dichloropropene	1.54E-08				
delta-BHC	5.91E-08				
gamma-BHC (Lindane)	5.91E-08	3.00E-04		1.97E-04	
gamma-Chlordane	5.91E-07				
trans-1,3-Dichloropropene	1.54E-08				
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					6.28E+02

----- LOCATION=SWMU 99A PATHWAY=Excavation Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	2.37E-08				
Antimony	1.33E-11				
Arsenic	1.58E-11				
Barium	6.10E-10		5.00E-04	1.22E-06	
Beryllium	1.61E-12		2.00E-05	8.03E-08	
Cadmium	4.37E-12		2.00E-04	2.19E-08	
Chromium	4.42E-11		1.00E-04	4.42E-07	
Lead	9.51E-11		1.00E-03	9.51E-08	
Manganese	1.14E-09		5.00E-05	2.28E-05	
Thallium	3.10E-12				
Zinc	4.79E-10				

Excavation Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Excavation Inhalation of Soil -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	6.69E-07		3.15E-02	2.12E-05	
1,2,4-Trichlorobenzene	1.52E-06		2.00E-01	7.59E-06	
1,2-Dichlorobenzene	4.48E-06		2.00E-01	2.24E-05	
1,3-Dichlorobenzene	2.16E-12		8.05E-03	2.68E-10	
1,4-Dichlorobenzene	5.06E-06		8.00E-01	6.32E-06	
2,4,5-Trichlorophenol	1.23E-07		3.50E-01	3.50E-07	
2,4,6-Trichlorophenol	2.55E-07				
2,4-Dinitrotoluene	1.85E-07		7.00E-03	2.64E-05	
2,6-Dinitrotoluene	2.27E-07		3.50E-03	6.49E-05	
2-Chloronaphthalene	2.33E-06		2.80E-01	8.34E-06	
2-Hexanone	3.10E-14				
2-Methyl-4,6-dinitrophenol	1.25E-07				
2-Methylnaphthalene	1.54E-07				
2-Nitroaniline	7.24E-06		2.00E-04	3.62E-02	
2-Nitrophenol	2.16E-12				
3,3'-Dichlorobenzidine	3.79E-08				
3-Nitroaniline	2.81E-12				
4,4'-DDD	2.40E-10				
4,4'-DDE	2.25E-10				
4,4'-DDT	1.84E-10		1.75E-03	1.05E-07	
4-Bromophenyl phenyl ether	2.16E-12				
4-Chloro-3-methylphenol	2.16E-12				
4-Chlorophenyl phenyl ether	2.16E-12				
4-Nitroaniline	2.81E-12				
Acenaphthene	1.77E-07		2.10E-01	8.41E-07	
Acenaphthylene	1.35E-07				
Aldrin	3.93E-10		1.05E-04	3.74E-06	
Anthracene	9.97E-08		1.05E+00	9.50E-08	
Benz (a) anthracene	9.93E-09				
Benzo (a) pyrene	4.15E-09				
Benzo (b) fluoranthene	2.65E-08				
Benzo (ghi) perylene	2.76E-12				
Benzo (k) fluoranthene	2.02E-09				
Butyl benzyl phthalate	4.19E-09		7.00E-01	5.99E-09	
Chrysene	3.64E-08				
Di-n-butylphthalate	8.10E-09		3.50E-01	2.31E-08	
Di-n-octylphthalate	1.09E-09		7.00E-02	1.56E-08	
Dibenz (a,h) anthracene	6.83E-10				
Dibenzofuran	9.67E-08		1.40E-02	6.91E-06	
Dieldrin	2.59E-09		1.75E-04	1.48E-05	
Endosulfan I	8.95E-14				
Endosulfan II	1.84E-13				
Endosulfan Sulfate	1.84E-13				
Endrin	2.49E-09		1.05E-03	2.37E-06	
Endrin Ketone	1.84E-13				
Ethylbenzene	1.32E-07		1.00E+00	1.32E-07	
Fluoranthene	3.33E-08		1.40E-01	2.38E-07	
Fluorene	7.65E-08		1.40E-01	5.46E-07	
Heptachlor	1.20E-09		1.75E-03	6.88E-07	
Heptachlor Epoxide	5.26E-10		4.55E-05	1.16E-05	
Hexachlorobenzene	3.56E-07		2.80E-03	1.27E-04	
Hexachlorobutadiene	9.09E-07		7.00E-04	1.30E-03	
Hexachlorocyclopentadiene	4.60E-07		7.00E-05	6.57E-03	
Hexachloroethane	7.24E-07		3.50E-03	2.07E-04	
Indeno (1,2,3-cd) pyrene	1.50E-09				
Methoxychlor	6.66E-09		1.75E-02	3.81E-07	
N-Nitroso-di-n-propylamine	5.92E-07				
N-Nitrosodiphenylamine	1.14E-07				
Naphthalene	1.17E-06		3.00E-03	3.91E-04	
PCB-1016	5.69E-08		2.45E-04	2.32E-04	

Excavation Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Excavation Inhalation of Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
PCB-1221	6.48E-13				
PCB-1232	6.48E-13				
PCB-1242	5.44E-08				
PCB-1248	6.48E-13				
PCB-1254	4.22E-08		7.00E-05	6.03E-04	
PCB-1260	6.24E-08				
Pentachlorophenol	7.21E-08		1.05E-01	6.86E-07	
Phenanthrene	3.00E-12				
Pyrene	2.75E-08		1.05E-01	2.62E-07	
Toxaphene	4.76E-09				
Vinyl Chloride	1.84E-06				
Xylene	7.54E-08		7.00E+00	1.08E-08	
alpha-BHC	4.80E-09				
alpha-Chlordane	8.95E-13				
beta-BHC	2.04E-09				
bis(2-Chloroethoxy)methane	2.16E-12				
bis(2-Chloroethyl) ether	1.96E-06				
bis(2-Chloroisopropyl) ether	2.26E-06				
bis(2-Ethylhexyl)phthalate	1.79E-10		7.00E-02	2.56E-09	
cis-1,3-Dichloropropene	2.34E-14				
delta-BHC	8.95E-14				
gamma-BHC(Lindane)	5.82E-09		1.05E-03	5.54E-06	
gamma-Chlordane	8.95E-13				
trans-1,3-Dichloropropene	2.34E-14				
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					4.59E-02

----- LOCATION=SWMU 99B PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	1.10E-02	1.00E-01		1.10E-01	
Arsenic	5.38E-06	1.23E-04		4.38E-02	
Beryllium	1.23E-06	2.00E-05		6.14E-02	
Chromium	1.66E-05	6.00E-05		2.76E-01	
Methylene Chloride	4.67E-06	5.70E-02		8.19E-05	
Pathway Total					4.91E-01

----- LOCATION=SWMU 99B PATHWAY=Excavation Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	2.45E-02	1.00E+00		2.45E-02	
Arsenic	1.20E-05	3.00E-04		4.01E-02	
Beryllium	2.74E-06	2.00E-03		1.37E-03	
Chromium	3.70E-05	3.00E-03		1.23E-02	
Methylene Chloride	2.09E-06	6.00E-02		3.48E-05	
Pathway Total					7.83E-02

Excavation Hazard Index Estimates

----- LOCATION=SWMU 99B PATHWAY=Excavation Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	3.70E-08				
Arsenic	1.82E-11				
Beryllium	4.15E-12		2.00E-05	2.08E-07	
Chromium	5.60E-11		1.00E-04	5.60E-07	
Methylene Chloride	3.84E-05		3.00E+00	1.28E-05	
Pathway Total					1.36E-05

Excavation Excess Lifetime Cancer Risks

----- LOCATION=AOC 204 PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	1.11E-07	6.00E-01		6.67E-08	
PCB-1254	1.67E-08	2.22E+00		3.71E-08	
PCB-1260	1.67E-08	2.22E+00		3.71E-08	
Polychlorinated biphenyl	6.67E-08	2.22E+00		1.48E-07	
Tetrachloroethene	2.25E-06	5.20E-02		1.17E-07	
Trichloroethene	1.16E-06	7.33E-02		8.50E-08	
Pathway Total					4.91E-07

----- LOCATION=AOC 204 PATHWAY=Excavation External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene.					
PCB-1254					
PCB-1260					
Polychlorinated biphenyl					
Tetrachloroethene					
Trichloroethene					
Pathway Total					

----- LOCATION=AOC 204 PATHWAY=Excavation Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	4.97E-08	6.00E-01		2.98E-08	
PCB-1254	3.10E-08	2.00E+00		6.21E-08	
PCB-1260	3.10E-08	2.00E+00		6.21E-08	
Polychlorinated biphenyl	1.24E-07	2.00E+00		2.48E-07	
Tetrachloroethene	1.01E-06	5.20E-02		5.23E-08	
Trichloroethene	5.17E-07	1.10E-02		5.69E-09	
Pathway Total					4.60E-07

----- LOCATION=AOC 204 PATHWAY=Excavation Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	1.59E-06		5.00E-02	7.96E-08	
PCB-1254	2.68E-09		5.71E-01	1.53E-09	
PCB-1260	3.18E-09		5.71E-01	1.82E-09	
Polychlorinated biphenyl	6.01E-09		5.71E-01	3.44E-09	
Tetrachloroethene	1.81E-05		5.80E-04	1.05E-08	
Trichloroethene	7.29E-06		1.70E-03	1.24E-08	
Pathway Total					1.09E-07

----- LOCATION=SWMU 193A PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	3.42E-03				

Excavation Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Excavation Dermal Contact with Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	3.55E-07	4.30E+02		1.52E-04	
Chromium	6.20E-06				
Anthracene	1.29E-07				
Benz (a) anthracene	2.00E-07	2.35E+00		4.71E-07	
Benzo (a) pyrene	2.78E-07	2.35E+01		6.55E-06	
Benzo (b) fluoranthene	5.67E-08	2.35E+00		1.34E-07	
Benzo (ghi) perylene	1.89E-07				
Chrysene	1.89E-07	2.35E-02		4.45E-09	
Di-n-butylphthalate	8.56E-08				
Di-n-octylphthalate	1.33E-07				
Dibenz (a, h) anthracene	1.45E-07	2.35E+01		3.40E-06	
Fluoranthene	3.45E-07				
Indeno (1, 2, 3-cd) pyrene	1.78E-07	2.35E+00		4.19E-07	
Pyrene	2.95E-07				
bis (2-Ethylhexyl) phthalate	1.89E-07	7.37E-02		1.39E-08	
Pathway Total					1.63E-04

----- LOCATION=SWMU 193A PATHWAY=Excavation External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Beryllium					
Chromium					
Anthracene					
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Chrysene					
Di-n-butylphthalate					
Di-n-octylphthalate					
Dibenz (a, h) anthracene					
Fluoranthene					
Indeno (1, 2, 3-cd) pyrene					
Pyrene					
bis (2-Ethylhexyl) phthalate					
Pathway Total					

----- LOCATION=SWMU 193A PATHWAY=Excavation Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	7.63E-03				
Beryllium	7.92E-07	4.30E+00		3.40E-06	
Chromium	1.38E-05				
Anthracene	1.44E-07				
Benz (a) anthracene	2.23E-07	7.30E-01		1.63E-07	
Benzo (a) pyrene	3.10E-07	7.30E+00		2.27E-06	
Benzo (b) fluoranthene	6.33E-08	7.30E-01		4.62E-08	
Benzo (ghi) perylene	2.11E-07				
Chrysene	2.11E-07	7.30E-03		1.54E-09	
Di-n-butylphthalate	9.56E-08				
Di-n-octylphthalate	1.49E-07				

Excavation Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Excavation Ingestion of Soil -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Dibenz (a, h) anthracene	1.61E-07	7.30E+00		1.18E-06	
Fluoranthene	3.85E-07				
Indeno(1,2,3-cd)pyrene	1.99E-07	7.30E-01		1.45E-07	
Pyrene	3.30E-07				
bis(2-Ethylhexyl)phthalate	2.11E-07	1.40E-02		2.95E-09	
Pathway Total					7.21E-06

----- LOCATION=SWMU 193A PATHWAY=Excavation Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	1.15E-08				
Beryllium	1.20E-12		2.40E+00	2.88E-12	
Chromium	2.10E-11		1.20E+01	2.52E-10	
Anthracene	8.47E-09				
Benz (a) anthracene	1.09E-09		8.80E-02	9.56E-11	
Benzo (a) pyrene	5.82E-10		8.80E-01	5.12E-10	
Benzo (b) fluoranthene	6.28E-10		8.80E-02	5.52E-11	
Benzo (ghi) perylene	3.19E-13				
Chrysene	3.56E-09		8.80E-04	3.13E-12	
Di-n-butylphthalate	5.43E-10				
Di-n-octylphthalate	1.14E-10				
Dibenz (a, h) anthracene	7.12E-11		8.80E-01	6.27E-11	
Fluoranthene	5.78E-09				
Indeno(1,2,3-cd)pyrene	1.60E-10		8.80E-02	1.41E-11	
Pyrene	3.98E-09				
bis(2-Ethylhexyl)phthalate	4.51E-11				
Pathway Total					9.97E-10

----- LOCATION=SWMU 193B PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	3.90E-07	4.30E+02		1.68E-04	
Chromium	2.13E-05				
Vanadium	1.61E-05				
Pathway Total					1.68E-04

----- LOCATION=SWMU 193B PATHWAY=Excavation External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium					
Chromium					
Vanadium					
Pathway Total					

Excavation Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Excavation Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	8.71E-07	4.30E+00		3.75E-06	
Chromium	4.77E-05				
Vanadium	3.58E-05				
Pathway Total					3.75E-06

----- LOCATION=SWMU 193B PATHWAY=Excavation Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	1.32E-12		2.40E+00	3.17E-12	
Chromium	7.22E-11		1.20E+01	8.66E-10	
Vanadium	5.43E-11				
Pathway Total					8.69E-10

----- LOCATION=SWMU 193C PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	2.87E-03				
Beryllium	3.80E-07	4.30E+02		1.63E-04	
Cadmium	2.28E-07				
Chromium	1.20E-05				
Cobalt	5.63E-06				
Iron	7.72E-03				
Lead	7.56E-06				
Manganese	2.12E-04				
Vanadium	7.08E-06				
Zinc	3.31E-05				
Xylene	7.90E-09				
Pathway Total					1.63E-04

----- LOCATION=SWMU 193C PATHWAY=Excavation External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Beryllium					
Cadmium					
Chromium					
Cobalt					
Iron					
Lead					
Manganese					
Vanadium					
Zinc					
Xylene					
Pathway Total					

Excavation Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Excavation Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	6.41E-03				
Beryllium	8.47E-07	4.30E+00		3.64E-06	
Cadmium	2.54E-06				
Chromium	2.67E-05				
Cobalt	1.26E-05				
Iron	1.72E-02				
Lead	1.69E-05				
Manganese	4.72E-04				
Vanadium	1.58E-05				
Zinc	7.39E-05				
Xylene	3.53E-09				
Pathway Total					3.64E-06

----- LOCATION=SWMU 193C PATHWAY=Excavation Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	9.70E-09				
Beryllium	1.28E-12		2.40E+00	3.08E-12	
Cadmium	3.85E-12		1.80E+00	6.93E-12	
Chromium	4.04E-11		1.20E+01	4.85E-10	
Cobalt	1.90E-11				
Iron	1.53E+01				
Lead	2.55E-11				
Manganese	7.15E-10				
Vanadium	2.39E-11				
Zinc	1.12E-10				
Xylene	2.37E-08				
Pathway Total					4.95E-10

----- LOCATION=SWMU 194 PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	3.01E-03				
Beryllium	7.12E-07	4.30E+02		3.06E-04	
Cadmium	2.52E-07				
Chromium	5.84E-06				
Lead	8.79E-06				
Zinc	2.83E-05				
Ethylbenzene	8.95E-09				
Pathway Total					3.06E-04

----- LOCATION=SWMU 194 PATHWAY=Excavation External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Beryllium					
Cadmium					
Chromium					
Lead					

Excavation Excess Lifetime Cancer Risks

----- LOCATION-SWMU 194 PATHWAY=Excavation External Exposure to Soil -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Zinc					
Ethylbenzene					
Pathway Total					

----- LOCATION-SWMU 194 PATHWAY=Excavation Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	6.72E-03				
Beryllium	1.59E-06	4.30E+00		6.84E-06	
Cadmium	2.82E-06				
Chromium	1.30E-05				
Lead	1.96E-05				
Zinc	6.31E-05				
Ethylbenzene	4.00E-09				
Pathway Total					6.84E-06

----- LOCATION-SWMU 194 PATHWAY=Excavation Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	1.02E-08				
Beryllium	2.41E-12		2.40E+00	5.78E-12	
Cadmium	4.27E-12		1.80E+00	7.68E-12	
Chromium	1.97E-11		1.20E+01	2.37E-10	
Lead	2.97E-11				
Zinc	9.56E-11				
Ethylbenzene	3.40E-08				
Pathway Total					2.50E-10

----- LOCATION-SWMU 99A PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	2.50E-03				
Antimony	1.40E-06				
Arsenic	1.67E-06	3.66E+00		6.11E-06	
Barium	6.45E-05				
Beryllium	1.70E-07	4.30E+02		7.30E-05	
Cadmium	9.23E-08				
Chromium	4.68E-06				
Lead	1.00E-05				
Manganese	1.20E-04				
Thallium	3.28E-07				
Zinc	5.06E-05				
1,1-Dichloroethene	1.67E-08	6.00E-01		1.00E-08	
1,2,4-Trichlorobenzene	4.56E-07				
1,2-Dichlorobenzene	1.14E-06				
1,3-Dichlorobenzene	1.14E-06				
1,4-Dichlorobenzene	1.14E-06	2.67E-02		3.04E-08	
2,4,5-Trichlorophenol	5.95E-07				

Excavation Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Excavation Dermal Contact with Soil -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
2,4,6-Trichlorophenol	4.56E-07	2.20E-02		1.00E-08	
2,4-Dinitrotoluene	4.56E-07	8.00E-01		3.65E-07	
2,6-Dinitrotoluene	4.56E-07	8.00E-01		3.65E-07	
2-Chloronaphthalene	4.56E-07				
2-Hexanone	1.64E-08				
2-Methyl-4,6-dinitrophenol	5.95E-07				
2-Methylnaphthalene	4.56E-07				
2-Nitroaniline	5.95E-07				
2-Nitrophenol					
3,3'-Dichlorobenzidine	3.40E-07	9.00E-01		3.06E-07	
3-Nitroaniline	5.95E-07				
4,4'-DDD	3.89E-08	3.43E-01		1.33E-08	
4,4'-DDE	3.89E-08	4.86E-01		1.89E-08	
4,4'-DDT	3.89E-08	4.86E-01		1.89E-08	
4-Bromophenyl phenyl ether	4.56E-07				
4-Chloro-3-methylphenol					
4-Chlorophenyl phenyl ether					
4-Nitroaniline	5.95E-07				
Acenaphthene	2.69E-07				
Acenaphthylene	2.78E-07				
Aldrin	1.89E-08	3.40E+01		6.43E-07	
Anthracene	5.42E-07				
Benz(a)anthracene	6.53E-07	2.35E+00		1.54E-06	
Benzo(a)pyrene	7.08E-07	2.35E+01		1.67E-05	
Benzo(b)fluoranthene	8.56E-07	2.35E+00		2.02E-06	
Benzo(ghi)perylene	5.83E-07				
Benzo(k)fluoranthene	5.54E-07	2.35E-01		1.30E-07	
Butyl benzyl phthalate	2.45E-07				
Chrysene	6.90E-07	2.35E-02		1.62E-08	
Di-n-butylphthalate	4.56E-07				
Di-n-octylphthalate	4.56E-07				
Dibenz(a,h)anthracene	4.95E-07	2.35E+01		1.17E-05	
Dibenzofuran	2.73E-07				
Dieldrin	3.89E-08	3.20E+01		1.25E-06	
Endosulfan I					
Endosulfan II					
Endosulfan Sulfate					
Endrin	3.89E-08				
Endrin Ketone					
Ethylbenzene	1.24E-08				
Fluoranthene	7.09E-07				
Fluorene	2.72E-07				
Heptachlor	1.89E-08	6.25E+00		1.18E-07	
Heptachlor Epoxide	1.89E-08	1.26E+01		2.39E-07	
Hexachlorobenzene	4.56E-07	3.20E+00		1.46E-06	
Hexachlorobutadiene	4.56E-07	1.56E-01		7.11E-08	
Hexachlorocyclopentadiene	4.56E-07				
Hexachloroethane	4.56E-07	2.80E-02		1.28E-08	
Indeno(1,2,3-cd)pyrene	5.94E-07	2.35E+00		1.40E-06	
Methoxychlor	1.89E-07				
N-Nitroso-di-n-propylamine	4.56E-07	2.80E+01		1.28E-05	
N-Nitrosodiphenylamine	4.56E-07	1.96E-02		8.94E-09	
Naphthalene	4.56E-07				
PCB-1016	1.13E-07	2.22E+00		2.51E-07	
PCB-1221	8.22E-08	2.22E+00		1.83E-07	
PCB-1232	8.22E-08	2.22E+00		1.83E-07	
PCB-1242	8.22E-08	2.22E+00		1.83E-07	
PCB-1248	8.22E-08	2.22E+00		1.83E-07	
PCB-1254	9.37E-08	2.22E+00		2.08E-07	
PCB-1260	1.17E-07	2.22E+00		2.60E-07	

Excavation Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Excavation Dermal Contact with Soil -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Pentachlorophenol	5.95E-07	1.20E-01		7.14E-08	
Phenanthrene	6.35E-07				
Pyrene	7.27E-07				
Toxaphene	3.89E-07	2.20E+00		8.56E-07	
Vinyl Chloride	3.34E-08	1.90E+00		6.34E-08	
Xylene	8.97E-09				
alpha-BHC	1.89E-08	6.49E+00		1.23E-07	
alpha-Chlordane					
beta-BHC	1.89E-08	1.98E+00		3.74E-08	
bis(2-Chloroethoxy)methane	4.56E-07				
bis(2-Chloroethyl) ether	4.56E-07	2.20E+00		1.00E-06	
bis(2-Chloroisopropyl) ether	4.56E-07	1.40E-01		6.38E-08	
bis(2-Ethylhexyl)phthalate	2.68E-07	7.37E-02		1.97E-08	
cis-1,3-Dichloropropene					
delta-BHC	1.89E-08				
gamma-BHC (Lindane)	1.89E-08	1.34E+00		2.53E-08	
gamma-Chlordane					
trans-1,3-Dichloropropene					
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					1.34E-04

----- LOCATION=SWMU 99A PATHWAY=Excavation External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Cadmium					
Chromium					
Lead					
Manganese					
Thallium					
Zinc					
1,1-Dichloroethene					
1,2,4-Trichlorobenzene					
1,2-Dichlorobenzene					
1,3-Dichlorobenzene					
1,4-Dichlorobenzene					
2,4,5-Trichlorophenol					
2,4,6-Trichlorophenol					
2,4-Dinitrotoluene					
2,6-Dinitrotoluene					
2-Chloronaphthalene					
2-Hexanone					
2-Methyl-4,6-dinitrophenol					
2-Methylnaphthalene					
2-Nitroaniline					
2-Nitrophenol					
3,3'-Dichlorobenzidine					

Excavation Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Excavation External Exposure to Soil -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
3-Nitroaniline					
4,4'-DDD					
4,4'-DDE					
4,4'-DDT					
4-Bromophenyl phenyl ether					
4-Chloro-3-methylphenol					
4-Chlorophenyl phenyl ether					
4-Nitroaniline					
Acenaphthene					
Acenaphthylene					
Aldrin					
Anthracene					
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Butyl benzyl phthalate					
Chrysene					
Di-n-butylphthalate					
Di-n-octylphthalate					
Dibenz(a,h)anthracene					
Dibenzofuran					
Dieldrin					
Endosulfan I					
Endosulfan II					
Endosulfan Sulfate					
Endrin					
Endrin Ketone					
Ethylbenzene					
Fluoranthene					
Fluorene					
Heptachlor					
Heptachlor Epoxide					
Hexachlorobenzene					
Hexachlorobutadiene					
Hexachlorocyclopentadiene					
Hexachloroethane					
Indeno(1,2,3-cd)pyrene					
Methoxychlor					
N-Nitroso-di-n-propylamine					
N-Nitrosodiphenylamine					
Naphthalene					
PCB-1016					
PCB-1221					
PCB-1232					
PCB-1242					
PCB-1248					
PCB-1254					
PCB-1260					
Pentachlorophenol					
Phenanthrene					
Pyrene					
Toxaphene					
Vinyl Chloride					
Xylene					
alpha-BHC					
alpha-Chlordane					
beta-BHC					
bis(2-Chloroethoxy)methane					

Excavation Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Excavation External Exposure to Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
bis(2-Chloroethyl) ether					
bis(2-Chloroisopropyl) ether					
bis(2-Ethylhexyl) phthalate					
cis-1,3-Dichloropropene					
delta-BHC					
gamma-BHC (Lindane)					
gamma-Chlordane					
trans-1,3-Dichloropropene					
Cesium-137	3.21E+00	2.09E-06		6.71E-06	
Neptunium-237	3.63E+01	4.62E-07		1.68E-05	
Technetium-99	1.07E+03	6.19E-13		6.62E-10	
Thorium-234	6.60E+01	3.50E-09		2.31E-07	
Uranium-234	4.67E+01	2.14E-11		9.99E-10	
Uranium-238	1.47E+02	6.57E-08		9.66E-06	
Pathway Total					3.34E-05

----- LOCATION=SWMU 99A PATHWAY=Excavation Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	5.58E-03				
Antimony	3.13E-06				
Arsenic	3.73E-06	1.50E+00		5.59E-06	
Barium	1.44E-04				
Beryllium	3.79E-07	4.30E+00		1.63E-06	
Cadmium	1.03E-06				
Chromium	1.04E-05				
Lead	2.24E-05				
Manganese	2.69E-04				
Thallium	7.32E-07				
Zinc	1.13E-04				
1,1-Dichloroethene	7.45E-09	6.00E-01		4.47E-09	
1,2,4-Trichlorobenzene	5.09E-07				
1,2-Dichlorobenzene	5.09E-07				
1,3-Dichlorobenzene	5.09E-07				
1,4-Dichlorobenzene	5.09E-07	2.40E-02		1.22E-08	
2,4,5-Trichlorophenol	6.64E-07				
2,4,6-Trichlorophenol	5.09E-07	1.10E-02		5.60E-09	
2,4-Dinitrotoluene	5.09E-07	6.80E-01		3.46E-07	
2,6-Dinitrotoluene	5.09E-07	6.80E-01		3.46E-07	
2-Chloronaphthalene	5.09E-07				
2-Hexanone	7.32E-09				
2-Methyl-4,6-dinitrophenol	6.64E-07				
2-Methylnaphthalene	5.09E-07				
2-Nitroaniline	6.64E-07				
2-Nitrophenol	5.09E-07				
3,3'-Dichlorobenzidine	3.80E-07	4.50E-01		1.71E-07	
3-Nitroaniline	6.64E-07				
4,4'-DDD	4.34E-08	2.40E-01		1.04E-08	
4,4'-DDE	4.34E-08	3.40E-01		1.48E-08	
4,4'-DDT	4.34E-08	3.40E-01		1.48E-08	
4-Bromophenyl phenyl ether	5.09E-07				
4-Chloro-3-methylphenol	5.09E-07				
4-Chlorophenyl phenyl ether	5.09E-07				
4-Nitroaniline	6.64E-07				
Acenaphthene	3.00E-07				
Acenaphthylene	3.11E-07				

Excavation Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Excavation Ingestion of Soil -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aldrin	2.11E-08	1.70E+01		3.59E-07	
Anthracene	6.05E-07				
Benz(a)anthracene	7.29E-07	7.30E-01		5.32E-07	
Benzo(a)pyrene	7.90E-07	7.30E+00		5.77E-06	
Benzo(b)fluoranthene	9.55E-07	7.30E-01		6.97E-07	
Benzo(ghi)perylene	6.51E-07				
Benzo(k)fluoranthene	6.18E-07	7.30E-02		4.51E-08	
Butyl benzyl phthalate	2.73E-07				
Chrysene	7.70E-07	7.30E-03		5.62E-09	
Di-n-butylphthalate	5.09E-07				
Di-n-octylphthalate	5.09E-07				
Dibenz(a,h)anthracene	5.53E-07	7.30E+00		4.03E-06	
Dibenzofuran	3.05E-07				
Dieldrin	4.34E-08	1.60E+01		6.95E-07	
Endosulfan I	2.11E-08				
Endosulfan II	4.34E-08				
Endosulfan Sulfate	4.34E-08				
Endrin	4.34E-08				
Endrin Ketone	4.34E-08				
Ethylbenzene	5.52E-09				
Fluoranthene	7.91E-07				
Fluorene	3.04E-07				
Heptachlor	2.11E-08	4.50E+00		9.50E-08	
Heptachlor Epoxide	2.11E-08	9.10E+00		1.92E-07	
Hexachlorobenzene	5.09E-07	1.60E+00		8.14E-07	
Hexachlorobutadiene	5.09E-07	7.80E-02		3.97E-08	
Hexachlorocyclopentadiene	5.09E-07				
Hexachloroethane	5.09E-07	1.40E-02		7.12E-09	
Indeno(1,2,3-cd)pyrene	6.63E-07	7.30E-01		4.84E-07	
Methoxychlor	2.11E-07				
N-Nitroso-di-n-propylamine	5.09E-07	7.00E+00		3.56E-06	
N-Nitrosodiphenylamine	5.09E-07	4.90E-03		2.49E-09	
Naphthalene	5.09E-07				
PCB-1016	2.10E-07	2.00E+00		4.20E-07	
PCB-1221	1.53E-07	2.00E+00		3.06E-07	
PCB-1232	1.53E-07	2.00E+00		3.06E-07	
PCB-1242	1.53E-07	2.00E+00		3.06E-07	
PCB-1248	1.53E-07	2.00E+00		3.06E-07	
PCB-1254	1.74E-07	2.00E+00		3.49E-07	
PCB-1260	2.18E-07	2.00E+00		4.35E-07	
Pentachlorophenol	6.64E-07	1.20E-01		7.97E-08	
Phenanthrene	7.08E-07				
Pyrene	8.11E-07				
Toxaphene	4.34E-07	1.10E+00		4.78E-07	
Vinyl Chloride	1.49E-08	1.90E+00		2.83E-08	
Xylene	4.00E-09				
alpha-BHC	2.11E-08	6.30E+00		1.33E-07	
alpha-Chlordane	2.11E-07				
beta-BHC	2.11E-08	1.80E+00		3.80E-08	
bis(2-Chloroethoxy)methane	5.09E-07				
bis(2-Chloroethyl)ether	5.09E-07	1.10E+00		5.60E-07	
bis(2-Chloroisopropyl)ether	5.09E-07	7.00E-02		3.56E-08	
bis(2-Ethylhexyl)phthalate	2.99E-07	1.40E-02		4.18E-09	
cis-1,3-Dichloropropene	5.52E-09				
delta-BHC	2.11E-08				
gamma-BHC(Lindane)	2.11E-08	1.30E+00		2.74E-08	
gamma-Chlordane	2.11E-07				
trans-1,3-Dichloropropene	5.52E-09				
Cesium-137	2.11E+03	3.16E-11		6.67E-08	
Neptunium-237	2.38E+04	3.00E-10		7.15E-06	

Excavation Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Excavation Ingestion of Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Technetium-99	7.03E+05	1.40E-12		9.84E-07	
Thorium-234	4.34E+04	1.93E-11		8.37E-07	
Uranium-234	3.07E+04	4.44E-11		1.36E-06	
Uranium-238	9.66E+04	6.20E-11		5.99E-06	
Pathway Total					4.57E-05

----- LOCATION=SWMU 99A PATHWAY=Excavation Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	8.45E-09				
Antimony	4.74E-12				
Arsenic	5.65E-12		4.30E+00	2.43E-11	
Barium	2.18E-10				
Beryllium	5.74E-13		2.40E+00	1.38E-12	
Cadmium	1.56E-12		1.80E+00	2.81E-12	
Chromium	1.58E-11		1.20E+01	1.90E-10	
Lead	3.40E-11				
Manganese	4.07E-10				
Thallium	1.11E-12				
Zinc	1.71E-10				
1,1-Dichloroethene	2.39E-07		5.00E-02	1.19E-08	
1,2,4-Trichlorobenzene	5.42E-07				
1,2-Dichlorobenzene	1.60E-06				
1,3-Dichlorobenzene	7.71E-13				
1,4-Dichlorobenzene	1.81E-06				
2,4,5-Trichlorophenol	4.38E-08				
2,4,6-Trichlorophenol	9.10E-08		3.10E-03	2.82E-10	
2,4-Dinitrotoluene	6.59E-08				
2,6-Dinitrotoluene	8.11E-08				
2-Chloronaphthalene	8.34E-07				
2-Hexanone	1.11E-14				
2-Methyl-4,6-dinitrophenol	4.46E-08				
2-Methylnaphthalene	5.49E-08				
2-Nitroaniline	2.59E-06				
2-Nitrophenol	7.71E-13				
3,3'-Dichlorobenzidine	1.35E-08				
3-Nitroaniline	1.01E-12				
4,4'-DDD	8.58E-11				
4,4'-DDE	8.04E-11				
4,4'-DDT	6.57E-11		9.70E-02	6.37E-12	
4-Bromophenyl phenyl ether	7.71E-13				
4-Chloro-3-methylphenol	7.71E-13				
4-Chlorophenyl phenyl ether	7.71E-13				
4-Nitroaniline	1.01E-12				
Acenaphthene	6.30E-08				
Acenaphthylene	4.81E-08				
Aldrin	1.40E-10		4.90E+00	6.87E-10	
Anthracene	3.56E-08				
Benz(a)anthracene	3.54E-09		8.80E-02	3.12E-10	
Benzo(a)pyrene	1.48E-09		8.80E-01	1.30E-09	
Benzo(b)fluoranthene	9.47E-09		8.80E-02	8.34E-10	
Benzo(ghi)perylene	9.85E-13				
Benzo(k)fluoranthene	7.21E-10		8.80E-03	6.35E-12	
Butyl benzyl phthalate	1.50E-09				
Chrysene	1.30E-08		8.80E-04	1.14E-11	
Di-n-butylphthalate	2.89E-09				

Excavation Excess Lifetime Cancer Risks

----- LOCATION-SWMU 99A PATHWAY-Excavation Inhalation of Soil -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Di-n-octylphthalate	3.91E-10				
Dibenz (a, h) anthracene	2.44E-10		8.80E-01	2.15E-10	
Dibenzofuran	3.45E-08				
Dieldrin	9.24E-10		4.60E+00	4.25E-09	
Endosulfan I	3.19E-14				
Endosulfan II	6.58E-14				
Endosulfan Sulfate	6.58E-14				
Endrin	8.89E-10				
Endrin Ketone	6.58E-14				
Ethylbenzene	4.70E-08				
Fluoranthene	1.19E-08				
Fluorene	2.73E-08				
Heptachlor	4.30E-10		1.30E+00	5.59E-10	
Heptachlor Epoxide	1.88E-10		2.60E+00	4.89E-10	
Hexachlorobenzene	1.27E-07		4.60E-01	5.84E-08	
Hexachlorobutadiene	3.25E-07		2.20E-02	7.15E-09	
Hexachlorocyclopentadiene	1.64E-07				
Hexachloroethane	2.59E-07		4.00E-03	1.03E-09	
Indeno (1, 2, 3-cd) pyrene	5.34E-10		8.80E-02	4.70E-11	
Methoxychlor	2.38E-09				
N-Nitroso-di-n-propylamine	2.11E-07				
N-Nitrosodiphenylamine	4.07E-08				
Naphthalene	4.19E-07				
PCB-1016	2.03E-08		5.71E-01	1.16E-08	
PCB-1221	2.32E-13		5.71E-01	1.32E-13	
PCB-1232	2.32E-13		5.71E-01	1.32E-13	
PCB-1242	1.94E-08		5.71E-01	1.11E-08	
PCB-1248	2.32E-13		5.71E-01	1.32E-13	
PCB-1254	1.51E-08		5.71E-01	8.61E-09	
PCB-1260	2.23E-08		5.71E-01	1.27E-08	
Pentachlorophenol	2.57E-08				
Phenanthrene	1.07E-12				
Pyrene	9.81E-09				
Toxaphene	1.70E-09		3.20E-01	5.44E-10	
Vinyl Chloride	6.59E-07		8.40E-02	5.53E-08	
Xylene	2.69E-08				
alpha-BHC	1.71E-09		1.80E+00	3.09E-09	
alpha-Chlordane	3.19E-13				
beta-BHC	7.30E-10		5.30E-01	3.87E-10	
bis (2-Chloroethoxy) methane	7.71E-13				
bis (2-Chloroethyl) ether	6.99E-07		3.30E-01	2.31E-07	
bis (2-Chloroisopropyl) ether	8.06E-07		1.00E-02	8.06E-09	
bis (2-Ethylhexyl) phthalate	6.39E-11				
cis-1,3-Dichloropropene	8.35E-15				
delta-BHC	3.19E-14				
gamma-BHC (Lindane)	2.08E-09				
gamma-Chlordane	3.19E-13				
trans-1,3-Dichloropropene	8.35E-15				
Cesium-137	2.74E-03	1.91E-11		5.23E-14	
Neptunium-237	3.09E-02	3.45E-08		1.07E-09	
Technetium-99	9.12E-01	2.89E-12		2.64E-12	
Thorium-234	5.63E-02	1.90E-11		1.07E-12	
Uranium-234	3.98E-02	1.40E-08		5.57E-10	
Uranium-238	1.25E-01	1.24E-08		1.56E-09	
Pathway Total					4.33E-07

Excavation Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99B PATHWAY=Excavation Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	3.91E-03				
Arsenic	1.92E-06	3.66E+00		7.03E-06	
Beryllium	4.39E-07	4.30E+02		1.89E-04	
Chromium	5.92E-06				
Methylene Chloride	1.67E-06	7.89E-03		1.32E-08	
Pathway Total					1.96E-04

----- LOCATION=SWMU 99B PATHWAY=Excavation External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Arsenic					
Beryllium					
Chromium					
Methylene Chloride					
Pathway Total					

----- LOCATION=SWMU 99B PATHWAY=Excavation Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	8.74E-03				
Arsenic	4.29E-06	1.50E+00		6.44E-06	
Beryllium	9.79E-07	4.30E+00		4.21E-06	
Chromium	1.32E-05				
Methylene Chloride	7.45E-07	7.50E-03		5.59E-09	
Pathway Total					1.07E-05

----- LOCATION=SWMU 99B PATHWAY=Excavation Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	1.32E-08				
Arsenic	6.50E-12		4.30E+00	2.79E-11	
Beryllium	1.48E-12		2.40E+00	3.56E-12	
Chromium	2.00E-11		1.20E+01	2.40E-10	
Methylene Chloride	1.37E-05		4.70E-04	6.45E-09	
Pathway Total					6.72E-09

Future Industrial Hazard Index Estimates

----- LOCATION=AOC 204 PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	1.58E-03	1.00E-01		1.58E-02	
1,1-Dichloroethene	1.26E-05	9.00E-03		1.40E-03	
PCB-1254	3.07E-04	1.80E-05		1.71E+01	
PCB-1260	9.46E-04				
Polychlorinated biphenyl	2.09E-03				
Tetrachloroethene	8.42E-03	1.00E-02		8.42E-01	
Trichloroethene	3.13E-04	9.00E-04		3.48E-01	
Vinyl Chloride	2.59E-08				
cis-1,2-Dichloroethene	2.13E-06	1.00E-02		2.13E-04	
Pathway Total					1.83E+01

----- LOCATION=AOC 204 PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	4.89E-02	1.00E-01		4.89E-01	
1,1-Dichloroethene	3.91E-04	9.00E-03		4.35E-02	
PCB-1254	2.45E-04	2.00E-05		1.22E+01	
PCB-1260	2.45E-04				
Polychlorinated biphenyl	1.66E-03				
Tetrachloroethene	6.27E-03	1.00E-02		6.27E-01	
Trichloroethene	5.40E-03	6.00E-03		8.99E-01	
Vinyl Chloride	9.78E-07				
cis-1,2-Dichloroethene	5.87E-05	1.00E-02		5.87E-03	
Pathway Total					1.43E+01

----- LOCATION=AOC 204 PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	2.67E-02		1.43E-01	1.87E-01	
1,1-Dichloroethene	2.14E-04		9.00E-03	2.38E-02	
PCB-1254			2.00E-05		
PCB-1260					
Polychlorinated biphenyl					
Tetrachloroethene	3.43E-03		1.71E-01	2.00E-02	
Trichloroethene	2.95E-03		6.00E-03	4.91E-01	
Vinyl Chloride	5.34E-07				
cis-1,2-Dichloroethene	3.21E-05		1.00E-02	3.21E-03	
Pathway Total					7.25E-01

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron	4.69E-03	4.50E-02		1.04E-01	
Tetraoxo-sulfate(1-)					
Trichloroethene	2.12E-06	9.00E-04		2.35E-03	
cis-1,2-Dichloroethene	6.04E-05	1.00E-02		6.04E-03	
Technetium-99					
Uranium-238					
Pathway Total					1.13E-01

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia	1.60E-05				
Fluoride	1.49E-05	5.82E-02		2.56E-04	
Iron	1.07E-03	4.50E-02		2.39E-02	
Silica					
Tetraoxo-sulfate (1-)					
Zinc	3.51E-06	6.00E-02		5.84E-05	
1,1-Dichloroethene	6.32E-08	9.00E-03		7.02E-06	
Pentachlorophenol	1.96E-04	3.00E-02		6.52E-03	
Trichloroethene	9.60E-05	9.00E-04		1.07E-01	
bis (2-Ethylhexyl)phthalate	1.07E-05	3.80E-03		2.82E-03	
cis-1,2-Dichloroethene	1.03E-06	1.00E-02		1.03E-04	
Technetium-99					
Pathway Total					1.40E-01

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.57E-05	6.00E-05		4.29E-01	
Anthracene	4.88E-07	2.28E-01		2.14E-06	
Benz (a) anthracene	7.57E-07				
Benzo (a) pyrene	1.05E-06				
Benzo (b) fluoranthene	2.15E-07				
Benzo (ghi) perylene	7.15E-07				
Chrysene	7.15E-07				
Di-n-butylphthalate	3.24E-07	1.00E-01		3.24E-06	
Di-n-octylphthalate	5.05E-07	1.80E-02		2.80E-05	
Dibenz (a, h) anthracene	5.47E-07				
Fluoranthene	1.15E-06	1.24E-02		9.26E-05	
Indeno (1, 2, 3-cd) pyrene	6.73E-07				
Pyrene	1.24E-06	9.30E-03		1.33E-04	
bis (2-Ethylhexyl) phthalate	7.15E-07	3.80E-03		1.88E-04	
Pathway Total					4.30E-01

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron	1.29E+00	3.00E-01		4.31E+00	
Tetraoxo-sulfate (1-)	4.02E-01				
Trichloroethene	3.64E-05	6.00E-03		6.07E-03	
cis-1,2-Dichloroethene	1.66E-03	1.00E-02		1.66E-01	
Technetium-99					
Uranium-238					
Pathway Total					4.48E+00

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia	2.94E-03				
Fluoride	4.11E-03	6.00E-02		6.85E-02	

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Ingestion of RGA Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron	2.96E-01	3.00E-01		9.86E-01	
Silica	1.86E-01				
Tetraoxo-sulfate(1-)	9.98E-01				
Zinc	9.66E-04	3.00E-01		3.22E-03	
1,1-Dichloroethene	1.96E-06	9.00E-03		2.17E-04	
Pentachlorophenol	8.29E-05	3.00E-02		2.76E-03	
Trichloroethene	1.65E-03	6.00E-03		2.76E-01	
bis(2-Ethylhexyl) phthalate	1.26E-04	2.00E-02		6.31E-03	
cis-1,2-Dichloroethene	2.84E-05	1.00E-02		2.84E-03	
Technetium-99					
Pathway Total					1.35E+00

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	5.99E-06	3.00E-03		2.00E-03	
Anthracene	5.68E-08	3.00E-01		1.89E-07	
Benz(a)anthracene	8.81E-08				
Benzo(a)pyrene	1.22E-07				
Benzo(b)fluoranthene	2.50E-08				
Benzo(ghi)perylene	8.32E-08				
Chrysene	8.32E-08				
Di-n-butylphthalate	3.77E-08	1.00E-01		3.77E-07	
Di-n-octylphthalate	5.87E-08	2.00E-02		2.94E-06	
Dibenz(a,h)anthracene	6.36E-08				
Fluoranthene	1.34E-07	4.00E-02		3.34E-06	
Indeno(1,2,3-cd)pyrene	7.83E-08				
Pyrene	1.44E-07	3.00E-02		4.81E-06	
bis(2-Ethylhexyl) phthalate	8.32E-08	2.00E-02		4.16E-06	
Pathway Total					2.01E-03

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Inhalation of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron					
Tetraoxo-sulfate(1-)					
Trichloroethene	1.99E-05		6.00E-03	3.32E-03	
cis-1,2-Dichloroethene	9.08E-04		1.00E-02	9.08E-02	
Technetium-99					
Uranium-238					
Pathway Total					9.42E-02

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia			2.86E-02		
Fluoride					
Iron					

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Inhalation of RGA Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Silica					
Tetraoxo-sulfate (1-)					
Zinc					
1,1-Dichloroethene	1.07E-06		9.00E-03	1.19E-04	
Pentachlorophenol			3.00E-02		
Trichloroethene	9.03E-04		6.00E-03	1.51E-01	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	1.55E-05		1.00E-02	1.55E-03	
Technetium-99					
Pathway Total					1.52E-01

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	8.70E-11		1.00E-04	8.70E-07	
Anthracene	3.20E-08		1.05E+00	3.05E-08	
Benz (a) anthracene	4.11E-09				
Benzo (a) pyrene	2.20E-09				
Benzo (b) fluoranthene	2.37E-09				
Benzo (ghi) perylene	1.21E-12				
Chrysene	1.35E-08				
Di-n-butylphthalate	2.06E-09		3.50E-01	5.87E-09	
Di-n-octylphthalate	4.33E-10		7.00E-02	6.18E-09	
Dibenz (a, h) anthracene	2.69E-10				
Fluoranthene	1.93E-08		1.40E-01	1.38E-07	
Indeno(1,2,3-cd) pyrene	6.05E-10				
Pyrene	1.67E-08		1.05E-01	1.59E-07	
bis(2-Ethylhexyl)phthalate	1.71E-10		7.00E-02	2.44E-09	
Pathway Total					1.21E-06

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	7.39E-06	9.00E-04		8.21E-03	
cis-1,2-Dichloroethene	8.17E-06	1.00E-02		8.17E-04	
Pathway Total					9.03E-03

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	5.12E-07	9.00E-03		5.69E-05	
Acetone	6.67E-07	8.30E-02		8.04E-06	
Carbon Tetrachloride	4.30E-06	4.55E-04		9.45E-03	
Di-n-butylphthalate	4.15E-05	1.00E-01		4.15E-04	
Trichloroethene	2.84E-04	9.00E-04		3.16E-01	
bis(2-Ethylhexyl)phthalate	8.38E-06	3.80E-03		2.21E-03	
cis-1,2-Dichloroethene	2.92E-06	1.00E-02		2.92E-04	
Technetium-99					

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Pathway Total					3.28E-01

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	3.30E-06	2.00E-05		1.65E-01	
Chromium	1.87E-04	6.00E-05		3.11E+00	
Vanadium	1.37E-04	7.00E-05		1.95E+00	
Pathway Total					5.23E+00

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	1.27E-04	6.00E-03		2.12E-02	
cis-1,2-Dichloroethene	2.25E-04	1.00E-02		2.25E-02	
Pathway Total					4.37E-02

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	1.58E-05	9.00E-03		1.76E-03	
Acetone	3.23E-04	1.00E-01		3.23E-03	
Carbon Tetrachloride	5.38E-05	7.00E-04		7.69E-02	
Di-n-butylphthalate	9.94E-05	1.00E-01		9.94E-04	
Trichloroethene	4.89E-03	6.00E-03		8.15E-01	
bis(2-Ethylhexyl)phthalate	9.87E-05	2.00E-02		4.93E-03	
cis-1,2-Dichloroethene	8.04E-05	1.00E-02		8.04E-03	
Technetium-99					
Pathway Total					9.11E-01

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	7.68E-07	2.00E-03		3.84E-04	
Chromium	4.34E-05	3.00E-03		1.45E-02	
Vanadium	3.18E-05	7.00E-03		4.54E-03	
Pathway Total					1.94E-02

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Inhalation of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	6.95E-05		6.00E-03	1.16E-02	
cis-1,2-Dichloroethene	1.23E-04		1.00E-02	1.23E-02	
Pathway Total					2.39E-02

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	8.65E-06		9.00E-03	9.61E-04	
Acetone	1.76E-04		1.00E-01	1.76E-03	
Carbon Tetrachloride	2.94E-05		5.71E-04	5.15E-02	
Di-n-butylphthalate			1.00E-01		
Trichloroethene	2.67E-03		6.00E-03	4.45E-01	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	4.39E-05		1.00E-02	4.39E-03	
Technetium-99					
Pathway Total					5.04E-01

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	1.12E-11		2.00E-05	5.58E-07	
Chromium	6.31E-10		1.00E-04	6.31E-06	
Vanadium	4.62E-10				
Pathway Total					6.87E-06

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	1.36E-03	1.00E-01		1.36E-02	
Antimony	4.06E-06	8.00E-06		5.08E-01	
Arsenic	4.34E-07	1.23E-04		3.53E-03	
Barium	8.68E-06	4.90E-03		1.77E-03	
Beryllium	3.94E-07	2.00E-05		1.97E-02	
Cadmium	1.26E-06	5.00E-06		2.51E-01	
Chromium	5.09E-06	6.00E-05		8.48E-02	
Cobalt	1.89E-06	4.80E-02		3.93E-05	
Iron	2.09E-03	4.50E-02		4.65E-02	
Lead	8.88E-06	1.50E-08		5.92E+02	
Manganese	4.84E-05	1.84E-03		2.63E-02	
Mercury	7.10E-09	2.10E-05		3.38E-04	
Molybdenum	1.64E-06	1.90E-03		8.63E-04	
Nickel	1.91E-06	5.40E-03		3.53E-04	
Silica					
Silver	1.18E-06	9.00E-04		1.31E-03	
Tetraxo-sulfate(1-)					
Thallium	4.37E-06				
Uranium	2.27E-07	2.55E-03		8.92E-05	
Vanadium	2.97E-05	7.00E-05		4.24E-01	
Zinc	7.22E-06	6.00E-02		1.20E-04	

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Dermal Contact with McNairy Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1,2-Trichloroethane	7.46E-07	3.24E-03		2.30E-04	
1,1-Dichloroethene	7.90E-07	9.00E-03		8.78E-05	
1,2-Dichloroethane	4.71E-07				
Benzene	1.86E-06				
Bromodichloromethane	5.15E-07	1.96E-02		2.63E-05	
Carbon Tetrachloride	1.95E-06	4.55E-04		4.29E-03	
Chloroform	7.90E-07	2.00E-03		3.95E-04	
Ethylbenzene	6.57E-06	9.70E-02		6.77E-05	
Polychlorinated biphenyl	1.23E-06				
Tetrachloroethene	3.29E-05	1.00E-02		3.29E-03	
Trichloroethene	7.01E-07	9.00E-04		7.79E-04	
Vinyl Chloride	2.38E-06				
Xylene	1.83E-05	1.84E+00		9.96E-06	
cis-1,2-Dichloroethene	1.78E-06	1.00E-02		1.78E-04	
trans-1,2-Dichloroethene	1.90E-07	2.00E-02		9.51E-06	
Radon-222					
Pathway Total					5.93E+02

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	2.14E-05	7.20E-03		2.97E-03	
Trichloroethene	9.21E-05	9.00E-04		1.02E-01	
Pathway Total					1.05E-01

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.15E-05	6.00E-05		1.92E-01	
Lead	5.25E-05	1.50E-08		3.50E+03	
Zinc	8.75E-05	6.00E-02		1.46E-03	
Pathway Total					3.50E+03

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	3.74E-01	1.00E+00		3.74E-01	
Antimony	1.12E-03	4.00E-04		2.80E+00	
Arsenic	1.19E-04	3.00E-04		3.98E-01	
Barium	2.39E-03	7.00E-02		3.42E-02	
Beryllium	1.09E-04	2.00E-03		5.43E-02	
Cadmium	3.46E-04	5.00E-04		6.92E-01	
Chromium	1.40E-03	3.00E-03		4.67E-01	
Cobalt	5.20E-04	6.00E-02		8.67E-03	
Iron	5.76E-01	3.00E-01		1.92E+00	
Lead	2.45E-03	1.00E-07		2.45E+04	
Manganese	1.33E-02	4.60E-02		2.90E-01	
Mercury	1.96E-06	3.00E-04		6.52E-03	

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Ingestion of McNairy Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Molybdenum	4.52E-04	5.00E-03		9.03E-02	
Nickel	5.26E-04	2.00E-02		2.63E-02	
Silica	7.83E-02				
Silver	3.25E-04	5.00E-03		6.50E-02	
Tetraoxo-sulfate(1-)	6.45E-02				
Thallium	1.20E-03				
Uranium	6.26E-05	3.00E-03		2.09E-02	
Vanadium	8.18E-03	7.00E-03		1.17E+00	
Zinc	1.99E-03	3.00E-01		6.63E-03	
1,1,2-Trichloroethane	2.45E-05	4.00E-03		6.12E-03	
1,1-Dichloroethene	2.45E-05	9.00E-03		2.72E-03	
1,2-Dichloroethane	2.45E-05				
Benzene	2.45E-05				
Bromodichloromethane	2.45E-05	2.00E-02		1.22E-03	
Carbon Tetrachloride	2.45E-05	7.00E-04		3.49E-02	
Chloroform	2.45E-05	1.00E-02		2.45E-03	
Ethylbenzene	2.45E-05	1.00E-01		2.45E-04	
Polychlorinated biphenyl	9.78E-07				
Tetrachloroethene	2.45E-05	1.00E-02		2.45E-03	
Trichloroethene	1.21E-05	6.00E-03		2.01E-03	
Vinyl Chloride	8.99E-05				
Xylene	5.33E-05	2.00E+00		2.67E-05	
cis-1,2-Dichloroethene	4.89E-05	1.00E-02		4.89E-03	
trans-1,2-Dichloroethene	4.89E-05	2.00E-02		2.45E-03	
Radon-222					
Pathway Total					2.45E+04

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	5.50E-03	9.00E-03		6.11E-01	
Trichloroethene	1.59E-03	6.00E-03		2.64E-01	
Pathway Total					8.75E-01

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.68E-06	3.00E-03		8.92E-04	
Lead	1.22E-05	1.00E-07		1.22E+02	
Zinc	2.04E-05	3.00E-01		6.79E-05	
Pathway Total					1.22E+02

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Inhalation of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum					
Antimony					
Arsenic					

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Inhalation of McNairy Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium			1.43E-04		
Beryllium			5.71E-06		
Cadmium			5.71E-05		
Chromium			2.29E-06		
Cobalt			5.70E-06		
Iron					
Lead			2.86E-04		
Manganese			1.43E-05		
Mercury			8.57E-05		
Molybdenum					
Nickel					
Silica					
Silver					
Tetraxo-sulfate(1-)					
Thallium					
Uranium					
Vanadium					
Zinc					
1,1,2-Trichloroethane	1.34E-05		4.00E-03	3.34E-03	
1,1-Dichloroethene	1.34E-05		9.00E-03	1.48E-03	
1,2-Dichloroethane	1.34E-05		2.86E-03	4.67E-03	
Benzene	1.34E-05		1.71E-03	7.81E-03	
Bromodichloromethane	1.34E-05		2.00E-02	6.68E-04	
Carbon Tetrachloride	1.34E-05		5.71E-04	2.34E-02	
Chloroform	1.34E-05		1.00E-02	1.34E-03	
Ethylbenzene	1.34E-05		2.86E-01	4.68E-05	
Polychlorinated biphenyl					
Tetrachloroethene	1.34E-05		1.71E-01	7.79E-05	
Trichloroethene	6.59E-06		6.00E-03	1.10E-03	
Vinyl Chloride	4.91E-05				
Xylene	2.91E-05		2.00E+00	1.46E-05	
cis-1,2-Dichloroethene	2.67E-05		1.00E-02	2.67E-03	
trans-1,2-Dichloroethene	2.67E-05		2.00E-02	1.34E-03	
Radon-222					
Pathway Total					4.80E-02

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	3.00E-03		9.00E-03	3.34E-01	
Trichloroethene	8.66E-04		6.00E-03	1.44E-01	
Pathway Total					4.78E-01

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	3.89E-11		1.00E-04	3.89E-07	
Lead	1.77E-10		1.00E-03	1.77E-07	
Zinc	2.96E-10				
Pathway Total					5.66E-07

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	3.29E-06	9.00E-03		3.66E-04	
Carbon Tetrachloride	2.19E-06	4.55E-04		4.81E-03	
Trichloroethene	2.47E-04	9.00E-04		2.75E-01	
cis-1,2-Dichloroethene	4.10E-05	1.00E-02		4.10E-03	
Pathway Total					2.84E-01

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	3.85E-04	1.00E-01		3.85E-03	
Arsenic	1.96E-07	1.23E-04		1.59E-03	
Barium	1.22E-05	4.90E-03		2.49E-03	
Beryllium	3.68E-07	2.00E-05		1.84E-02	
Chromium	4.50E-06	6.00E-05		7.51E-02	
Cobalt	3.35E-06	4.80E-02		6.99E-05	
Copper	2.83E-06	1.20E-02		2.36E-04	
Iron	8.23E-04	4.50E-02		1.83E-02	
Lead	2.89E-06	1.50E-08		1.92E+02	
Lithium	2.64E-06	1.60E-02		1.65E-04	
Manganese	5.90E-05	1.84E-03		3.21E-02	
Mercury	1.53E-08	2.10E-05		7.30E-04	
Nickel	5.45E-06	5.40E-03		1.01E-03	
Silica					
Sulfate	4.21E-04				
Tetraoxo-sulfate(1-)					
Vanadium	1.30E-05	7.00E-05		1.86E-01	
Zinc	8.00E-06	6.00E-02		1.33E-04	
1,1-Dichloroethene	5.65E-06	9.00E-03		6.28E-04	
Trichloroethene	3.84E-04	9.00E-04		4.27E-01	
bis(2-Ethylhexyl)phthalate	7.95E-06	3.80E-03		2.09E-03	
cis-1,2-Dichloroethene	2.50E-06	1.00E-02		2.50E-04	
Radon-222					
Technetium-99					
Pathway Total					1.93E+02

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	4.38E-04	4.90E-03		8.93E-02	
Beryllium	1.40E-06	2.00E-05		7.01E-02	
Chromium	1.98E-05	6.00E-05		3.30E-01	
Zinc	2.38E-04	6.00E-02		3.96E-03	
Acenaphthene	1.39E-06	1.86E-02		7.46E-05	
Acenaphthylene	1.10E-06				
Anthracene	2.49E-06	2.28E-01		1.09E-05	
Benz (a) anthracene	3.35E-06				
Benzo (a) pyrene	2.06E-06				
Benzo (b) fluoranthene	4.84E-06				
Benzo (ghi) perylene	3.14E-06				
Benzo (k) fluoranthene	2.41E-06				
Chrysene	5.51E-06				
Dibenz (a, h) anthracene	1.05E-06				
Dibenzofuran	5.18E-07	2.00E-03		2.59E-04	

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Dermal Contact with Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Fluoranthene	3.58E-06	1.24E-02		2.89E-04	
Fluorene	9.21E-07	2.00E-02		4.61E-05	
Indeno(1,2,3-cd)pyrene	3.37E-06				
PCB-1016	6.00E-07	6.30E-05		9.53E-03	
PCB-1254	2.42E-07	1.80E-05		1.35E-02	
PCB-1260	4.72E-07				
Phenanthrene	4.17E-06				
Pyrene	4.11E-06	9.30E-03		4.42E-04	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					5.17E-01

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	1.02E-04	9.00E-03		1.13E-02	
Carbon Tetrachloride	2.74E-05	7.00E-04		3.91E-02	
Trichloroethene	4.26E-03	6.00E-03		7.10E-01	
cis-1,2-Dichloroethene	1.13E-03	1.00E-02		1.13E-01	
Pathway Total					8.74E-01

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	1.06E-01	1.00E+00		1.06E-01	
Arsenic	5.39E-05	3.00E-04		1.80E-01	
Barium	3.36E-03	7.00E-02		4.80E-02	
Beryllium	1.01E-04	2.00E-03		5.07E-02	
Chromium	1.24E-03	3.00E-03		4.14E-01	
Cobalt	9.24E-04	6.00E-02		1.54E-02	
Copper	7.81E-04	4.00E-02		1.95E-02	
Iron	2.27E-01	3.00E-01		7.56E-01	
Lead	7.95E-04	1.00E-07		7.95E+03	
Lithium	7.28E-04	2.00E-02		3.64E-02	
Manganese	1.63E-02	4.60E-02		3.54E-01	
Mercury	4.22E-06	3.00E-04		1.41E-02	
Nickel	1.50E-03	2.00E-02		7.51E-02	
Silica	1.01E-01				
Sulfate	1.16E-01				
Tetraoxo-sulfate(1-)	9.62E-02				
Vanadium	3.59E-03	7.00E-03		5.13E-01	
Zinc	2.20E-03	3.00E-01		7.34E-03	
1,1-Dichloroethene	1.75E-04	9.00E-03		1.94E-02	
Trichloroethene	6.61E-03	6.00E-03		1.10E+00	
bis(2-Ethylhexyl)phthalate	9.36E-05	2.00E-02		4.68E-03	
cis-1,2-Dichloroethene	6.89E-05	1.00E-02		6.89E-03	
Radon-222					
Technetium-99					

Future Industrial Hazard Index Estimates

----- LOCATION-SWMU 99A PATHWAY-Future Industrial Ingestion of RGA Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Pathway Total					7.96E+03

----- LOCATION-SWMU 99A PATHWAY-Future Industrial Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	1.02E-04	7.00E-02		1.45E-03	
Beryllium	3.26E-07	2.00E-03		1.63E-04	
Chromium	4.60E-06	3.00E-03		1.53E-03	
Zinc	5.52E-05	3.00E-01		1.84E-04	
Acenaphthene	1.61E-07	6.00E-02		2.69E-06	
Acenaphthylene	1.28E-07				
Anthracene	2.90E-07	3.00E-01		9.66E-07	
Benz (a) anthracene	3.89E-07				
Benzo (a) pyrene	2.39E-07				
Benzo (b) fluoranthene	5.63E-07				
Benzo (ghi) perylene	3.65E-07				
Benzo (k) fluoranthene	2.80E-07				
Chrysene	6.41E-07				
Dibenz (a, h) anthracene	1.23E-07				
Dibenzofuran	6.02E-08	4.00E-03		1.50E-05	
Fluoranthene	4.17E-07	4.00E-02		1.04E-05	
Fluorene	1.07E-07	4.00E-02		2.68E-06	
Indeno (1, 2, 3-cd) pyrene	3.92E-07				
PCB-1016	1.16E-07	7.00E-05		1.66E-03	
PCB-1254	4.70E-08	2.00E-05		2.35E-03	
PCB-1260	9.16E-08				
Phenanthrene	4.85E-07				
Pyrene	4.78E-07	3.00E-02		1.59E-05	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					7.39E-03

----- LOCATION-SWMU 99A PATHWAY-Future Industrial Inhalation of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	5.56E-05		9.00E-03	6.18E-03	
Carbon Tetrachloride	1.50E-05		5.71E-04	2.62E-02	
Trichloroethene	2.33E-03		6.00E-03	3.88E-01	
cis-1,2-Dichloroethene	6.17E-04		1.00E-02	6.17E-02	
Pathway Total					4.82E-01

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum					
Arsenic					
Barium			1.43E-04		
Beryllium			5.71E-06		
Chromium			2.29E-06		
Cobalt			5.70E-06		
Copper					
Iron					
Lead			2.86E-04		
Lithium					
Manganese			1.43E-05		
Mercury			8.57E-05		
Nickel					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium					
Zinc					
1,1-Dichloroethene	9.56E-05		9.00E-03	1.06E-02	
Trichloroethene	3.61E-03		6.00E-03	6.02E-01	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	3.76E-05		1.00E-02	3.76E-03	
Radon-222					
Technetium-99					
Pathway Total					6.16E-01

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	1.48E-09		5.00E-04	2.96E-06	
Beryllium	4.74E-12		2.00E-05	2.37E-07	
Chromium	6.69E-11		1.00E-04	6.69E-07	
Zinc	8.03E-10				
Acenaphthene	3.26E-07		2.10E-01	1.55E-06	
Acenaphthylene	1.90E-07				
Anthracene	1.64E-07		1.05E+00	1.56E-07	
Benz(a)anthracene	1.82E-08				
Benzo(a)pyrene	4.31E-09				
Benzo(b)fluoranthene	5.36E-08				
Benzo(ghi)perylene	5.31E-12				
Benzo(k)fluoranthene	3.14E-09				
Chrysene	1.04E-07				
Dibenz(a,h)anthracene	5.19E-10				
Dibenzofuran	6.55E-08		1.40E-02	4.68E-06	
Fluoranthene	6.01E-08		1.40E-01	4.29E-07	
Fluorene	9.25E-08		1.40E-01	6.61E-07	
Indeno(1,2,3-cd)pyrene	3.03E-09				
PCB-1016	1.08E-07		2.45E-04	4.41E-04	
PCB-1254	3.90E-08		7.00E-05	5.57E-04	
PCB-1260	9.01E-08				
Phenanthrene	7.05E-12				
Pyrene	5.54E-08		1.05E-01	5.28E-07	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					

Future Industrial Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Inhalation of Soil -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Uranium-238					
Pathway Total					1.01E-03

----- LOCATION=SWMU 99B PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	1.74E-05	4.90E-03		3.56E-03	
Chromium	2.20E-06	6.00E-05		3.66E-02	
Iron	7.96E-05	4.50E-02		1.77E-03	
Manganese	9.22E-06	1.84E-03		5.01E-03	
Silica					
Sulfate	9.08E-04				
Tetraoxo-sulfate(1-)					
Zinc	2.07E-06	6.00E-02		3.45E-05	
Trichloroethene	1.18E-03	9.00E-04		1.31E+00	
Radon-222					
Pathway Total					1.36E+00

----- LOCATION=SWMU 99B PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	4.80E-03	7.00E-02		6.86E-02	
Chromium	6.06E-04	3.00E-03		2.02E-01	
Iron	2.19E-02	3.00E-01		7.31E-02	
Manganese	2.54E-03	4.60E-02		5.52E-02	
Silica	8.97E-02				
Sulfate	2.50E-01				
Tetraoxo-sulfate(1-)	1.42E-01				
Zinc	5.71E-04	3.00E-01		1.90E-03	
Trichloroethene	2.03E-02	6.00E-03		3.39E+00	
Radon-222					
Pathway Total					3.79E+00

----- LOCATION=SWMU 99B PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium			1.43E-04		
Chromium			2.29E-06		
Iron					
Manganese			1.43E-05		
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Zinc					
Trichloroethene	1.11E-02		6.00E-03	1.85E+00	
Radon-222					
Pathway Total					1.85E+00

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=AOC 204 PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	5.64E-04				
1,1-Dichloroethene	4.52E-06	6.00E-01		2.71E-06	
PCB-1254	1.10E-04	4.44E-01		4.88E-05	
PCB-1260	3.38E-04	4.44E-01		1.50E-04	
Polychlorinated biphenyl	7.46E-04	4.44E-01		3.32E-04	
Tetrachloroethene	3.01E-03	5.20E-02		1.56E-04	
Trichloroethene	1.12E-04	7.33E-02		8.21E-06	
Vinyl Chloride	9.26E-09	1.90E+00		1.76E-08	
cis-1,2-Dichloroethene	7.61E-07				
Pathway Total					6.98E-04

----- LOCATION=AOC 204 PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	1.75E-02				
1,1-Dichloroethene	1.40E-04	6.00E-01		8.39E-05	
PCB-1254	8.74E-05	4.00E-01		3.49E-05	
PCB-1260	8.74E-05	4.00E-01		3.49E-05	
Polychlorinated biphenyl	5.94E-04	4.00E-01		2.38E-04	
Tetrachloroethene	2.24E-03	5.20E-02		1.16E-04	
Trichloroethene	1.93E-03	1.10E-02		2.12E-05	
Vinyl Chloride	3.49E-07	1.90E+00		6.64E-07	
cis-1,2-Dichloroethene	2.10E-05				
Pathway Total					5.30E-04

----- LOCATION=AOC 204 PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	9.54E-03				
1,1-Dichloroethene	7.63E-05	1.20E+00		9.16E-05	
PCB-1254		4.00E-01			
PCB-1260		4.00E-01			
Polychlorinated biphenyl		4.00E-01			
Tetrachloroethene	1.22E-03	2.00E-03		2.45E-06	
Trichloroethene	1.05E-03	6.00E-03		6.31E-06	
Vinyl Chloride	1.91E-07	3.00E-01		5.73E-08	
cis-1,2-Dichloroethene	1.15E-05				
Pathway Total					1.00E-04

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron	1.68E-03				
Tetraoxo-sulfate (1-)					
Trichloroethene	7.56E-07	7.33E-02		5.54E-08	
cis-1,2-Dichloroethene	2.16E-05				
Technetium-99					
Uranium-238					
Pathway Total					5.54E-08

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia	5.71E-06				
Fluoride	5.33E-06				
Iron	3.83E-04				
Silica					
Tetraoxo-sulfate(1-)					
Zinc	1.25E-06				
1,1-Dichloroethene	2.26E-08	6.00E-01		1.35E-08	
Pentachlorophenol	6.98E-05	1.20E-01		8.38E-06	
Trichloroethene	3.43E-05	7.33E-02		2.52E-06	
bis(2-Ethylhexyl)phthalate	3.83E-06	7.37E-02		2.82E-07	
cis-1,2-Dichloroethene	3.69E-07				
Technetium-99					
Pathway Total					1.12E-05

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	9.20E-06				
Anthracene	1.74E-07				
Benz(a)anthracene	2.70E-07	2.35E+00		6.37E-07	
Benzo(a)pyrene	3.76E-07	2.35E+01		8.85E-06	
Benzo(b)fluoranthene	7.66E-08	2.35E+00		1.80E-07	
Benzo(ghi)perylene	2.55E-07				
Chrysene	2.55E-07	2.35E-02		6.02E-09	
Di-n-butylphthalate	1.16E-07				
Di-n-octylphthalate	1.80E-07				
Dibenz(a,h)anthracene	1.95E-07	2.35E+01		4.60E-06	
Fluoranthene	4.10E-07				
Indeno(1,2,3-cd)pyrene	2.40E-07	2.35E+00		5.66E-07	
Pyrene	4.43E-07				
bis(2-Ethylhexyl)phthalate	2.55E-07	7.37E-02		1.88E-08	
Pathway Total					1.49E-05

----- LOCATION=SWMU 193A PATHWAY=Future Industrial External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium					
Anthracene					
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Chrysene					
Di-n-butylphthalate					
Di-n-octylphthalate					
Dibenz(a,h)anthracene					
Fluoranthene					
Indeno(1,2,3-cd)pyrene					
Pyrene					
bis(2-Ethylhexyl)phthalate					
Pathway Total					

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron	4.62E-01				
Tetraoxo-sulfate(1-)	1.44E-01				
Trichloroethene	1.30E-05	1.10E-02		1.43E-07	
cis-1,2-Dichloroethene	5.94E-04				
Technetium-99	2.30E+05	1.40E-12		3.22E-07	
Uranium-238	8.25E+03	6.20E-11		5.12E-07	
Pathway Total					9.77E-07

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia	1.05E-03				
Fluoride	1.47E-03				
Iron	1.06E-01				
Silica	6.64E-02				
Tetraoxo-sulfate(1-)	3.56E-01				
Zinc	3.45E-04				
1,1-Dichloroethene	6.99E-07	6.00E-01		4.19E-07	
Pentachlorophenol	2.96E-05	1.20E-01		3.55E-06	
Trichloroethene	5.91E-04	1.10E-02		6.50E-06	
bis(2-Ethylhexyl)phthalate	4.51E-05	1.40E-02		6.31E-07	
cis-1,2-Dichloroethene	1.02E-05				
Technetium-99	1.20E+06	1.40E-12		1.68E-06	
Pathway Total					1.28E-05

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	2.14E-06				
Anthracene	2.03E-08				
Benz(a)anthracene	3.15E-08	7.30E-01		2.30E-08	
Benzo(a)pyrene	4.37E-08	7.30E+00		3.19E-07	
Benzo(b)fluoranthene	8.91E-09	7.30E-01		6.51E-09	
Benzo(ghi)perylene	2.97E-08				
Chrysene	2.97E-08	7.30E-03		2.17E-10	
Di-n-butylphthalate	1.35E-08				
Di-n-octylphthalate	2.10E-08				
Dibenz(a,h)anthracene	2.27E-08	7.30E+00		1.66E-07	
Fluoranthene	4.77E-08				
Indeno(1,2,3-cd)pyrene	2.80E-08	7.30E-01		2.04E-08	
Pyrene	5.15E-08				
bis(2-Ethylhexyl)phthalate	2.97E-08	1.40E-02		4.16E-10	
Pathway Total					5.35E-07

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Inhalation of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron					
Tetraoxo-sulfate(1-)					

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Inhalation of McNairy Groundwater -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	7.11E-06	6.00E-03		4.26E-08	
cis-1,2-Dichloroethene	3.24E-04				
Technetium-99		2.89E-12			
Uranium-238		1.24E-08			
Pathway Total					4.26E-08

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia					
Fluoride					
Iron					
Silica					
Tetraoxo-sulfate(1-)					
Zinc					
1,1-Dichloroethene	3.82E-07	1.20E+00		4.58E-07	
Pentachlorophenol					
Trichloroethene	3.23E-04	6.00E-03		1.94E-06	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	5.54E-06				
Technetium-99		2.89E-12			
Pathway Total					2.39E-06

----- LOCATION=SWMU 193A PATHWAY=Future Industrial Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	3.11E-11		1.20E+01	3.73E-10	
Anthracene	1.14E-08				
Benz(a)anthracene	1.47E-09		8.80E-02	1.29E-10	
Benzo(a)pyrene	7.86E-10		8.80E-01	6.92E-10	
Benzo(b)fluoranthene	8.48E-10		8.80E-02	7.46E-11	
Benzo(ghi)perylene	4.32E-13				
Chrysene	4.81E-09		8.80E-04	4.23E-12	
Di-n-butylphthalate	7.34E-10				
Di-n-octylphthalate	1.54E-10				
Dibenz(a,h)anthracene	9.62E-11		8.80E-01	8.47E-11	
Fluoranthene	6.88E-09				
Indeno(1,2,3-cd)pyrene	2.16E-10		8.80E-02	1.90E-11	
Pyrene	5.98E-09				
bis(2-Ethylhexyl)phthalate	6.10E-11				
Pathway Total					1.38E-09

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	2.64E-06	7.33E-02		1.93E-07	
cis-1,2-Dichloroethene	2.92E-06				
Pathway Total					1.93E-07

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	1.83E-07	6.00E-01		1.10E-07	
Acetone	2.38E-07				
Carbon Tetrachloride	1.53E-06	2.00E-01		3.07E-07	
Di-n-butylphthalate	1.48E-05				
Trichloroethene	1.01E-04	7.33E-02		7.44E-06	
bis(2-Ethylhexyl)phthalate	2.99E-06	7.37E-02		2.21E-07	
cis-1,2-Dichloroethene	1.04E-06				
Technetium-99					
Pathway Total					8.08E-06

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	1.18E-06	4.30E+02		5.07E-04	
Chromium	6.66E-05				
Vanadium	4.88E-05				
Pathway Total					5.07E-04

----- LOCATION=SWMU 193B PATHWAY=Future Industrial External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium					
Chromium					
Vanadium					
Pathway Total					

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	4.54E-05	1.10E-02		5.00E-07	
cis-1,2-Dichloroethene	8.04E-05				
Pathway Total					5.00E-07

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	5.66E-06	6.00E-01		3.39E-06	
Acetone	1.15E-04				
Carbon Tetrachloride	1.92E-05	1.30E-01		2.50E-06	
Di-n-butylphthalate	3.55E-05				
Trichloroethene	1.75E-03	1.10E-02		1.92E-05	
bis(2-Ethylhexyl)phthalate	3.52E-05	1.40E-02		4.93E-07	
cis-1,2-Dichloroethene	2.87E-05				
Technetium-99	1.71E+05	1.40E-12		2.39E-07	
Pathway Total					2.58E-05

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	2.74E-07	4.30E+00		1.18E-06	
Chromium	1.55E-05				
Vanadium	1.14E-05				
Pathway Total					1.18E-06

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Inhalation of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	2.48E-05	6.00E-03		1.49E-07	
cis-1,2-Dichloroethene	4.39E-05				
Pathway Total					1.49E-07

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	3.09E-06	1.20E+00		3.71E-06	
Acetone	6.30E-05				
Carbon Tetrachloride	1.05E-05	5.30E-02		5.56E-07	
Di-n-butylphthalate					
Trichloroethene	9.54E-04	6.00E-03		5.73E-06	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	1.57E-05				
Technetium-99		2.89E-12			
Pathway Total					9.99E-06

----- LOCATION=SWMU 193B PATHWAY=Future Industrial Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	3.99E-12		2.40E+00	9.57E-12	
Chromium	2.25E-10		1.20E+01	2.70E-09	
Vanadium	1.65E-10				
Pathway Total					2.71E-09

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	4.85E-04				
Antimony	1.45E-06				
Arsenic	1.55E-07	3.66E+00		5.67E-07	
Barium	3.10E-06				
Beryllium	1.41E-07	4.30E+02		6.05E-05	
Cadmium	4.48E-07				
Chromium	1.82E-06				
Cobalt	6.74E-07				
Iron	7.47E-04				

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Dermal Contact with McNairy Groundwater -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Lead	3.17E-06				
Manganese	1.73E-05				
Mercury	2.54E-09				
Molybdenum	5.86E-07				
Nickel	6.81E-07				
Silica					
Silver	4.21E-07				
Tetraoxo-sulfate(1-)					
Thallium	1.56E-06				
Uranium	8.12E-08				
Vanadium	1.06E-05				
Zinc	2.58E-06				
1,1,2-Trichloroethane	2.66E-07	7.04E-02		1.87E-08	
1,1-Dichloroethene	2.82E-07	6.00E-01		1.69E-07	
1,2-Dichloroethane	1.68E-07	9.10E-02		1.53E-08	
Benzene	6.66E-07	2.99E-02		1.99E-08	
Bromodichloromethane	1.84E-07	6.33E-02		1.16E-08	
Carbon Tetrachloride	6.98E-07	2.00E-01		1.40E-07	
Chloroform	2.82E-07	3.05E-02		8.61E-09	
Ethylbenzene	2.35E-06				
Polychlorinated biphenyl	4.39E-07	4.44E-01		1.95E-07	
Tetrachloroethene	1.17E-05	5.20E-02		6.10E-07	
Trichloroethene	2.50E-07	7.33E-02		1.84E-08	
Vinyl Chloride	8.51E-07	1.90E+00		1.62E-06	
Xylene	6.55E-06				
cis-1,2-Dichloroethene	6.34E-07				
trans-1,2-Dichloroethene	6.79E-08				
Radon-222					
Pathway Total					6.39E-05

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	7.63E-06				
Trichloroethene	3.29E-05	7.33E-02		2.41E-06	
Pathway Total					2.41E-06

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	4.11E-06				
Lead	1.87E-05				
Zinc	3.13E-05				
Pathway Total					

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Future Industrial External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium					
Lead					
Zinc					
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	1.34E-01				
Antimony	4.00E-04				
Arsenic	4.27E-05	1.50E+00		6.40E-05	
Barium	8.54E-04				
Beryllium	3.88E-05	4.30E+00		1.67E-04	
Cadmium	1.24E-04				
Chromium	5.01E-04				
Cobalt	1.86E-04				
Iron	2.06E-01				
Lead	8.74E-04				
Manganese	4.76E-03				
Mercury	6.99E-07				
Molybdenum	1.61E-04				
Nickel	1.88E-04				
Silica	2.80E-02				
Silver	1.16E-04				
Tetraoxo-sulfate(1-)	2.30E-02				
Thallium	4.30E-04				
Uranium	2.24E-05				
Vanadium	2.92E-03				
Zinc	7.10E-04				
1,1,2-Trichloroethane	8.74E-06	5.70E-02		4.98E-07	
1,1-Dichloroethene	8.74E-06	6.00E-01		5.24E-06	
1,2-Dichloroethane	8.74E-06	9.10E-02		7.95E-07	
Benzene	8.74E-06	2.90E-02		2.53E-07	
Bromodichloromethane	8.74E-06	6.20E-02		5.42E-07	
Carbon Tetrachloride	8.74E-06	1.30E-01		1.14E-06	
Chloroform	8.74E-06	6.10E-03		5.33E-08	
Ethylbenzene	8.74E-06				
Polychlorinated biphenyl	3.49E-07	4.00E-01		1.40E-07	
Tetrachloroethene	8.74E-06	5.20E-02		4.54E-07	
Trichloroethene	4.31E-06	1.10E-02		4.74E-08	
Vinyl Chloride	3.21E-05	1.90E+00		6.10E-05	
Xylene	1.90E-05				
cis-1,2-Dichloroethene	1.75E-05				
trans-1,2-Dichloroethene	1.75E-05				
Radon-222	9.81E+05				
Pathway Total					3.01E-04

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	1.96E-03				
Trichloroethene	5.66E-04	1.10E-02		6.23E-06	
Pathway Total					6.23E-06

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	9.56E-07				
Lead	4.36E-06				
Zinc	7.27E-06				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Inhalation of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Antimony					
Arsenic		5.00E+01			
Barium					
Beryllium		8.40E+00			
Cadmium		6.10E+00			
Chromium		4.10E+01			
Cobalt					
Iron					
Lead					
Manganese					
Mercury					
Molybdenum					
Nickel					
Silica					
Silver					
Tetraoxo-sulfate(1-)					
Thallium					
Uranium					
Vanadium					
Zinc					
1,1,2-Trichloroethane	4.77E-06	5.70E-02		2.72E-07	
1,1-Dichloroethene	4.77E-06	1.20E+00		5.73E-06	
1,2-Dichloroethane	4.77E-06	9.10E-02		4.34E-07	
Benzene	4.77E-06	2.90E-02		1.38E-07	
Bromodichloromethane	4.77E-06				
Carbon Tetrachloride	4.77E-06	5.30E-02		2.53E-07	
Chloroform	4.77E-06	8.10E-02		3.86E-07	
Ethylbenzene	4.77E-06				
Polychlorinated biphenyl		4.00E-01			
Tetrachloroethene	4.77E-06	2.00E-03		9.54E-09	
Trichloroethene	2.35E-06	6.00E-03		1.41E-08	
Vinyl Chloride	1.75E-05	3.00E-01		5.26E-06	
Xylene	1.04E-05				
cis-1,2-Dichloroethene	9.54E-06				
trans-1,2-Dichloroethene	9.54E-06				
Radon-222	6.11E+06	7.57E-12		4.63E-05	
Pathway Total					5.88E-05

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	1.07E-03				
Trichloroethene	3.09E-04	6.00E-03		1.86E-06	
Pathway Total					1.86E-06

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Future Industrial Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.39E-11		1.20E+01	1.67E-10	
Lead	6.33E-11				
Zinc	1.06E-10				
Pathway Total					1.67E-10

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	1.17E-06	6.00E-01		7.05E-07	
Carbon Tetrachloride	7.81E-07	2.00E-01		1.56E-07	
Trichloroethene	8.84E-05	7.33E-02		6.48E-06	
cis-1,2-Dichloroethene	1.46E-05				
Pathway Total					7.34E-06

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	1.37E-04				
Arsenic	6.99E-08	3.66E+00		2.56E-07	
Barium	4.36E-06				
Beryllium	1.31E-07	4.30E+02		5.65E-05	
Chromium	1.61E-06				
Cobalt	1.20E-06				
Copper	1.01E-06				
Iron	2.94E-04				
Lead	1.03E-06				
Lithium	9.43E-07				
Manganese	2.11E-05				
Mercury	5.48E-09				
Nickel	1.95E-06				
Silica					
Sulfate	1.50E-04				
Tetraxo-sulfate (1-)					
Vanadium	4.66E-06				
Zinc	2.86E-06				
1,1-Dichloroethene	2.02E-06	6.00E-01		1.21E-06	
Trichloroethene	1.37E-04	7.33E-02		1.01E-05	
bis(2-Ethylhexyl) phthalate	2.84E-06	7.37E-02		2.09E-07	
cis-1,2-Dichloroethene	8.93E-07				
Radon-222					
Technetium-99					
Pathway Total					6.83E-05

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	1.56E-04				
Beryllium	5.01E-07	4.30E+02		2.15E-04	
Chromium	7.07E-06				

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION-SWMU 99A PATHWAY-Future Industrial Dermal Contact with Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Zinc	8.48E-05				
Acenaphthene	4.96E-07				
Acenaphthylene	3.93E-07				
Anthracene	8.91E-07				
Benz (a) anthracene	1.20E-06	2.35E+00		2.82E-06	
Benzo (a) pyrene	7.35E-07	2.35E+01		1.73E-05	
Benzo (b) fluoranthene	1.73E-06	2.35E+00		4.07E-06	
Benzo (ghi) perylene	1.12E-06				
Benzo (k) fluoranthene	8.60E-07	2.35E-01		2.03E-07	
Chrysene	1.97E-06	2.35E-02		4.63E-08	
Dibenz (a, h) anthracene	3.77E-07	2.35E+01		8.87E-06	
Dibenzofuran	1.85E-07				
Fluoranthene	1.28E-06				
Fluorene	3.29E-07				
Indeno (1, 2, 3-cd) pyrene	1.20E-06	2.35E+00		2.83E-06	
PCB-1016	2.14E-07	2.22E+00		4.76E-07	
PCB-1254	8.66E-08	2.22E+00		1.92E-07	
PCB-1260	1.69E-07	2.22E+00		3.75E-07	
Phenanthrene	1.49E-06				
Pyrene	1.47E-06				
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					2.53E-04

----- LOCATION-SWMU 99A PATHWAY-Future Industrial External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium					
Beryllium					
Chromium					
Zinc					
Acenaphthene					
Acenaphthylene					
Anthracene					
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
Dibenzofuran					
Fluoranthene					
Fluorene					
Indeno (1, 2, 3-cd) pyrene					
PCB-1016					
PCB-1254					
PCB-1260					
Phenanthrene					
Pyrene					
Cesium-137	4.83E+00	2.09E-06		1.01E-05	
Neptunium-237	5.84E+01	4.62E-07		2.70E-05	

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Future Industrial External Exposure to Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Technetium-99	2.10E+03	6.19E-13		1.30E-09	
Thorium-234	9.85E+01	3.50E-09		3.45E-07	
Uranium-234	7.49E+01	2.14E-11		1.60E-09	
Uranium-238	2.36E+02	6.57E-08		1.55E-05	
Pathway Total					5.29E-05

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	3.64E-05	6.00E-01		2.18E-05	
Carbon Tetrachloride	9.78E-06	1.30E-01		1.27E-06	
Trichloroethene	1.52E-03	1.10E-02		1.67E-05	
cis-1,2-Dichloroethene	4.03E-04				
Pathway Total					3.98E-05

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	3.78E-02				
Arsenic	1.93E-05	1.50E+00		2.89E-05	
Barium	1.20E-03				
Beryllium	3.62E-05	4.30E+00		1.56E-04	
Chromium	4.43E-04				
Cobalt	3.30E-04				
Copper	2.79E-04				
Iron	8.10E-02				
Lead	2.84E-04				
Lithium	2.60E-04				
Manganese	5.81E-03				
Mercury	1.51E-06				
Nickel	5.36E-04				
Silica	3.62E-02				
Sulfate	4.14E-02				
Tetraoxo-sulfate (1-)	3.44E-02				
Vanadium	1.28E-03				
Zinc	7.87E-04				
1,1-Dichloroethene	6.25E-05	6.00E-01		3.75E-05	
Trichloroethene	2.36E-03	1.10E-02		2.60E-05	
bis(2-Ethylhexyl)phthalate	3.34E-05	1.40E-02		4.68E-07	
cis-1,2-Dichloroethene	2.46E-05				
Radon-222	4.14E+06				
Technetium-99	2.81E+05	1.40E-12		3.94E-07	
Pathway Total					2.49E-04

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	3.63E-05				

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Ingestion of Soil -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	1.16E-07	4.30E+00		5.01E-07	
Chromium	1.64E-06				
Zinc	1.97E-05				
Acenaphthene	5.77E-08				
Acenaphthylene	4.57E-08				
Anthracene	1.04E-07				
Benz (a) anthracene	1.39E-07	7.30E-01		1.01E-07	
Benzo (a) pyrene	8.55E-08	7.30E+00		6.24E-07	
Benzo (b) fluoranthene	2.01E-07	7.30E-01		1.47E-07	
Benzo (ghi) perylene	1.30E-07				
Benzo (k) fluoranthene	1.00E-07	7.30E-02		7.30E-09	
Chrysene	2.29E-07	7.30E-03		1.67E-09	
Dibenz (a, h) anthracene	4.38E-08	7.30E+00		3.20E-07	
Dibenzofuran	2.15E-08				
Fluoranthene	1.49E-07				
Fluorene	3.83E-08				
Indeno (1, 2, 3-cd) pyrene	1.40E-07	7.30E-01		1.02E-07	
PCB-1016	4.16E-08	2.00E+00		8.31E-08	
PCB-1254	1.68E-08	2.00E+00		3.35E-08	
PCB-1260	3.27E-08	2.00E+00		6.54E-08	
Phenanthrene	1.73E-07				
Pyrene	1.71E-07				
Cesium-137	3.30E+02	3.16E-11		1.04E-08	
Neptunium-237	4.00E+03	3.00E-10		1.20E-06	
Technetium-99	1.44E+05	1.40E-12		2.02E-07	
Thorium-234	6.74E+03	1.93E-11		1.30E-07	
Uranium-234	5.13E+03	4.44E-11		2.28E-07	
Uranium-238	1.62E+04	6.20E-11		1.00E-06	
Pathway Total					4.76E-06

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Inhalation of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	1.99E-05	1.20E+00		2.38E-05	
Carbon Tetrachloride	5.34E-06	5.30E-02		2.83E-07	
Trichloroethene	8.31E-04	6.00E-03		4.99E-06	
cis-1,2-Dichloroethene	2.20E-04				
Pathway Total					2.91E-05

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Arsenic		5.00E+01			
Barium					
Beryllium		8.40E+00			
Chromium		4.10E+01			
Cobalt					
Copper					
Iron					
Lead					
Lithium					

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Inhalation of RGA Groundwater -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Manganese					
Mercury					
Nickel					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium					
Zinc					
1,1-Dichloroethene	3.41E-05	1.20E+00		4.10E-05	
Trichloroethene	1.29E-03	6.00E-03		7.74E-06	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	1.34E-05				
Radon-222	2.58E+07	7.57E-12		1.95E-04	
Technetium-99		2.89E-12			
Pathway Total					2.44E-04

----- LOCATION=SWMU 99A PATHWAY=Future Industrial Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	5.28E-10				
Beryllium	1.69E-12		2.40E+00	4.06E-12	
Chromium	2.39E-11		1.20E+01	2.87E-10	
Zinc	2.87E-10				
Acenaphthene	1.16E-07				
Acenaphthylene	6.79E-08				
Anthracene	5.85E-08				
Benz(a)anthracene	6.49E-09		8.80E-02	5.71E-10	
Benzo(a)pyrene	1.54E-09		8.80E-01	1.35E-09	
Benzo(b)fluoranthene	1.91E-08		8.80E-02	1.68E-09	
Benzo(ghi)perylene	1.89E-12				
Benzo(k)fluoranthene	1.12E-09		8.80E-03	9.86E-12	
Chrysene	3.71E-08		8.80E-04	3.26E-11	
Dibenz(a,h)anthracene	1.86E-10		8.80E-01	1.63E-10	
Dibenzofuran	2.34E-08				
Fluoranthene	2.15E-08				
Fluorene	3.30E-08				
Indeno(1,2,3-cd)pyrene	1.08E-09		8.80E-02	9.52E-11	
PCB-1016	3.86E-08		5.71E-01	2.21E-08	
PCB-1254	1.39E-08		5.71E-01	7.95E-09	
PCB-1260	3.22E-08		5.71E-01	1.84E-08	
Phenanthrene	2.52E-12				
Pyrene	1.98E-08				
Cesium-137	4.12E-03	1.91E-11		7.86E-14	
Neptunium-237	4.98E-02	3.45E-08		1.72E-09	
Technetium-99	1.79E+00	2.89E-12		5.18E-12	
Thorium-234	8.40E-02	1.90E-11		1.60E-12	
Uranium-234	6.38E-02	1.40E-08		8.94E-10	
Uranium-238	2.01E-01	1.24E-08		2.50E-09	
Pathway Total					5.77E-08

Future Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99B PATHWAY=Future Industrial Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	6.22E-06				
Chromium	7.85E-07				
Iron	2.84E-05				
Manganese	3.29E-06				
Silica					
Sulfate	3.24E-04				
Tetraoxo-sulfate(1-)					
Zinc	7.40E-07				
Trichloroethene	4.22E-04	7.33E-02		3.09E-05	
Radon-222					
Pathway Total					3.09E-05

----- LOCATION=SWMU 99B PATHWAY=Future Industrial Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	1.71E-03				
Chromium	2.16E-04				
Iron	7.83E-03				
Manganese	9.07E-04				
Silica	3.20E-02				
Sulfate	8.94E-02				
Tetraoxo-sulfate(1-)	5.06E-02				
Zinc	2.04E-04				
Trichloroethene	7.26E-03	1.10E-02		7.99E-05	
Radon-222	2.58E+06				
Pathway Total					7.99E-05

----- LOCATION=SWMU 99B PATHWAY=Future Industrial Inhalation of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium					
Chromium		4.10E+01			
Iron					
Manganese					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Zinc					
Trichloroethene	3.97E-03	6.00E-03		2.38E-05	
Radon-222	1.60E+07	7.57E-12		1.21E-04	
Pathway Total					1.45E-04

Industrial Hazard Index Estimates

----- LOCATION-SWMU 193A PATHWAY=Industrial Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.57E-05	6.00E-05		4.29E-01	
Anthracene	4.88E-07	2.28E-01		2.14E-06	
Benz (a) anthracene	7.57E-07				
Benzo (a) pyrene	1.05E-06				
Benzo (b) fluoranthene	2.15E-07				
Benzo (ghi) perylene	7.15E-07				
Chrysene	7.15E-07				
Di-n-butylphthalate	3.24E-07	1.00E-01		3.24E-06	
Di-n-octylphthalate	5.05E-07	1.80E-02		2.80E-05	
Dibenz (a, h) anthracene	5.47E-07				
Fluoranthene	1.15E-06	1.24E-02		9.26E-05	
Indeno (1, 2, 3-cd) pyrene	6.73E-07				
Pyrene	1.24E-06	9.30E-03		1.33E-04	
bis (2-Ethylhexyl) phthalate	7.15E-07	3.80E-03		1.88E-04	
Pathway Total					4.30E-01

----- LOCATION-SWMU 193A PATHWAY=Industrial Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	5.99E-06	3.00E-03		2.00E-03	
Anthracene	5.68E-08	3.00E-01		1.89E-07	
Benz (a) anthracene	8.81E-08				
Benzo (a) pyrene	1.22E-07				
Benzo (b) fluoranthene	2.50E-08				
Benzo (ghi) perylene	8.32E-08				
Chrysene	8.32E-08				
Di-n-butylphthalate	3.77E-08	1.00E-01		3.77E-07	
Di-n-octylphthalate	5.87E-08	2.00E-02		2.94E-06	
Dibenz (a, h) anthracene	6.36E-08				
Fluoranthene	1.34E-07	4.00E-02		3.34E-06	
Indeno (1, 2, 3-cd) pyrene	7.83E-08				
Pyrene	1.44E-07	3.00E-02		4.81E-06	
bis (2-Ethylhexyl) phthalate	8.32E-08	2.00E-02		4.16E-06	
Pathway Total					2.01E-03

----- LOCATION-SWMU 193A PATHWAY=Industrial Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	8.70E-11		1.00E-04	8.70E-07	
Anthracene	3.20E-08		1.05E+00	3.05E-08	
Benz (a) anthracene	4.11E-09				
Benzo (a) pyrene	2.20E-09				
Benzo (b) fluoranthene	2.37E-09				
Benzo (ghi) perylene	1.21E-12				
Chrysene	1.35E-08				
Di-n-butylphthalate	2.06E-09		3.50E-01	5.87E-09	
Di-n-octylphthalate	4.33E-10		7.00E-02	6.18E-09	
Dibenz (a, h) anthracene	2.69E-10				
Fluoranthene	1.93E-08		1.40E-01	1.38E-07	
Indeno (1, 2, 3-cd) pyrene	6.05E-10				
Pyrene	1.67E-08		1.05E-01	1.59E-07	
bis (2-Ethylhexyl) phthalate	1.71E-10		7.00E-02	2.44E-09	
Pathway Total					1.21E-06

Industrial Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Industrial Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	3.30E-06	2.00E-05		1.65E-01	
Chromium	1.87E-04	6.00E-05		3.11E+00	
Vanadium	1.37E-04	7.00E-05		1.95E+00	
Pathway Total					5.23E+00

----- LOCATION=SWMU 193B PATHWAY=Industrial Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	7.68E-07	2.00E-03		3.84E-04	
Chromium	4.34E-05	3.00E-03		1.45E-02	
Vanadium	3.18E-05	7.00E-03		4.54E-03	
Pathway Total					1.94E-02

----- LOCATION=SWMU 193B PATHWAY=Industrial Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	1.12E-11		2.00E-05	5.58E-07	
Chromium	6.31E-10		1.00E-04	6.31E-06	
Vanadium	4.62E-10				
Pathway Total					6.87E-06

----- LOCATION=SWMU 193C PATHWAY=Industrial Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.15E-05	6.00E-05		1.92E-01	
Lead	5.25E-05	1.50E-08		3.50E+03	
Zinc	8.75E-05	6.00E-02		1.46E-03	
Pathway Total					3.50E+03

----- LOCATION=SWMU 193C PATHWAY=Industrial Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.68E-06	3.00E-03		8.92E-04	
Lead	1.22E-05	1.00E-07		1.22E+02	
Zinc	2.04E-05	3.00E-01		6.79E-05	
Pathway Total					1.22E+02

----- LOCATION=SWMU 193C PATHWAY=Industrial Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	3.89E-11		1.00E-04	3.89E-07	

Industrial Hazard Index Estimates

----- LOCATION-SWMU 193C PATHWAY=Industrial Inhalation of Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Lead	1.77E-10		1.00E-03	1.77E-07	
Zinc	2.96E-10				
Pathway Total					5.66E-07

----- LOCATION-SWMU 99A PATHWAY=Industrial Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	4.38E-04	4.90E-03		8.93E-02	
Beryllium	1.40E-06	2.00E-05		7.01E-02	
Chromium	1.98E-05	6.00E-05		3.30E-01	
Zinc	2.38E-04	6.00E-02		3.96E-03	
Acenaphthene	1.39E-06	1.86E-02		7.46E-05	
Acenaphthylene	1.10E-06				
Anthracene	2.49E-06	2.28E-01		1.09E-05	
Benz(a)anthracene	3.35E-06				
Benzo(a)pyrene	2.06E-06				
Benzo(b)fluoranthene	4.84E-06				
Benzo(ghi)perylene	3.14E-06				
Benzo(k)fluoranthene	2.41E-06				
Chrysene	5.51E-06				
Dibenz(a,h)anthracene	1.05E-06				
Dibenzofuran	5.18E-07	2.00E-03		2.59E-04	
Fluoranthene	3.58E-06	1.24E-02		2.89E-04	
Fluorene	9.21E-07	2.00E-02		4.61E-05	
Indeno(1,2,3-cd)pyrene	3.37E-06				
PCB-1016	6.00E-07	6.30E-05		9.53E-03	
PCB-1254	2.42E-07	1.80E-05		1.35E-02	
PCB-1260	4.72E-07				
Phenanthrene	4.17E-06				
Pyrene	4.11E-06	9.30E-03		4.42E-04	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					5.17E-01

----- LOCATION-SWMU 99A PATHWAY=Industrial Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	1.02E-04	7.00E-02		1.45E-03	
Beryllium	3.26E-07	2.00E-03		1.63E-04	
Chromium	4.60E-06	3.00E-03		1.53E-03	
Zinc	5.52E-05	3.00E-01		1.84E-04	
Acenaphthene	1.61E-07	6.00E-02		2.69E-06	
Acenaphthylene	1.28E-07				
Anthracene	2.90E-07	3.00E-01		9.66E-07	
Benz(a)anthracene	3.89E-07				
Benzo(a)pyrene	2.39E-07				
Benzo(b)fluoranthene	5.63E-07				
Benzo(ghi)perylene	3.65E-07				

Industrial Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Industrial Ingestion of Soil -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Benzo(k)fluoranthene	2.80E-07				
Chrysene	6.41E-07				
Dibenz(a,h)anthracene	1.23E-07				
Dibenzofuran	6.02E-08	4.00E-03		1.50E-05	
Fluoranthene	4.17E-07	4.00E-02		1.04E-05	
Fluorene	1.07E-07	4.00E-02		2.68E-06	
Indeno(1,2,3-cd)pyrene	3.92E-07				
PCB-1016	1.16E-07	7.00E-05		1.66E-03	
PCB-1254	4.70E-08	2.00E-05		2.35E-03	
PCB-1260	9.16E-08				
Phenanthrene	4.85E-07				
Pyrene	4.78E-07	3.00E-02		1.59E-05	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					7.39E-03

----- LOCATION=SWMU 99A PATHWAY=Industrial Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	1.48E-09		5.00E-04	2.96E-06	
Beryllium	4.74E-12		2.00E-05	2.37E-07	
Chromium	6.69E-11		1.00E-04	6.69E-07	
Zinc	8.03E-10				
Acenaphthene	3.26E-07		2.10E-01	1.55E-06	
Acenaphthylene	1.90E-07				
Anthracene	1.64E-07		1.05E+00	1.56E-07	
Benz(a)anthracene	1.82E-08				
Benzo(a)pyrene	4.31E-09				
Benzo(b)fluoranthene	5.36E-08				
Benzo(ghi)perylene	5.31E-12				
Benzo(k)fluoranthene	3.14E-09				
Chrysene	1.04E-07				
Dibenz(a,h)anthracene	5.19E-10				
Dibenzofuran	6.55E-08		1.40E-02	4.68E-06	
Fluoranthene	6.01E-08		1.40E-01	4.29E-07	
Fluorene	9.25E-08		1.40E-01	6.61E-07	
Indeno(1,2,3-cd)pyrene	3.03E-09				
PCB-1016	1.08E-07		2.45E-04	4.41E-04	
PCB-1254	3.90E-08		7.00E-05	5.57E-04	
PCB-1260	9.01E-08				
Phenanthrene	7.05E-12				
Pyrene	5.54E-08		1.05E-01	5.28E-07	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					1.01E-03

Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Industrial Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	9.20E-06				
Anthracene	1.74E-07				
Benz (a) anthracene	2.70E-07	2.35E+00		6.37E-07	
Benzo (a) pyrene	3.76E-07	2.35E+01		8.85E-06	
Benzo (b) fluoranthene	7.66E-08	2.35E+00		1.80E-07	
Benzo (ghi) perylene	2.55E-07				
Chrysene	2.55E-07	2.35E-02		6.02E-09	
Di-n-butylphthalate	1.16E-07				
Di-n-octylphthalate	1.80E-07				
Dibenz (a, h) anthracene	1.95E-07	2.35E+01		4.60E-06	
Fluoranthene	4.10E-07				
Indeno (1, 2, 3-cd) pyrene	2.40E-07	2.35E+00		5.66E-07	
Pyrene	4.43E-07				
bis (2-Ethylhexyl) phthalate	2.55E-07	7.37E-02		1.88E-08	
Pathway Total					1.49E-05

----- LOCATION=SWMU 193A PATHWAY=Industrial External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium					
Anthracene					
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Chrysene					
Di-n-butylphthalate					
Di-n-octylphthalate					
Dibenz (a, h) anthracene					
Fluoranthene					
Indeno (1, 2, 3-cd) pyrene					
Pyrene					
bis (2-Ethylhexyl) phthalate					
Pathway Total					

----- LOCATION=SWMU 193A PATHWAY=Industrial Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	2.14E-06				
Anthracene	2.03E-08				
Benz (a) anthracene	3.15E-08	7.30E-01		2.30E-08	
Benzo (a) pyrene	4.37E-08	7.30E+00		3.19E-07	
Benzo (b) fluoranthene	8.91E-09	7.30E-01		6.51E-09	
Benzo (ghi) perylene	2.97E-08				
Chrysene	2.97E-08	7.30E-03		2.17E-10	
Di-n-butylphthalate	1.35E-08				
Di-n-octylphthalate	2.10E-08				
Dibenz (a, h) anthracene	2.27E-08	7.30E+00		1.66E-07	
Fluoranthene	4.77E-08				
Indeno (1, 2, 3-cd) pyrene	2.80E-08	7.30E-01		2.04E-08	
Pyrene	5.15E-08				
bis (2-Ethylhexyl) phthalate	2.97E-08	1.40E-02		4.16E-10	
Pathway Total					5.35E-07

Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Industrial Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	3.11E-11		1.20E+01	3.73E-10	
Anthracene	1.14E-08				
Benz(a)anthracene	1.47E-09		8.80E-02	1.29E-10	
Benzo(a)pyrene	7.86E-10		8.80E-01	6.92E-10	
Benzo(b)fluoranthene	8.48E-10		8.80E-02	7.46E-11	
Benzo(ghi)perylene	4.32E-13				
Chrysene	4.81E-09		8.80E-04	4.23E-12	
Di-n-butylphthalate	7.34E-10				
Di-n-octylphthalate	1.54E-10				
Dibenz(a,h)anthracene	9.62E-11		8.80E-01	8.47E-11	
Fluoranthene	6.88E-09				
Indeno(1,2,3-cd)pyrene	2.16E-10		8.80E-02	1.90E-11	
Pyrene	5.98E-09				
bis(2-Ethylhexyl)phthalate	6.10E-11				
Pathway Total					1.38E-09

----- LOCATION=SWMU 193B PATHWAY=Industrial Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	1.18E-06	4.30E+02		5.07E-04	
Chromium	6.66E-05				
Vanadium	4.88E-05				
Pathway Total					5.07E-04

----- LOCATION=SWMU 193B PATHWAY=Industrial External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium					
Chromium					
Vanadium					
Pathway Total					

----- LOCATION=SWMU 193B PATHWAY=Industrial Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	2.74E-07	4.30E+00		1.18E-06	
Chromium	1.55E-05				
Vanadium	1.14E-05				
Pathway Total					1.18E-06

----- LOCATION=SWMU 193B PATHWAY=Industrial Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	3.99E-12		2.40E+00	9.57E-12	
Chromium	2.25E-10		1.20E+01	2.70E-09	

Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Industrial Inhalation of Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Vanadium	1.65E-10				
Pathway Total					2.71E-09

----- LOCATION=SWMU 193C PATHWAY=Industrial Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	4.11E-06				
Lead	1.87E-05				
Zinc	3.13E-05				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Industrial External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium					
Lead					
Zinc					
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Industrial Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	9.56E-07				
Lead	4.36E-06				
Zinc	7.27E-06				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Industrial Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.39E-11		1.20E+01	1.67E-10	
Lead	6.33E-11				
Zinc	1.06E-10				
Pathway Total					1.67E-10

----- LOCATION=SWMU 99A PATHWAY=Industrial Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	1.56E-04				
Beryllium	5.01E-07	4.30E+02		2.15E-04	

Industrial Excess Lifetime Cancer Risks

----- LOCATION-SWMU 99A PATHWAY-Industrial Dermal Contact with Soil -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	7.07E-06				
Zinc	8.48E-05				
Acenaphthene	4.96E-07				
Acenaphthylene	3.93E-07				
Anthracene	8.91E-07				
Benz (a) anthracene	1.20E-06	2.35E+00		2.82E-06	
Benzo (a) pyrene	7.35E-07	2.35E+01		1.73E-05	
Benzo (b) fluoranthene	1.73E-06	2.35E+00		4.07E-06	
Benzo (ghi) perylene	1.12E-06				
Benzo (k) fluoranthene	8.60E-07	2.35E-01		2.03E-07	
Chrysene	1.97E-06	2.35E-02		4.63E-08	
Dibenz (a, h) anthracene	3.77E-07	2.35E+01		8.87E-06	
Dibenzofuran	1.85E-07				
Fluoranthene	1.28E-06				
Fluorene	3.29E-07				
Indeno (1, 2, 3-cd) pyrene	1.20E-06	2.35E+00		2.83E-06	
PCB-1016	2.14E-07	2.22E+00		4.76E-07	
PCB-1254	8.66E-08	2.22E+00		1.92E-07	
PCB-1260	1.69E-07	2.22E+00		3.75E-07	
Phenanthrene	1.49E-06				
Pyrene	1.47E-06				
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					2.53E-04

----- LOCATION-SWMU 99A PATHWAY-Industrial External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium					
Beryllium					
Chromium					
Zinc					
Acenaphthene					
Acenaphthylene					
Anthracene					
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
Dibenzofuran					
Fluoranthene					
Fluorene					
Indeno (1, 2, 3-cd) pyrene					
PCB-1016					
PCB-1254					
PCB-1260					
Phenanthrene					
Pyrene					
Cesium-137	4.83E+00	2.09E-06		1.01E-05	

Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Industrial External Exposure to Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Neptunium-237	5.84E+01	4.62E-07		2.70E-05	
Technetium-99	2.10E+03	6.19E-13		1.30E-09	
Thorium-234	9.85E+01	3.50E-09		3.45E-07	
Uranium-234	7.49E+01	2.14E-11		1.60E-09	
Uranium-238	2.36E+02	6.57E-08		1.55E-05	
Pathway Total					5.29E-05

----- LOCATION=SWMU 99A PATHWAY=Industrial Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	3.63E-05				
Beryllium	1.16E-07	4.30E+00		5.01E-07	
Chromium	1.64E-06				
Zinc	1.97E-05				
Acenaphthene	5.77E-08				
Acenaphthylene	4.57E-08				
Anthracene	1.04E-07				
Benz(a)anthracene	1.39E-07	7.30E-01		1.01E-07	
Benzo(a)pyrene	8.55E-08	7.30E+00		6.24E-07	
Benzo(b)fluoranthene	2.01E-07	7.30E-01		1.47E-07	
Benzo(ghi)perylene	1.30E-07				
Benzo(k)fluoranthene	1.00E-07	7.30E-02		7.30E-09	
Chrysene	2.29E-07	7.30E-03		1.67E-09	
Dibenz(a,h)anthracene	4.38E-08	7.30E+00		3.20E-07	
Dibenzofuran	2.15E-08				
Fluoranthene	1.49E-07				
Fluorene	3.83E-08				
Indeno(1,2,3-cd)pyrene	1.40E-07	7.30E-01		1.02E-07	
PCB-1016	4.16E-08	2.00E+00		8.31E-08	
PCB-1254	1.68E-08	2.00E+00		3.35E-08	
PCB-1260	3.27E-08	2.00E+00		6.54E-08	
Phenanthrene	1.73E-07				
Pyrene	1.71E-07				
Cesium-137	3.30E+02	3.16E-11		1.04E-08	
Neptunium-237	4.00E+03	3.00E-10		1.20E-06	
Technetium-99	1.44E+05	1.40E-12		2.02E-07	
Thorium-234	6.74E+03	1.93E-11		1.30E-07	
Uranium-234	5.13E+03	4.44E-11		2.28E-07	
Uranium-238	1.62E+04	6.20E-11		1.00E-06	
Pathway Total					4.76E-06

----- LOCATION=SWMU 99A PATHWAY=Industrial Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	5.28E-10				
Beryllium	1.69E-12		2.40E+00	4.06E-12	
Chromium	2.39E-11		1.20E+01	2.87E-10	
Zinc	2.87E-10				
Acenaphthene	1.16E-07				
Acenaphthylene	6.79E-08				
Anthracene	5.85E-08				
Benz(a)anthracene	6.49E-09		8.80E-02	5.71E-10	

Industrial Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Industrial Inhalation of Soil -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Benzo (a) pyrene	1.54E-09		8.80E-01	1.35E-09	
Benzo (b) fluoranthene	1.91E-08		8.80E-02	1.68E-09	
Benzo (ghi) perylene	1.89E-12				
Benzo (k) fluoranthene	1.12E-09		8.80E-03	9.86E-12	
Chrysene	3.71E-08		8.80E-04	3.26E-11	
Dibenz (a, h) anthracene	1.86E-10		8.80E-01	1.63E-10	
Dibenzofuran	2.34E-08				
Fluoranthene	2.15E-08				
Fluorene	3.30E-08				
Indeno (1, 2, 3-cd) pyrene	1.08E-09		8.80E-02	9.52E-11	
PCB-1016	3.86E-08		5.71E-01	2.21E-08	
PCB-1254	1.39E-08		5.71E-01	7.95E-09	
PCB-1260	3.22E-08		5.71E-01	1.84E-08	
Phenanthrene	2.52E-12				
Pyrene	1.98E-08				
Cesium-137	4.12E-03	1.91E-11		7.86E-14	
Neptunium-237	4.98E-02	3.45E-08		1.72E-09	
Technetium-99	1.79E+00	2.89E-12		5.18E-12	
Thorium-234	8.40E-02	1.90E-11		1.60E-12	
Uranium-234	6.38E-02	1.40E-08		8.94E-10	
Uranium-238	2.01E-01	1.24E-08		2.50E-09	
Pathway Total					5.77E-08

Recreational Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Recreational Adult Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.94E-08	3.00E-03		9.82E-06	
Anthracene		3.00E-01			
Benz (a) anthracene					
Benzo (a) pyrene	1.06E-07				
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Chrysene					
Di-n-butylphthalate		1.00E-01			
Di-n-octylphthalate		2.00E-02			
Dibenz (a, h) anthracene					
Fluoranthene		4.00E-02			
Indeno (1, 2, 3-cd) pyrene					
Pyrene		3.00E-02			
bis (2-Ethylhexyl) phthalate		2.00E-02			
Pathway Total					9.82E-06

----- LOCATION=SWMU 193A PATHWAY=Recreational Adult Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.08E-06	3.00E-03		6.94E-04	
Anthracene	1.64E-09	3.00E-01		5.46E-09	
Benz (a) anthracene	4.01E-08				
Benzo (a) pyrene	1.37E-07				
Benzo (b) fluoranthene	2.78E-08				
Benzo (ghi) perylene	2.89E-07				
Chrysene	3.78E-08				
Di-n-butylphthalate	3.01E-09	1.00E-01		3.01E-08	
Di-n-octylphthalate	7.97E-05	2.00E-02		3.99E-03	
Dibenz (a, h) anthracene	3.48E-07				
Fluoranthene	1.07E-08	4.00E-02		2.67E-07	
Indeno (1, 2, 3-cd) pyrene	2.72E-07				
Pyrene	1.15E-08	3.00E-02		3.84E-07	
bis (2-Ethylhexyl) phthalate	6.65E-09	2.00E-02		3.32E-07	
Pathway Total					4.68E-03

----- LOCATION=SWMU 193A PATHWAY=Recreational Adult Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	9.16E-07	3.00E-03		3.05E-04	
Anthracene	7.36E-10	3.00E-01		2.45E-09	
Benz (a) anthracene	1.75E-08				
Benzo (a) pyrene	5.93E-08				
Benzo (b) fluoranthene	1.21E-08				
Benzo (ghi) perylene	1.25E-07				
Chrysene	1.65E-08				
Di-n-butylphthalate	1.33E-09	1.00E-01		1.33E-08	
Di-n-octylphthalate	3.45E-05	2.00E-02		1.72E-03	
Dibenz (a, h) anthracene	1.51E-07				
Fluoranthene	4.72E-09	4.00E-02		1.18E-07	
Indeno (1, 2, 3-cd) pyrene	1.18E-07				
Pyrene	5.10E-09	3.00E-02		1.70E-07	
bis (2-Ethylhexyl) phthalate	2.94E-09	2.00E-02		1.47E-07	
Pathway Total					2.03E-03

Recreational Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Recreational Child Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.84E-08	3.00E-03		9.48E-06	
Anthracene		3.00E-01			
Benz (a) anthracene					
Benzo (a) pyrene	1.03E-07				
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Chrysene					
Di-n-butylphthalate		1.00E-01			
Di-n-octylphthalate		2.00E-02			
Dibenz (a, h) anthracene					
Fluoranthene		4.00E-02			
Indeno (1, 2, 3-cd) pyrene					
Pyrene		3.00E-02			
bis (2-Ethylhexyl) phthalate		2.00E-02			
Pathway Total					9.48E-06

----- LOCATION=SWMU 193A PATHWAY=Recreational Child Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.01E-06	3.00E-03		6.70E-04	
Anthracene	1.58E-09	3.00E-01		5.27E-09	
Benz (a) anthracene	3.87E-08				
Benzo (a) pyrene	1.32E-07				
Benzo (b) fluoranthene	2.69E-08				
Benzo (ghi) perylene	2.79E-07				
Chrysene	3.65E-08				
Di-n-butylphthalate	2.91E-09	1.00E-01		2.91E-08	
Di-n-octylphthalate	7.70E-05	2.00E-02		3.85E-03	
Dibenz (a, h) anthracene	3.36E-07				
Fluoranthene	1.03E-08	4.00E-02		2.58E-07	
Indeno (1, 2, 3-cd) pyrene	2.62E-07				
Pyrene	1.11E-08	3.00E-02		3.71E-07	
bis (2-Ethylhexyl) phthalate	6.42E-09	2.00E-02		3.21E-07	
Pathway Total					4.52E-03

----- LOCATION=SWMU 193A PATHWAY=Recreational Child Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	9.67E-07	3.00E-03		3.22E-04	
Anthracene	7.77E-10	3.00E-01		2.59E-09	
Benz (a) anthracene	1.84E-08				
Benzo (a) pyrene	6.26E-08				
Benzo (b) fluoranthene	1.28E-08				
Benzo (ghi) perylene	1.32E-07				
Chrysene	1.74E-08				
Di-n-butylphthalate	1.41E-09	1.00E-01		1.41E-08	
Di-n-octylphthalate	3.64E-05	2.00E-02		1.82E-03	
Dibenz (a, h) anthracene	1.59E-07				
Fluoranthene	4.99E-09	4.00E-02		1.25E-07	
Indeno (1, 2, 3-cd) pyrene	1.24E-07				
Pyrene	5.39E-09	3.00E-02		1.80E-07	
bis (2-Ethylhexyl) phthalate	3.11E-09	2.00E-02		1.55E-07	
Pathway Total					2.14E-0

Recreational Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Recreational Teen Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.45E-08	3.00E-03		8.16E-06	
Anthracene		3.00E-01			
Benz(a)anthracene					
Benzo(a)pyrene	8.85E-08				
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Chrysene					
Di-n-butylphthalate		1.00E-01			
Di-n-octylphthalate		2.00E-02			
Dibenz(a,h)anthracene					
Fluoranthene		4.00E-02			
Indeno(1,2,3-cd)pyrene					
Pyrene		3.00E-02			
bis(2-Ethylhexyl)phthalate		2.00E-02			
Pathway Total					8.16E-06

----- LOCATION=SWMU 193A PATHWAY=Recreational Teen Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.68E-06	3.00E-03		5.62E-04	
Anthracene	1.32E-09	3.00E-01		4.41E-09	
Benz(a)anthracene	3.24E-08				
Benzo(a)pyrene	1.10E-07				
Benzo(b)fluoranthene	2.25E-08				
Benzo(ghi)perylene	2.34E-07				
Chrysene	3.06E-08				
Di-n-butylphthalate	2.44E-09	1.00E-01		2.44E-08	
Di-n-octylphthalate	6.45E-05	2.00E-02		3.23E-03	
Dibenz(a,h)anthracene	2.82E-07				
Fluoranthene	8.63E-09	4.00E-02		2.16E-07	
Indeno(1,2,3-cd)pyrene	2.20E-07				
Pyrene	9.33E-09	3.00E-02		3.11E-07	
bis(2-Ethylhexyl)phthalate	5.38E-09	2.00E-02		2.69E-07	
Pathway Total					3.79E-03

----- LOCATION=SWMU 193A PATHWAY=Recreational Teen Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.49E-06	3.00E-03		4.97E-04	
Anthracene	1.20E-09	3.00E-01		3.99E-09	
Benz(a)anthracene	2.84E-08				
Benzo(a)pyrene	9.65E-08				
Benzo(b)fluoranthene	1.97E-08				
Benzo(ghi)perylene	2.04E-07				
Chrysene	2.69E-08				
Di-n-butylphthalate	2.17E-09	1.00E-01		2.17E-08	
Di-n-octylphthalate	5.61E-05	2.00E-02		2.80E-03	
Dibenz(a,h)anthracene	2.46E-07				
Fluoranthene	7.69E-09	4.00E-02		1.92E-07	
Indeno(1,2,3-cd)pyrene	1.92E-07				
Pyrene	8.31E-09	3.00E-02		2.77E-07	
bis(2-Ethylhexyl)phthalate	4.79E-09	2.00E-02		2.39E-07	
Pathway Total					3.30E-03

Recreational Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Recreational Adult Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	1.15E-10	2.00E-03		5.74E-08	
Chromium	5.27E-08	3.00E-03		1.76E-05	
Vanadium	9.78E-09	7.00E-03		1.40E-06	
Pathway Total					1.90E-05

----- LOCATION=SWMU 193B PATHWAY=Recreational Adult Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	1.52E-08	2.00E-03		7.58E-06	
Chromium	8.43E-06	3.00E-03		2.81E-03	
Vanadium	1.55E-06	7.00E-03		2.21E-04	
Pathway Total					3.04E-03

----- LOCATION=SWMU 193B PATHWAY=Recreational Adult Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	2.91E-09	2.00E-03		1.46E-06	
Chromium	1.64E-06	3.00E-03		5.47E-04	
Vanadium	2.97E-07	7.00E-03		4.24E-05	
Pathway Total					5.91E-04

----- LOCATION=SWMU 193B PATHWAY=Recreational Child Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	1.11E-10	2.00E-03		5.54E-08	
Chromium	5.09E-08	3.00E-03		1.70E-05	
Vanadium	9.44E-09	7.00E-03		1.35E-06	
Pathway Total					1.84E-05

----- LOCATION=SWMU 193B PATHWAY=Recreational Child Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	1.46E-08	2.00E-03		7.32E-06	
Chromium	8.14E-06	3.00E-03		2.71E-03	
Vanadium	1.49E-06	7.00E-03		2.13E-04	
Pathway Total					2.93E-03

----- LOCATION=SWMU 193B PATHWAY=Recreational Child Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	3.08E-09	2.00E-03		1.54E-06	

Recreational Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Recreational Child Ingestion of Venison -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.73E-06	3.00E-03		5.78E-04	
Vanadium	3.13E-07	7.00E-03		4.48E-05	
Pathway Total					6.24E-04

----- LOCATION=SWMU 193B PATHWAY=Recreational Teen Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	9.55E-11	2.00E-03		4.77E-08	
Chromium	4.38E-08	3.00E-03		1.46E-05	
Vanadium	8.13E-09	7.00E-03		1.16E-06	
Pathway Total					1.58E-05

----- LOCATION=SWMU 193B PATHWAY=Recreational Teen Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	1.23E-08	2.00E-03		6.13E-06	
Chromium	6.82E-06	3.00E-03		2.27E-03	
Vanadium	1.25E-06	7.00E-03		1.79E-04	
Pathway Total					2.46E-03

----- LOCATION=SWMU 193B PATHWAY=Recreational Teen Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	4.74E-09	2.00E-03		2.37E-06	
Chromium	2.67E-06	3.00E-03		8.90E-04	
Vanadium	4.83E-07	7.00E-03		6.90E-05	
Pathway Total					9.62E-04

----- LOCATION=SWMU 193C PATHWAY=Recreational Adult Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.93E-08	3.00E-03		6.43E-06	
Lead	4.38E-09	1.00E-07		4.38E-02	
Zinc		3.00E-01			
Pathway Total					4.38E-02

----- LOCATION=SWMU 193C PATHWAY=Recreational Adult Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	9.31E-07	3.00E-03		3.10E-04	

Recreational Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Recreational Adult Ingestion of Rabbit -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Lead	2.15E-07	1.00E-07		2.15E+00	
Zinc	2.90E-04	3.00E-01		9.68E-04	
Pathway Total					2.15E+00

----- LOCATION=SWMU 193C PATHWAY=Recreational Adult Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.05E-06	3.00E-03		6.82E-04	
Lead	4.82E-07	1.00E-07		4.82E+00	
Zinc	7.04E-04	3.00E-01		2.35E-03	
Pathway Total					4.82E+00

----- LOCATION=SWMU 193C PATHWAY=Recreational Child Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.86E-08	3.00E-03		6.21E-06	
Lead	4.23E-09	1.00E-07		4.23E-02	
Zinc		3.00E-01			
Pathway Total					4.23E-02

----- LOCATION=SWMU 193C PATHWAY=Recreational Child Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	8.99E-07	3.00E-03		3.00E-04	
Lead	2.08E-07	1.00E-07		2.08E+00	
Zinc	2.80E-04	3.00E-01		9.35E-04	
Pathway Total					2.08E+00

----- LOCATION=SWMU 193C PATHWAY=Recreational Child Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.16E-06	3.00E-03		7.21E-04	
Lead	5.09E-07	1.00E-07		5.09E+00	
Zinc	7.43E-04	3.00E-01		2.48E-03	
Pathway Total					5.09E+00

----- LOCATION=SWMU 193C PATHWAY=Recreational Teen Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.60E-08	3.00E-03		5.34E-06	

Recreational Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Recreational Teen Ingestion of Quail -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Lead	3.64E-09	1.00E-07		3.64E-02	
Zinc		3.00E-01			
Pathway Total					3.64E-02

----- LOCATION=SWMU 193C PATHWAY=Recreational Teen Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	7.53E-07	3.00E-03		2.51E-04	
Lead	1.74E-07	1.00E-07		1.74E+00	
Zinc	2.35E-04	3.00E-01		7.83E-04	
Pathway Total					1.74E+00

----- LOCATION=SWMU 193C PATHWAY=Recreational Teen Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	3.33E-06	3.00E-03		1.11E-03	
Lead	7.84E-07	1.00E-07		7.84E+00	
Zinc	1.15E-03	3.00E-01		3.82E-03	
Pathway Total					7.85E+00

----- LOCATION=SWMU 99A PATHWAY=Recreational Adult Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	7.88E-08	7.00E-02		1.13E-06	
Beryllium	2.72E-11	2.00E-03		1.36E-08	
Chromium	3.12E-09	3.00E-03		1.04E-06	
Zinc		3.00E-01			
Acenaphthene		6.00E-02			
Acenaphthylene					
Anthracene		3.00E-01			
Benz (a) anthracene					
Benzo (a) pyrene	2.87E-08				
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
Dibenzofuran		4.00E-03			
Fluoranthene		4.00E-02			
Fluorene		4.00E-02			
Indeno (1, 2, 3-cd) pyrene					
PCB-1016	2.81E-08	7.00E-05		4.01E-04	
PCB-1254	1.13E-08	2.00E-05		5.65E-04	
PCB-1260	2.16E-08				
Phenanthrene	1.06E-08				
Pyrene		3.00E-02			
Cesium-137					
Neptunium-237					

Recreational Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Recreational Adult Ingestion of Quail -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					9.68E-04

----- LOCATION=SWMU 99A PATHWAY=Recreational Adult Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	2.87E-07	7.00E-02		4.10E-06	
Beryllium	3.59E-09	2.00E-03		1.80E-06	
Chromium	4.99E-07	3.00E-03		1.66E-04	
Zinc	2.46E-04	3.00E-01		8.19E-04	
Acenaphthene	1.19E-09	6.00E-02		1.99E-08	
Acenaphthylene	3.20E-10				
Anthracene	2.61E-09	3.00E-01		8.69E-09	
Benz (a) anthracene	5.52E-08				
Benzo (a) pyrene	8.33E-08				
Benzo (b) fluoranthene	1.96E-07				
Benzo (ghi) perylene	3.95E-07				
Benzo (k) fluoranthene	4.78E-07				
Chrysene	9.09E-08				
Dibenz (a, h) anthracene	2.09E-07				
Dibenzofuran	8.45E-09	4.00E-03		2.11E-06	
Fluoranthene	1.04E-08	4.00E-02		2.59E-07	
Fluorene	9.63E-10	4.00E-02		2.41E-08	
Indeno (1, 2, 3-cd) pyrene	4.24E-07				
PCB-1016	2.58E-08	7.00E-05		3.69E-04	
PCB-1254	1.30E-08	2.00E-05		6.52E-04	
PCB-1260	3.11E-07				
Phenanthrene	6.50E-09				
Pyrene	1.19E-08	3.00E-02		3.97E-07	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					2.01E-03

----- LOCATION=SWMU 99A PATHWAY=Recreational Adult Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	5.70E-08	7.00E-02		8.14E-07	
Beryllium	6.91E-10	2.00E-03		3.45E-07	
Chromium	9.71E-08	3.00E-03		3.24E-05	
Zinc	5.27E-05	3.00E-01		1.76E-04	
Acenaphthene	2.39E-10	6.00E-02		3.98E-09	
Acenaphthylene	6.58E-11				
Anthracene	5.19E-10	3.00E-01		1.73E-09	
Benz (a) anthracene	1.07E-08				
Benzo (a) pyrene	1.60E-08				

Recreational Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Recreational Adult Ingestion of Venison -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Benzo (b) fluoranthene	3.77E-08				
Benzo (ghi) perylene	7.57E-08				
Benzo (k) fluoranthene	9.16E-08				
Chrysene	1.75E-08				
Dibenz (a, h) anthracene	4.01E-08				
Dibenzofuran	1.63E-09	4.00E-03		4.08E-07	
Fluoranthene	2.03E-09	4.00E-02		5.08E-08	
Fluorene	1.92E-10	4.00E-02		4.79E-09	
Indeno (1, 2, 3-cd) pyrene	8.12E-08				
PCB-1016	4.97E-09	7.00E-05		7.10E-05	
PCB-1254	2.51E-09	2.00E-05		1.25E-04	
PCB-1260	5.95E-08				
Phenanthrene	1.28E-09				
Pyrene	2.33E-09	3.00E-02		7.76E-08	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					4.06E-04

----- LOCATION=SWMU 99A PATHWAY=Recreational Child Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	7.60E-08	7.00E-02		1.09E-06	
Beryllium	2.63E-11	2.00E-03		1.31E-08	
Chromium	3.01E-09	3.00E-03		1.00E-06	
Zinc		3.00E-01			
Acenaphthene		6.00E-02			
Acenaphthylene					
Anthracene		3.00E-01			
Benz (a) anthracene					
Benzo (a) pyrene	2.77E-08				
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
Dibenzofuran		4.00E-03			
Fluoranthene		4.00E-02			
Fluorene		4.00E-02			
Indeno (1, 2, 3-cd) pyrene					
PCB-1016	2.71E-08	7.00E-05		3.87E-04	
PCB-1254	1.09E-08	2.00E-05		5.45E-04	
PCB-1260	2.09E-08				
Phenanthrene	1.03E-08				
Pyrene		3.00E-02			
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					9.35E-04

Recreational Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Recreational Child Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	2.77E-07	7.00E-02		3.96E-06	
Beryllium	3.47E-09	2.00E-03		1.74E-06	
Chromium	4.81E-07	3.00E-03		1.60E-04	
Zinc	2.37E-04	3.00E-01		7.90E-04	
Acenaphthene	1.15E-09	6.00E-02		1.92E-08	
Acenaphthylene	3.09E-10				
Anthracene	2.52E-09	3.00E-01		8.39E-09	
Benz (a) anthracene	5.33E-08				
Benzo (a) pyrene	8.04E-08				
Benzo (b) fluoranthene	1.89E-07				
Benzo (ghi) perylene	3.81E-07				
Benzo (k) fluoranthene	4.62E-07				
Chrysene	8.77E-08				
Dibenz (a, h) anthracene	2.02E-07				
Dibenzofuran	8.16E-09	4.00E-03		2.04E-06	
Fluoranthene	1.00E-08	4.00E-02		2.50E-07	
Fluorene	9.30E-10	4.00E-02		2.32E-08	
Indeno (1, 2, 3-cd) pyrene	4.09E-07				
PCB-1016	2.49E-08	7.00E-05		3.56E-04	
PCB-1254	1.26E-08	2.00E-05		6.30E-04	
PCB-1260	3.00E-07				
Phenanthrene	6.28E-09				
Pyrene	1.15E-08	3.00E-02		3.83E-07	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					1.94E-03

----- LOCATION=SWMU 99A PATHWAY=Recreational Child Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	6.02E-08	7.00E-02		8.59E-07	
Beryllium	7.29E-10	2.00E-03		3.65E-07	
Chromium	1.03E-07	3.00E-03		3.42E-05	
Zinc	5.56E-05	3.00E-01		1.85E-04	
Acenaphthene	2.52E-10	6.00E-02		4.20E-09	
Acenaphthylene	6.94E-11				
Anthracene	5.48E-10	3.00E-01		1.83E-09	
Benz (a) anthracene	1.12E-08				
Benzo (a) pyrene	1.69E-08				
Benzo (b) fluoranthene	3.98E-08				
Benzo (ghi) perylene	8.00E-08				
Benzo (k) fluoranthene	9.68E-08				
Chrysene	1.85E-08				
Dibenz (a, h) anthracene	4.24E-08				
Dibenzofuran	1.72E-09	4.00E-03		4.31E-07	
Fluoranthene	2.15E-09	4.00E-02		5.36E-08	
Fluorene	2.02E-10	4.00E-02		5.06E-09	
Indeno (1, 2, 3-cd) pyrene	8.58E-08				
PCB-1016	5.25E-09	7.00E-05		7.50E-05	
PCB-1254	2.65E-09	2.00E-05		1.32E-04	
PCB-1260	6.28E-08				
Phenanthrene	1.36E-09				
Pyrene	2.46E-09	3.00E-02		8.20E-08	

Recreational Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Recreational Child Ingestion of Venison -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					4.29E-04

----- LOCATION=SWMU 99A PATHWAY=Recreational Teen Ingestion of Quail -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	6.55E-08	7.00E-02		9.35E-07	
Beryllium	2.26E-11	2.00E-03		1.13E-08	
Chromium	2.59E-09	3.00E-03		8.65E-07	
Zinc		3.00E-01			
Acenaphthene		6.00E-02			
Acenaphthylene					
Anthracene		3.00E-01			
Benz (a) anthracene					
Benzo (a) pyrene	2.39E-08				
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
Dibenzofuran		4.00E-03			
Fluoranthene		4.00E-02			
Fluorene		4.00E-02			
Indeno (1, 2, 3-cd) pyrene					
PCB-1016	2.33E-08	7.00E-05		3.33E-04	
PCB-1254	9.39E-09	2.00E-05		4.70E-04	
PCB-1260	1.80E-08				
Phenanthrene	8.83E-09				
Pyrene		3.00E-02			
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					8.05E-04

----- LOCATION=SWMU 99A PATHWAY=Recreational Teen Ingestion of Rabbit -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	2.32E-07	7.00E-02		3.31E-06	
Beryllium	2.91E-09	2.00E-03		1.45E-06	
Chromium	4.03E-07	3.00E-03		1.34E-04	
Zinc	1.99E-04	3.00E-01		6.62E-04	
Acenaphthene	9.67E-10	6.00E-02		1.61E-08	
Acenaphthylene	2.59E-10				
Anthracene	2.11E-09	3.00E-01		7.03E-09	

Recreational Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Recreational Teen Ingestion of Rabbit -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Benz (a) anthracene	4.47E-08				
Benzo (a) pyrene	6.74E-08				
Benzo (b) fluoranthene	1.58E-07				
Benzo (ghi) perylene	3.19E-07				
Benzo (k) fluoranthene	3.87E-07				
Chrysene	7.35E-08				
Dibenz (a, h) anthracene	1.69E-07				
Dibenzofuran	6.84E-09	4.00E-03		1.71E-06	
Fluoranthene	8.39E-09	4.00E-02		2.10E-07	
Fluorene	7.79E-10	4.00E-02		1.95E-08	
Indeno (1, 2, 3-cd) pyrene	3.43E-07				
PCB-1016	2.09E-08	7.00E-05		2.98E-04	
PCB-1254	1.06E-08	2.00E-05		5.28E-04	
PCB-1260	2.51E-07				
Phenanthrene	5.26E-09				
Pyrene	9.62E-09	3.00E-02		3.21E-07	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					1.63E-03

----- LOCATION=SWMU 99A PATHWAY=Recreational Teen Ingestion of Venison -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	9.27E-08	7.00E-02		1.32E-06	
Beryllium	1.12E-09	2.00E-03		5.62E-07	
Chromium	1.58E-07	3.00E-03		5.27E-05	
Zinc	8.58E-05	3.00E-01		2.86E-04	
Acenaphthene	3.89E-10	6.00E-02		6.48E-09	
Acenaphthylene	1.07E-10				
Anthracene	8.44E-10	3.00E-01		2.81E-09	
Benzo (a) anthracene	1.73E-08				
Benzo (a) pyrene	2.61E-08				
Benzo (b) fluoranthene	6.13E-08				
Benzo (ghi) perylene	1.23E-07				
Benzo (k) fluoranthene	1.49E-07				
Chrysene	2.85E-08				
Dibenz (a, h) anthracene	6.53E-08				
Dibenzofuran	2.66E-09	4.00E-03		6.64E-07	
Fluoranthene	3.31E-09	4.00E-02		8.27E-08	
Fluorene	3.12E-10	4.00E-02		7.80E-09	
Indeno (1, 2, 3-cd) pyrene	1.32E-07				
PCB-1016	8.09E-09	7.00E-05		1.16E-04	
PCB-1254	4.08E-09	2.00E-05		2.04E-04	
PCB-1260	9.68E-08				
Phenanthrene	2.09E-09				
Pyrene	3.79E-09	3.00E-02		1.26E-07	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					

Recreational Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY-Recreational Teen Ingestion of Venison -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Pathway Total					6.61E-04

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Recreational Adult Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	9.25E-09				
Anthracene					
Benz (a) anthracene		7.30E-01			
Benzo (a) pyrene	3.35E-08	7.30E+00		2.44E-07	
Benzo (b) fluoranthene		7.30E-01			
Benzo (ghi) perylene					
Chrysene		7.30E-03			
Di-n-butylphthalate					
Di-n-octylphthalate					
Dibenz (a, h) anthracene		7.30E+00			
Fluoranthene					
Indeno (1, 2, 3-cd) pyrene		7.30E-01			
Pyrene					
bis (2-Ethylhexyl) phthalate		1.40E-02			
Pathway Total					2.44E-07

----- LOCATION=SWMU 193A PATHWAY=Recreational Adult Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	6.54E-07				
Anthracene	5.14E-10				
Benz (a) anthracene	1.26E-08	7.30E-01		9.19E-09	
Benzo (a) pyrene	4.29E-08	7.30E+00		3.13E-07	
Benzo (b) fluoranthene	8.75E-09	7.30E-01		6.39E-09	
Benzo (ghi) perylene	9.07E-08				
Chrysene	1.19E-08	7.30E-03		8.68E-11	
Di-n-butylphthalate	9.46E-10				
Di-n-octylphthalate	2.51E-05				
Dibenz (a, h) anthracene	1.10E-07	7.30E+00		7.99E-07	
Fluoranthene	3.35E-09				
Indeno (1, 2, 3-cd) pyrene	8.54E-08	7.30E-01		6.23E-08	
Pyrene	3.62E-09				
bis (2-Ethylhexyl) phthalate	2.09E-09	1.40E-02		2.92E-11	
Pathway Total					1.19E-06

----- LOCATION=SWMU 193A PATHWAY=Recreational Adult Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	2.88E-07				
Anthracene	2.31E-10				
Benz (a) anthracene	5.49E-09	7.30E-01		4.01E-09	
Benzo (a) pyrene	1.86E-08	7.30E+00		1.36E-07	
Benzo (b) fluoranthene	3.80E-09	7.30E-01		2.78E-09	
Benzo (ghi) perylene	3.93E-08				
Chrysene	5.19E-09	7.30E-03		3.79E-11	
Di-n-butylphthalate	4.19E-10				
Di-n-octylphthalate	1.08E-05				
Dibenz (a, h) anthracene	4.74E-08	7.30E+00		3.46E-07	
Fluoranthene	1.48E-09				
Indeno (1, 2, 3-cd) pyrene	3.70E-08	7.30E-01		2.70E-08	
Pyrene	1.60E-09				
bis (2-Ethylhexyl) phthalate	9.24E-10	1.40E-02		1.29E-11	
Pathway Total					5.16E-07

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Recreational Child Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	2.44E-09				
Anthracene					
Benz (a) anthracene		7.30E-01			
Benzo (a) pyrene	8.81E-09	7.30E+00		6.43E-08	
Benzo (b) fluoranthene		7.30E-01			
Benzo (ghi) perylene					
Chrysene		7.30E-03			
Di-n-butylphthalate					
Di-n-octylphthalate					
Dibenz (a, h) anthracene		7.30E+00			
Fluoranthene					
Indeno (1, 2, 3-cd) pyrene		7.30E-01			
Pyrene					
bis(2-Ethylhexyl)phthalate		1.40E-02			
Pathway Total					6.43E-08

----- LOCATION=SWMU 193A PATHWAY=Recreational Child Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.72E-07				
Anthracene	1.35E-10				
Benz (a) anthracene	3.32E-09	7.30E-01		2.42E-09	
Benzo (a) pyrene	1.13E-08	7.30E+00		8.25E-08	
Benzo (b) fluoranthene	2.30E-09	7.30E-01		1.68E-09	
Benzo (ghi) perylene	2.39E-08				
Chrysene	3.13E-09	7.30E-03		2.29E-11	
Di-n-butylphthalate	2.49E-10				
Di-n-octylphthalate	6.60E-06				
Dibenz (a, h) anthracene	2.88E-08	7.30E+00		2.10E-07	
Fluoranthene	8.83E-10				
Indeno (1, 2, 3-cd) pyrene	2.25E-08	7.30E-01		1.64E-08	
Pyrene	9.55E-10				
bis(2-Ethylhexyl)phthalate	5.50E-10	1.40E-02		7.70E-12	
Pathway Total					3.14E-07

----- LOCATION=SWMU 193A PATHWAY=Recreational Child Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	8.29E-08				
Anthracene	6.66E-11				
Benz (a) anthracene	1.58E-09	7.30E-01		1.15E-09	
Benzo (a) pyrene	5.37E-09	7.30E+00		3.92E-08	
Benzo (b) fluoranthene	1.10E-09	7.30E-01		7.99E-10	
Benzo (ghi) perylene	1.13E-08				
Chrysene	1.49E-09	7.30E-03		1.09E-11	
Di-n-butylphthalate	1.21E-10				
Di-n-octylphthalate	3.12E-06				
Dibenz (a, h) anthracene	1.37E-08	7.30E+00		9.97E-08	
Fluoranthene	4.27E-10				
Indeno (1, 2, 3-cd) pyrene	1.07E-08	7.30E-01		7.78E-09	
Pyrene	4.62E-10				
bis(2-Ethylhexyl)phthalate	2.66E-10	1.40E-02		3.73E-12	
Pathway Total					1.49E-07

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Recreational Teen Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	4.20E-09				
Anthracene					
Benz(a)anthracene		7.30E-01			
Benzo(a)pyrene	1.52E-08	7.30E+00		1.11E-07	
Benzo(b)fluoranthene		7.30E-01			
Benzo(ghi)perylene					
Chrysene		7.30E-03			
Di-n-butylphthalate					
Di-n-octylphthalate					
Dibenz(a,h)anthracene		7.30E+00			
Fluoranthene					
Indeno(1,2,3-cd)pyrene		7.30E-01			
Pyrene					
bis(2-Ethylhexyl)phthalate		1.40E-02			
Pathway Total					1.11E-07

----- LOCATION=SWMU 193A PATHWAY=Recreational Teen Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	2.89E-07				
Anthracene	2.27E-10				
Benz(a)anthracene	5.56E-09	7.30E-01		4.06E-09	
Benzo(a)pyrene	1.89E-08	7.30E+00		1.38E-07	
Benzo(b)fluoranthene	3.86E-09	7.30E-01		2.82E-09	
Benzo(ghi)perylene	4.00E-08				
Chrysene	5.25E-09	7.30E-03		3.83E-11	
Di-n-butylphthalate	4.18E-10				
Di-n-octylphthalate	1.11E-05				
Dibenz(a,h)anthracene	4.83E-08	7.30E+00		3.53E-07	
Fluoranthene	1.48E-09				
Indeno(1,2,3-cd)pyrene	3.77E-08	7.30E-01		2.75E-08	
Pyrene	1.60E-09				
bis(2-Ethylhexyl)phthalate	9.22E-10	1.40E-02		1.29E-11	
Pathway Total					5.25E-07

----- LOCATION=SWMU 193A PATHWAY=Recreational Teen Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	2.56E-07				
Anthracene	2.05E-10				
Benz(a)anthracene	4.88E-09	7.30E-01		3.56E-09	
Benzo(a)pyrene	1.66E-08	7.30E+00		1.21E-07	
Benzo(b)fluoranthene	3.38E-09	7.30E-01		2.46E-09	
Benzo(ghi)perylene	3.49E-08				
Chrysene	4.60E-09	7.30E-03		3.36E-11	
Di-n-butylphthalate	3.72E-10				
Di-n-octylphthalate	9.61E-06				
Dibenz(a,h)anthracene	4.21E-08	7.30E+00		3.07E-07	
Fluoranthene	1.32E-09				
Indeno(1,2,3-cd)pyrene	3.29E-08	7.30E-01		2.40E-08	
Pyrene	1.42E-09				
bis(2-Ethylhexyl)phthalate	8.21E-10	1.40E-02		1.15E-11	
Pathway Total					4.58E-07

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Recreational Adult Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	3.61E-11	4.30E+00		1.55E-10	
Chromium	1.66E-08				
Vanadium	3.07E-09				
Pathway Total					1.55E-10

----- LOCATION=SWMU 193B PATHWAY=Recreational Adult Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	4.77E-09	4.30E+00		2.05E-08	
Chromium	2.65E-06				
Vanadium	4.86E-07				
Pathway Total					2.05E-08

----- LOCATION=SWMU 193B PATHWAY=Recreational Adult Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	9.16E-10	4.30E+00		3.94E-09	
Chromium	5.16E-07				
Vanadium	9.33E-08				
Pathway Total					3.94E-09

----- LOCATION=SWMU 193B PATHWAY=Recreational Child Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	9.50E-12	4.30E+00		4.09E-11	
Chromium	4.36E-09				
Vanadium	8.10E-10				
Pathway Total					4.09E-11

----- LOCATION=SWMU 193B PATHWAY=Recreational Child Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	1.25E-09	4.30E+00		5.40E-09	
Chromium	6.97E-07				
Vanadium	1.28E-07				
Pathway Total					5.40E-09

----- LOCATION=SWMU 193B PATHWAY=Recreational Child Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	2.64E-10	4.30E+00		1.13E-09	

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Recreational Child Ingestion of Venison -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.49E-07				
Vanadium	2.69E-08				
Pathway Total					1.13E-09

----- LOCATION=SWMU 193B PATHWAY=Recreational Teen Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	1.64E-11	4.30E+00		7.04E-11	
Chromium	7.51E-09				
Vanadium	1.39E-09				
Pathway Total					7.04E-11

----- LOCATION=SWMU 193B PATHWAY=Recreational Teen Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	2.10E-09	4.30E+00		9.04E-09	
Chromium	1.17E-06				
Vanadium	2.15E-07				
Pathway Total					9.04E-09

----- LOCATION=SWMU 193B PATHWAY=Recreational Teen Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	8.13E-10	4.30E+00		3.50E-09	
Chromium	4.58E-07				
Vanadium	8.28E-08				
Pathway Total					3.50E-09

----- LOCATION=SWMU 193C PATHWAY=Recreational Adult Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	6.06E-09				
Lead	1.38E-09				
Zinc					
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Recreational Adult Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	2.92E-07				

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Recreational Adult Ingestion of Rabbit -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Lead	6.77E-08				
Zinc	9.13E-05				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Recreational Adult Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	6.43E-07				
Lead	1.51E-07				
Zinc	2.21E-04				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Recreational Child Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.60E-09				
Lead	3.63E-10				
Zinc					
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Recreational Child Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	7.70E-08				
Lead	1.78E-08				
Zinc	2.40E-05				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Recreational Child Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.85E-07				
Lead	4.36E-08				
Zinc	6.37E-05				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Recreational Teen Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	2.75E-09				

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Recreational Teen Ingestion of Quail -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Lead	6.24E-10				
Zinc					
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Recreational Teen Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.29E-07				
Lead	2.99E-08				
Zinc	4.03E-05				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Recreational Teen Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	5.71E-07				
Lead	1.34E-07				
Zinc	1.96E-04				
Pathway Total					

----- LOCATION=SWMU 99A PATHWAY=Recreational Adult Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	2.48E-08				
Beryllium	8.55E-12	4.30E+00		3.68E-11	
Chromium	9.81E-10				
Zinc					
Acenaphthene					
Acenaphthylene					
Anthracene					
Benz (a) anthracene		7.30E-01			
Benzo (a) pyrene	9.03E-09	7.30E+00		6.59E-08	
Benzo (b) fluoranthene		7.30E-01			
Benzo (ghi) perylene					
Benzo (k) fluoranthene		7.30E-02			
Chrysene		7.30E-03			
Dibenz (a,h) anthracene		7.30E+00			
Dibenzofuran					
Fluoranthene					
Fluorene					
Indeno (1,2,3-cd) pyrene		7.30E-01			
PCB-1016	8.82E-09	2.00E+00		1.76E-08	
PCB-1254	3.55E-09	2.00E+00		7.10E-09	
PCB-1260	6.80E-09	2.00E+00		1.36E-08	
Phenanthrene	3.34E-09				
Pyrene					
Cesium-137		3.16E-11			
Neptunium-237	3.70E-01	3.00E-10		1.11E-10	

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Recreational Adult Ingestion of Quail -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Technetium-99			1.40E-12		
Thorium-234	5.51E-02		1.93E-11	1.06E-12	
Uranium-234	3.27E+02		4.44E-11	1.45E-08	
Uranium-238	1.07E+03		6.20E-11	6.66E-08	
Pathway Total					1.85E-07

----- LOCATION=SWMU 99A PATHWAY=Recreational Adult Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	9.01E-08				
Beryllium	1.13E-09	4.30E+00		4.86E-09	
Chromium	1.57E-07				
Zinc	7.72E-05				
Acenaphthene	3.75E-10				
Acenaphthylene	1.01E-10				
Anthracene	8.19E-10				
Benz (a) anthracene	1.73E-08	7.30E-01		1.27E-08	
Benzo (a) pyrene	2.62E-08	7.30E+00		1.91E-07	
Benzo (b) fluoranthene	6.16E-08	7.30E-01		4.49E-08	
Benzo (ghi) perylene	1.24E-07				
Benzo (k) fluoranthene	1.50E-07	7.30E-02		1.10E-08	
Chrysene	2.86E-08	7.30E-03		2.08E-10	
Dibenz (a, h) anthracene	6.58E-08	7.30E+00		4.80E-07	
Dibenzofuran	2.66E-09				
Fluoranthene	3.26E-09				
Fluorene	3.03E-10				
Indeno (1, 2, 3-cd) pyrene	1.33E-07	7.30E-01		9.72E-08	
PCB-1016	8.11E-09	2.00E+00		1.62E-08	
PCB-1254	4.10E-09	2.00E+00		8.20E-09	
PCB-1260	9.76E-08	2.00E+00		1.95E-07	
Phenanthrene	2.04E-09				
Pyrene	3.74E-09				
Cesium-137	2.60E+02	3.16E-11		8.23E-09	
Neptunium-237	4.66E+01	3.00E-10		1.40E-08	
Technetium-99	3.30E+04	1.40E-12		4.62E-08	
Thorium-234	6.55E+00	1.93E-11		1.27E-10	
Uranium-234	1.55E+01	4.44E-11		6.89E-10	
Uranium-238	7.17E+01	6.20E-11		4.45E-09	
Pathway Total					1.14E-06

----- LOCATION=SWMU 99A PATHWAY=Recreational Adult Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	1.79E-08				
Beryllium	2.17E-10	4.30E+00		9.33E-10	
Chromium	3.05E-08				
Zinc	1.66E-05				
Acenaphthene	7.50E-11				
Acenaphthylene	2.07E-11				
Anthracene	1.63E-10				
Benz (a) anthracene	3.35E-09	7.30E-01		2.44E-09	
Benzo (a) pyrene	5.03E-09	7.30E+00		3.67E-08	

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Recreational Adult Ingestion of Venison -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Benzo (b) fluoranthene	1.18E-08	7.30E-01		8.64E-09	
Benzo (ghi) perylene	2.38E-08				
Benzo (k) fluoranthene	2.88E-08	7.30E-02		2.10E-09	
Chrysene	5.51E-09	7.30E-03		4.02E-11	
Dibenz (a, h) anthracene	1.26E-08	7.30E+00		9.20E-08	
Dibenzofuran	5.13E-10				
Fluoranthene	6.38E-10				
Fluorene	6.02E-11				
Indeno (1, 2, 3-cd) pyrene	2.55E-08	7.30E-01		1.86E-08	
PCB-1016	1.56E-09	2.00E+00		3.12E-09	
PCB-1254	7.89E-10	2.00E+00		1.58E-09	
PCB-1260	1.87E-08	2.00E+00		3.74E-08	
Phenanthrene	4.04E-10				
Pyrene	7.32E-10				
Cesium-137	5.30E+01	3.16E-11		1.67E-09	
Neptunium-237	9.18E+00	3.00E-10		2.76E-09	
Technetium-99	7.32E+03	1.40E-12		1.02E-08	
Thorium-234	1.26E+00	1.93E-11		2.43E-11	
Uranium-234	3.00E+00	4.44E-11		1.33E-10	
Uranium-238	1.40E+01	6.20E-11		8.65E-10	
Pathway Total					2.19E-07

----- LOCATION=SWMU 99A PATHWAY=Recreational Child Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	6.52E-09				
Beryllium	2.25E-12	4.30E+00		9.69E-12	
Chromium	2.58E-10				
Zinc					
Acenaphthene					
Acenaphthylene					
Anthracene					
Benz (a) anthracene		7.30E-01			
Benzo (a) pyrene	2.38E-09	7.30E+00		1.74E-08	
Benzo (b) fluoranthene		7.30E-01			
Benzo (ghi) perylene					
Benzo (k) fluoranthene		7.30E-02			
Chrysene		7.30E-03			
Dibenz (a, h) anthracene		7.30E+00			
Dibenzofuran					
Fluoranthene					
Fluorene					
Indeno (1, 2, 3-cd) pyrene		7.30E-01			
PCB-1016	2.32E-09	2.00E+00		4.65E-09	
PCB-1254	9.35E-10	2.00E+00		1.87E-09	
PCB-1260	1.79E-09	2.00E+00		3.58E-09	
Phenanthrene	8.79E-10				
Pyrene					
Cesium-137		3.16E-11			
Neptunium-237	2.02E-02	3.00E-10		6.06E-12	
Technetium-99		1.40E-12			
Thorium-234	3.00E-03	1.93E-11		5.80E-14	
Uranium-234	1.78E+01	4.44E-11		7.92E-10	
Uranium-238	5.86E+01	6.20E-11		3.63E-09	
Pathway Total					3.19E-08

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Recreational Child Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	2.37E-08				
Beryllium	2.97E-10	4.30E+00		1.28E-09	
Chromium	4.13E-08				
Zinc	2.03E-05				
Acenaphthene	9.89E-11				
Acenaphthylene	2.65E-11				
Anthracene	2.16E-10				
Benz (a) anthracene	4.57E-09	7.30E-01		3.33E-09	
Benzo (a) pyrene	6.89E-09	7.30E+00		5.03E-08	
Benzo (b) fluoranthene	1.62E-08	7.30E-01		1.18E-08	
Benzo (ghi) perylene	3.27E-08				
Benzo (k) fluoranthene	3.96E-08	7.30E-02		2.89E-09	
Chrysene	7.52E-09	7.30E-03		5.49E-11	
Dibenz (a, h) anthracene	1.73E-08	7.30E+00		1.26E-07	
Dibenzofuran	7.00E-10				
Fluoranthene	8.59E-10				
Fluorene	7.97E-11				
Indeno (1, 2, 3-cd) pyrene	3.51E-08	7.30E-01		2.56E-08	
PCB-1016	2.14E-09	2.00E+00		4.27E-09	
PCB-1254	1.08E-09	2.00E+00		2.16E-09	
PCB-1260	2.57E-08	2.00E+00		5.14E-08	
Phenanthrene	5.38E-10				
Pyrene	9.84E-10				
Cesium-137	1.42E+01	3.16E-11		4.49E-10	
Neptunium-237	2.54E+00	3.00E-10		7.63E-10	
Technetium-99	1.80E+03	1.40E-12		2.52E-09	
Thorium-234	3.58E-01	1.93E-11		6.90E-12	
Uranium-234	8.46E-01	4.44E-11		3.76E-11	
Uranium-238	3.91E+00	6.20E-11		2.43E-10	
Pathway Total					2.84E-07

----- LOCATION=SWMU 99A PATHWAY=Recreational Child Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	5.16E-09				
Beryllium	6.25E-11	4.30E+00		2.69E-10	
Chromium	8.79E-09				
Zinc	4.77E-06				
Acenaphthene	2.16E-11				
Acenaphthylene	5.95E-12				
Anthracene	4.70E-11				
Benz (a) anthracene	9.64E-10	7.30E-01		7.04E-10	
Benzo (a) pyrene	1.45E-09	7.30E+00		1.06E-08	
Benzo (b) fluoranthene	3.41E-09	7.30E-01		2.49E-09	
Benzo (ghi) perylene	6.85E-09				
Benzo (k) fluoranthene	8.29E-09	7.30E-02		6.05E-10	
Chrysene	1.59E-09	7.30E-03		1.16E-11	
Dibenz (a, h) anthracene	3.63E-09	7.30E+00		2.65E-08	
Dibenzofuran	1.48E-10				
Fluoranthene	1.84E-10				
Fluorene	1.74E-11				
Indeno (1, 2, 3-cd) pyrene	7.35E-09	7.30E-01		5.37E-09	
PCB-1016	4.50E-10	2.00E+00		8.99E-10	
PCB-1254	2.27E-10	2.00E+00		4.54E-10	
PCB-1260	5.38E-09	2.00E+00		1.08E-08	
Phenanthrene	1.16E-10				
Pyrene	2.11E-10				

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Recreational Child Ingestion of Venison -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Cesium-137	3.16E+00	3.16E-11		9.99E-11	
Neptunium-237	5.48E-01	3.00E-10		1.64E-10	
Technetium-99	4.37E+02	1.40E-12		6.11E-10	
Thorium-234	7.52E-02	1.93E-11		1.45E-12	
Uranium-234	1.79E-01	4.44E-11		7.94E-12	
Uranium-238	8.33E-01	6.20E-11		5.16E-11	
Pathway Total					5.96E-08

----- LOCATION=SWMU 99A PATHWAY=Recreational Teen Ingestion of Quail -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	1.12E-08				
Beryllium	3.88E-12	4.30E+00		1.67E-11	
Chromium	4.45E-10				
Zinc					
Acenaphthene					
Acenaphthylene					
Anthracene					
Benzo (a) anthracene		7.30E-01			
Benzo (a) pyrene	4.09E-09	7.30E+00		2.99E-08	
Benzo (b) fluoranthene		7.30E-01			
Benzo (ghi) perylene					
Benzo (k) fluoranthene		7.30E-02			
Chrysene		7.30E-03			
Dibenz (a, h) anthracene		7.30E+00			
Dibenzofuran					
Fluoranthene					
Fluorene					
Indeno (1,2,3-cd) pyrene		7.30E-01			
PCB-1016	4.00E-09	2.00E+00		8.00E-09	
PCB-1254	1.61E-09	2.00E+00		3.22E-09	
PCB-1260	3.08E-09	2.00E+00		6.16E-09	
Phenanthrene	1.51E-09				
Pyrene					
Cesium-137		3.16E-11			
Neptunium-237	1.03E-01	3.00E-10		3.09E-11	
Technetium-99		1.40E-12			
Thorium-234	1.53E-02	1.93E-11		2.96E-13	
Uranium-234	9.11E+01	4.44E-11		4.05E-09	
Uranium-238	2.99E+02	6.20E-11		1.85E-08	
Pathway Total					6.99E-08

----- LOCATION=SWMU 99A PATHWAY=Recreational Teen Ingestion of Rabbit -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	3.98E-08				
Beryllium	4.98E-10	4.30E+00		2.14E-09	
Chromium	6.92E-08				
Zinc	3.41E-05				
Acenaphthene	1.66E-10				
Acenaphthylene	4.44E-11				
Anthracene	3.61E-10				

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Recreational Teen Ingestion of Rabbit -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Benz(a)anthracene	7.66E-09	7.30E-01		5.59E-09	
Benzo(a)pyrene	1.15E-08	7.30E+00		8.43E-08	
Benzo(b)fluoranthene	2.72E-08	7.30E-01		1.98E-08	
Benzo(ghi)perylene	5.48E-08				
Benzo(k)fluoranthene	6.63E-08	7.30E-02		4.84E-09	
Chrysene	1.26E-08	7.30E-03		9.20E-11	
Dibenz(a,h)anthracene	2.90E-08	7.30E+00		2.12E-07	
Dibenzofuran	1.17E-09				
Fluoranthene	1.44E-09				
Fluorene	1.34E-10				
Indeno(1,2,3-cd)pyrene	5.88E-08	7.30E-01		4.29E-08	
PCB-1016	3.58E-09	2.00E+00		7.16E-09	
PCB-1254	1.81E-09	2.00E+00		3.62E-09	
PCB-1260	4.31E-08	2.00E+00		8.61E-08	
Phenanthrene	9.02E-10				
Pyrene	1.65E-09				
Cesium-137	7.06E+01	3.16E-11		2.23E-09	
Neptunium-237	1.26E+01	3.00E-10		3.79E-09	
Technetium-99	8.95E+03	1.40E-12		1.25E-08	
Thorium-234	1.78E+00	1.93E-11		3.43E-11	
Uranium-234	4.20E+00	4.44E-11		1.87E-10	
Uranium-238	1.94E+01	6.20E-11		1.21E-09	
Pathway Total					4.89E-07

----- LOCATION=SWMU 99A PATHWAY=Recreational Teen Ingestion of Venison -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	1.59E-08				
Beryllium	1.93E-10	4.30E+00		8.29E-10	
Chromium	2.71E-08				
Zinc	1.47E-05				
Acenaphthene	6.66E-11				
Acenaphthylene	1.84E-11				
Anthracene	1.45E-10				
Benz(a)anthracene	2.97E-09	7.30E-01		2.17E-09	
Benzo(a)pyrene	4.47E-09	7.30E+00		3.26E-08	
Benzo(b)fluoranthene	1.05E-08	7.30E-01		7.67E-09	
Benzo(ghi)perylene	2.11E-08				
Benzo(k)fluoranthene	2.56E-08	7.30E-02		1.87E-09	
Chrysene	4.89E-09	7.30E-03		3.57E-11	
Dibenz(a,h)anthracene	1.12E-08	7.30E+00		8.17E-08	
Dibenzofuran	4.55E-10				
Fluoranthene	5.67E-10				
Fluorene	5.35E-11				
Indeno(1,2,3-cd)pyrene	2.27E-08	7.30E-01		1.66E-08	
PCB-1016	1.39E-09	2.00E+00		2.77E-09	
PCB-1254	7.00E-10	2.00E+00		1.40E-09	
PCB-1260	1.66E-08	2.00E+00		3.32E-08	
Phenanthrene	3.59E-10				
Pyrene	6.50E-10				
Cesium-137	2.89E+01	3.16E-11		9.14E-10	
Neptunium-237	5.01E+00	3.00E-10		1.50E-09	
Technetium-99	3.99E+03	1.40E-12		5.59E-09	
Thorium-234	6.87E-01	1.93E-11		1.33E-11	
Uranium-234	1.64E+00	4.44E-11		7.26E-11	
Uranium-238	7.61E+00	6.20E-11		4.72E-10	

Recreational Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Recreational Teen Ingestion of Venison -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Pathway Total					1.89E-07

Residential Hazard Index Estimates

----- LOCATION=AOC 204 PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	2.21E-03	1.00E-01		2.21E-02	
1,1-Dichloroethene	1.77E-05	9.00E-03		1.97E-03	
PCB-1254	4.30E-04	1.80E-05		2.39E+01	
PCB-1260	1.32E-03				
Polychlorinated biphenyl	2.93E-03				
Tetrachloroethene	1.18E-02	1.00E-02		1.18E+00	
Trichloroethene	4.39E-04	9.00E-04		4.87E-01	
Vinyl Chloride	3.63E-08				
cis-1,2-Dichloroethene	2.98E-06	1.00E-02		2.98E-04	
Pathway Total					2.56E+01

----- LOCATION=AOC 204 PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	1.37E-01	1.00E-01		1.37E+00	
1,1-Dichloroethene	1.10E-03	9.00E-03		1.22E-01	
PCB-1254	6.85E-04	2.00E-05		3.42E+01	
PCB-1260	6.85E-04				
Polychlorinated biphenyl	4.66E-03				
Tetrachloroethene	1.76E-02	1.00E-02		1.76E+00	
Trichloroethene	1.51E-02	6.00E-03		2.52E+00	
Vinyl Chloride	2.74E-06				
cis-1,2-Dichloroethene	1.64E-04	1.00E-02		1.64E-02	
Pathway Total					4.00E+01

----- LOCATION=AOC 204 PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	2.07E-01	1.00E-01		2.07E+00	
1,1-Dichloroethene	1.65E-03	9.00E-03		1.84E-01	
PCB-1254	3.56E-04	2.00E-05		1.78E+01	
PCB-1260	3.54E-04				
Polychlorinated biphenyl	2.42E-03				
Tetrachloroethene	1.51E-02	1.00E-02		1.51E+00	
Trichloroethene	1.45E-02	6.00E-03		2.42E+00	
Vinyl Chloride	6.05E-06				
cis-1,2-Dichloroethene	2.28E-04	1.00E-02		2.28E-02	
Pathway Total					2.40E+01

----- LOCATION=AOC 204 PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	4.06E-01		1.43E-01	2.84E+00	
1,1-Dichloroethene	3.25E-03		9.00E-03	3.61E-01	
PCB-1254			2.00E-05		
PCB-1260					
Polychlorinated biphenyl					
Tetrachloroethene	5.21E-02		1.71E-01	3.04E-01	
Trichloroethene	4.48E-02		6.00E-03	7.47E+00	

Residential Hazard Index Estimates

----- LOCATION=AOC 204 PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Vinyl Chloride	8.12E-06				
cis-1,2-Dichloroethene	4.87E-04		1.00E-02	4.87E-02	
Pathway Total					1.10E+01

----- LOCATION=AOC 204 PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	3.74E-02		1.43E-01	2.62E-01	
1,1-Dichloroethene	2.99E-04		9.00E-03	3.33E-02	
PCB-1254			2.00E-05		
PCB-1260					
Polychlorinated biphenyl					
Tetrachloroethene	4.80E-03		1.71E-01	2.80E-02	
Trichloroethene	4.13E-03		6.00E-03	6.88E-01	
Vinyl Chloride	7.48E-07				
cis-1,2-Dichloroethene	4.49E-05		1.00E-02	4.49E-03	
Pathway Total					1.02E+00

----- LOCATION=AOC 204 PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	4.24E-03	1.00E-01		4.24E-02	
1,1-Dichloroethene	3.39E-05	9.00E-03		3.77E-03	
PCB-1254	8.24E-04	1.80E-05		4.58E+01	
PCB-1260	2.54E-03				
Polychlorinated biphenyl	5.60E-03				
Tetrachloroethene	2.26E-02	1.00E-02		2.26E+00	
Trichloroethene	8.40E-04	9.00E-04		9.33E-01	
Vinyl Chloride	6.95E-08				
cis-1,2-Dichloroethene	5.71E-06	1.00E-02		5.71E-04	
Pathway Total					4.90E+01

----- LOCATION=AOC 204 PATHWAY=Residential Child Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	3.31E-01	1.00E-01		3.31E+00	
1,1-Dichloroethene	2.65E-03	9.00E-03		2.94E-01	
PCB-1254	1.65E-03	2.00E-05		8.27E+01	
PCB-1260	1.65E-03				
Polychlorinated biphenyl	1.12E-02				
Tetrachloroethene	4.24E-02	1.00E-02		4.24E+00	
Trichloroethene	3.65E-02	6.00E-03		6.08E+00	
Vinyl Chloride	6.61E-06				
cis-1,2-Dichloroethene	3.97E-04	1.00E-02		3.97E-02	
Pathway Total					9.66E+01

Residential Hazard Index Estimates

----- LOCATION=AOC 204 PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	6.50E-01	1.00E-01		6.50E+00	
1,1-Dichloroethene	5.20E-03	9.00E-03		5.78E-01	
PCB-1254	1.12E-03	2.00E-05		5.60E+01	
PCB-1260	1.11E-03				
Polychlorinated biphenyl	7.62E-03				
Tetrachloroethene	4.74E-02	1.00E-02		4.74E+00	
Trichloroethene	4.57E-02	6.00E-03		7.62E+00	
Vinyl Chloride	1.90E-05				
cis-1,2-Dichloroethene	7.16E-04	1.00E-02		7.16E-02	
Pathway Total					7.55E+01

----- LOCATION=AOC 204 PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	1.96E+00		1.43E-01	1.37E+01	
1,1-Dichloroethene	1.57E-02		9.00E-03	1.74E+00	
PCB-1254			2.00E-05		
PCB-1260					
Polychlorinated biphenyl					
Tetrachloroethene	2.51E-01		1.71E-01	1.47E+00	
Trichloroethene	2.16E-01		6.00E-03	3.60E+01	
Vinyl Chloride	3.92E-05				
cis-1,2-Dichloroethene	2.35E-03		1.00E-02	2.35E-01	
Pathway Total					5.32E+01

----- LOCATION=AOC 204 PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethane	1.81E-01		1.43E-01	1.26E+00	
1,1-Dichloroethene	1.44E-03		9.00E-03	1.61E-01	
PCB-1254			2.00E-05		
PCB-1260					
Polychlorinated biphenyl					
Tetrachloroethene	2.32E-02		1.71E-01	1.35E-01	
Trichloroethene	1.99E-02		6.00E-03	3.32E+00	
Vinyl Chloride	3.61E-06				
cis-1,2-Dichloroethene	2.17E-04		1.00E-02	2.17E-02	
Pathway Total					4.90E+00

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron	6.57E-03	4.50E-02		1.46E-01	
Tetraoxo-sulfate (1-)					
Trichloroethene	2.96E-06	9.00E-04		3.29E-03	
cis-1,2-Dichloroethene	8.45E-05	1.00E-02		8.45E-03	
Technetium-99					
Uranium-238					
Pathway Total					1.58E-01

Residential Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia	2.24E-05				
Fluoride	2.09E-05	5.82E-02		3.59E-04	
Iron	1.50E-03	4.50E-02		3.34E-02	
Silica					
Tetraoxo-sulfate(1-)					
Zinc	4.91E-06	6.00E-02		8.18E-05	
1,1-Dichloroethene	8.85E-08	9.00E-03		9.83E-06	
Pentachlorophenol	2.74E-04	3.00E-02		9.12E-03	
Trichloroethene	1.34E-04	9.00E-04		1.49E-01	
bis(2-Ethylhexyl)phthalate	1.50E-05	3.80E-03		3.95E-03	
cis-1,2-Dichloroethene	1.44E-06	1.00E-02		1.44E-04	
Technetium-99					
Pathway Total					1.96E-01

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	2.93E-05	6.00E-05		4.89E-01	
Anthracene	5.56E-07	2.28E-01		2.44E-06	
Benz (a) anthracene	8.63E-07				
Benzo (a) pyrene	1.20E-06				
Benzo (b) fluoranthene	2.45E-07				
Benzo (ghi) perylene	8.15E-07				
Chrysene	8.15E-07				
Di-n-butylphthalate	3.69E-07	1.00E-01		3.69E-06	
Di-n-octylphthalate	5.75E-07	1.80E-02		3.20E-05	
Dibenz (a, h) anthracene	6.23E-07				
Fluoranthene	1.31E-06	1.24E-02		1.06E-04	
Indeno (1, 2, 3-cd) pyrene	7.67E-07				
Pyrene	1.41E-06	9.30E-03		1.52E-04	
bis(2-Ethylhexyl)phthalate	8.15E-07	3.80E-03		2.14E-04	
Pathway Total					4.90E-01

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron	3.62E+00	3.00E-01		1.21E+01	
Tetraoxo-sulfate(1-)	1.13E+00				
Trichloroethene	1.02E-04	6.00E-03		1.70E-02	
cis-1,2-Dichloroethene	4.66E-03	1.00E-02		4.66E-01	
Technetium-99					
Uranium-238					
Pathway Total					1.26E+01

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia	8.22E-03				
Fluoride	1.15E-02	6.00E-02		1.92E-01	

Residential Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of RGA Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron	8.28E-01	3.00E-01		2.76E+00	
Silica	5.21E-01				
Tetraoxo-sulfate(1-)	2.79E+00				
Zinc	2.70E-03	3.00E-01		9.01E-03	
1,1-Dichloroethene	5.48E-06	9.00E-03		6.09E-04	
Pentachlorophenol	2.32E-04	3.00E-02		7.73E-03	
Trichloroethene	4.63E-03	6.00E-03		7.72E-01	
bis(2-Ethylhexyl)phthalate	3.54E-04	2.00E-02		1.77E-02	
cis-1,2-Dichloroethene	7.96E-05	1.00E-02		7.96E-03	
Technetium-99					
Pathway Total					3.77E+00

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.68E-05	3.00E-03		5.59E-03	
Anthracene	1.59E-07	3.00E-01		5.30E-07	
Benz(a)anthracene	2.47E-07				
Benzo(a)pyrene	3.42E-07				
Benzo(b)fluoranthene	6.99E-08				
Benzo(ghi)perylene	2.33E-07				
Chrysene	2.33E-07				
Di-n-butylphthalate	1.05E-07	1.00E-01		1.05E-06	
Di-n-octylphthalate	1.64E-07	2.00E-02		8.22E-06	
Dibenz(a,h)anthracene	1.78E-07				
Fluoranthene	3.74E-07	4.00E-02		9.35E-06	
Indeno(1,2,3-cd)pyrene	2.19E-07				
Pyrene	4.04E-07	3.00E-02		1.35E-05	
bis(2-Ethylhexyl)phthalate	2.33E-07	2.00E-02		1.16E-05	
Pathway Total					5.63E-03

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of Vegetables from McNairy Groun -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron	1.87E+00	3.00E-01		6.24E+00	
Tetraoxo-sulfate(1-)					
Trichloroethene	9.81E-05	6.00E-03		1.63E-02	
cis-1,2-Dichloroethene	6.45E-03	1.00E-02		6.45E-01	
Technetium-99					
Uranium-238					
Pathway Total					6.90E+00

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwat -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia Fluoride	9.45E-02	6.00E-02			
Iron	4.28E-01	3.00E-01		1.43E+00	

Residential Hazard Index Estimates

----- LOCATION-SWMU 193A PATHWAY-Residential Adult Ingestion of Vegetables from RGA Groundwat -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Silica					
Tetraoxo-sulfate(1-)					
Zinc	2.41E-03	3.00E-01		8.05E-03	
1,1-Dichloroethene	8.27E-06	9.00E-03		9.18E-04	
Pentachlorophenol	1.21E-04	3.00E-02		4.02E-03	
Trichloroethene	4.45E-03	6.00E-03		7.42E-01	
bis(2-Ethylhexyl)phthalate	1.88E-04	2.00E-02		9.40E-03	
cis-1,2-Dichloroethene	1.10E-04	1.00E-02		1.10E-02	
Technetium-99					
Pathway Total					2.20E+00

----- LOCATION-SWMU 193A PATHWAY-Residential Adult Ingestion of Vegetables from Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	3.48E-03	3.00E-03		1.16E+00	
Anthracene	3.57E-05	3.00E-01		1.19E-04	
Benz(a)anthracene	5.19E-05				
Benzo(a)pyrene	7.17E-05				
Benzo(b)fluoranthene	1.46E-05				
Benzo(ghi)perylene	4.85E-05				
Chrysene	4.90E-05				
Di-n-butylphthalate	2.28E-05	1.00E-01		2.28E-04	
Di-n-octylphthalate	3.41E-05	2.00E-02		1.71E-03	
Dibenz(a,h)anthracene	3.71E-05				
Fluoranthene	8.09E-05	4.00E-02		2.02E-03	
Indeno(1,2,3-cd)pyrene	4.57E-05				
Pyrene	8.74E-05	3.00E-02		2.91E-03	
bis(2-Ethylhexyl)phthalate	5.04E-05	2.00E-02		2.52E-03	
Pathway Total					1.17E+00

----- LOCATION-SWMU 193A PATHWAY-Residential Adult Inhalation Household Use of McNairy Ground -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron					
Tetraoxo-sulfate(1-)					
Trichloroethene	3.02E-04		6.00E-03	5.04E-02	
cis-1,2-Dichloroethene	1.38E-02		1.00E-02	1.38E+00	
Technetium-99					
Uranium-238					
Pathway Total					1.43E+00

----- LOCATION-SWMU 193A PATHWAY-Residential Adult Inhalation Household Use of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia			2.86E-02		
Fluoride					
Iron					
Silica					

Residential Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Tetraoxo-sulfate (1-) Zinc					
1,1-Dichloroethene	1.62E-05		9.00E-03	1.81E-03	
Pentachlorophenol			3.00E-02		
Trichloroethene	1.37E-02		6.00E-03	2.29E+00	
bis (2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	2.36E-04		1.00E-02	2.36E-02	
Technetium-99					
Pathway Total					2.31E+00

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation While Showering of McNairy Grou -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron					
Tetraoxo-sulfate (1-)					
Trichloroethene	2.79E-05		6.00E-03	4.64E-03	
cis-1,2-Dichloroethene	1.27E-03		1.00E-02	1.27E-01	
Technetium-99					
Uranium-238					
Pathway Total					1.32E-01

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia			2.86E-02		
Fluoride					
Iron					
Silica					
Tetraoxo-sulfate (1-)					
Zinc					
1,1-Dichloroethene	1.50E-06		9.00E-03	1.66E-04	
Pentachlorophenol			3.00E-02		
Trichloroethene	1.26E-03		6.00E-03	2.11E-01	
bis (2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	2.17E-05		1.00E-02	2.17E-03	
Technetium-99					
Pathway Total					2.13E-01

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	3.66E-10		1.00E-04	3.66E-06	
Anthracene	1.35E-07		1.05E+00	1.28E-07	
Benz (a) anthracene	1.73E-08				
Benzo(a)pyrene	9.24E-09				
Benzo(b)fluoranthene	9.97E-09				
Benzo(ghi)perylene	5.08E-12				
Chrysene	5.66E-08				

Residential Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation of Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Di-n-butylphthalate	8.63E-09		3.50E-01	2.47E-08	
Di-n-octylphthalate	1.82E-09		7.00E-02	2.60E-08	
Dibenz (a, h) anthracene	1.13E-09				
Fluoranthene	8.09E-08		1.40E-01	5.78E-07	
Indeno(1,2,3-cd)pyrene	2.54E-09				
Pyrene	7.03E-08		1.05E-01	6.70E-07	
bis(2-Ethylhexyl)phthalate	7.17E-10		7.00E-02	1.02E-08	
Pathway Total					5.09E-06

----- LOCATION=SWMU 193A PATHWAY=Residential Child Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron	1.26E-02	4.50E-02		2.80E-01	
Tetraoxo-sulfate(1-)					
Trichloroethene	5.67E-06	9.00E-04		6.30E-03	
cis-1,2-Dichloroethene	1.62E-04	1.00E-02		1.62E-02	
Technetium-99					
Uranium-238					
Pathway Total					3.02E-01

----- LOCATION=SWMU 193A PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia	4.28E-05				
Fluoride	4.00E-05	5.82E-02		6.87E-04	
Iron	2.88E-03	4.50E-02		6.40E-02	
Silica					
Tetraoxo-sulfate(1-)					
Zinc	9.40E-06	6.00E-02		1.57E-04	
1,1-Dichloroethene	1.70E-07	9.00E-03		1.88E-05	
Pentachlorophenol	5.24E-04	3.00E-02		1.75E-02	
Trichloroethene	2.57E-04	9.00E-04		2.86E-01	
bis(2-Ethylhexyl)phthalate	2.88E-05	3.80E-03		7.57E-03	
cis-1,2-Dichloroethene	2.77E-06	1.00E-02		2.77E-04	
Technetium-99					
Pathway Total					3.76E-01

----- LOCATION=SWMU 193A PATHWAY=Residential Child Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.51E-04	6.00E-05		2.52E+00	
Anthracene	2.86E-06	2.28E-01		1.25E-05	
Benz (a) anthracene	4.44E-06				
Benzo (a) pyrene	6.17E-06				
Benzo (b) fluoranthene	1.26E-06				
Benzo (ghi) perylene	4.19E-06				
Chrysene	4.19E-06				
Di-n-butylphthalate	1.90E-06	1.00E-01		1.90E-05	

Residential Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Residential Child Dermal Contact with Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Di-n-octylphthalate	2.96E-06	1.80E-02		1.64E-04	
Dibenz (a, h) anthracene	3.21E-06				
Fluoranthene	6.73E-06	1.24E-02		5.43E-04	
Indeno (1,2,3-cd)pyrene	3.95E-06				
Pyrene	7.28E-06	9.30E-03		7.82E-04	
bis (2-Ethylhexyl) phthalate	4.19E-06	3.80E-03		1.10E-03	
Pathway Total					2.52E+00

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron	8.74E+00	3.00E-01		2.91E+01	
Tetraoxo-sulfate(1-)	2.72E+00				
Trichloroethene	2.46E-04	6.00E-03		4.10E-02	
cis-1,2-Dichloroethene	1.12E-02	1.00E-02		1.12E+00	
Technetium-99					
Uranium-238					
Pathway Total					3.03E+01

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia	1.98E-02				
Fluoride	2.78E-02	6.00E-02		4.63E-01	
Iron	2.00E+00	3.00E-01		6.66E+00	
Silica	1.26E+00				
Tetraoxo-sulfate(1-)	6.74E+00				
Zinc	6.53E-03	3.00E-01		2.18E-02	
1,1-Dichloroethene	1.32E-05	9.00E-03		1.47E-03	
Pentachlorophenol	5.60E-04	3.00E-02		1.87E-02	
Trichloroethene	1.12E-02	6.00E-03		1.86E+00	
bis (2-Ethylhexyl) phthalate	8.53E-04	2.00E-02		4.27E-02	
cis-1,2-Dichloroethene	1.92E-04	1.00E-02		1.92E-02	
Technetium-99					
Pathway Total					9.09E+00

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.62E-04	3.00E-03		5.40E-02	
Anthracene	1.53E-06	3.00E-01		5.11E-06	
Benz (a) anthracene	2.38E-06				
Benzo (a) pyrene	3.31E-06				
Benzo (b) fluoranthene	6.75E-07				
Benzo (ghi) perylene	2.25E-06				
Chrysene	2.25E-06				
Di-n-butylphthalate	1.02E-06	1.00E-01		1.02E-05	
Di-n-octylphthalate	1.59E-06	2.00E-02		7.94E-05	

Residential Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Dibenz(a,h)anthracene	1.72E-06				
Fluoranthene	3.61E-06	4.00E-02		9.03E-05	
Indeno(1,2,3-cd)pyrene	2.12E-06				
Pyrene	3.90E-06	3.00E-02		1.30E-04	
bis(2-Ethylhexyl)phthalate	2.25E-06	2.00E-02		1.12E-04	
Pathway Total					5.44E-02

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of Vegetables from McNairy Groun -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron	5.89E+00	3.00E-01		1.96E+01	
Tetraoxo-sulfate(1-)					
Trichloroethene	3.09E-04	6.00E-03		5.14E-02	
cis-1,2-Dichloroethene	2.03E-02	1.00E-02		2.03E+00	
Technetium-99					
Uranium-238					
Pathway Total					2.17E+01

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia	2.97E-01				
Fluoride		6.00E-02			
Iron	1.35E+00	3.00E-01		4.49E+00	
Silica					
Tetraoxo-sulfate(1-)					
Zinc	7.59E-03	3.00E-01		2.53E-02	
1,1-Dichloroethene	2.60E-05	9.00E-03		2.89E-03	
Pentachlorophenol	3.80E-04	3.00E-02		1.27E-02	
Trichloroethene	1.40E-02	6.00E-03		2.33E+00	
bis(2-Ethylhexyl)phthalate	5.92E-04	2.00E-02		2.96E-02	
cis-1,2-Dichloroethene	3.47E-04	1.00E-02		3.47E-02	
Technetium-99					
Pathway Total					6.93E+00

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of Vegetables from Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.09E-02	3.00E-03		3.65E+00	
Anthracene	1.12E-04	3.00E-01		3.74E-04	
Benz(a)anthracene	1.63E-04				
Benzo(a)pyrene	2.25E-04				
Benzo(b)fluoranthene	4.60E-05				
Benzo(ghi)perylene	1.53E-04				
Chrysene	1.54E-04				
Di-n-butylphthalate	7.18E-05	1.00E-01		7.18E-04	
Di-n-octylphthalate	1.07E-04	2.00E-02		5.37E-03	
Dibenz(a,h)anthracene	1.17E-04				

Residential Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of Vegetables from Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Fluoranthene	2.54E-04	4.00E-02		6.36E-03	
Indeno (1,2,3-cd)pyrene	1.44E-04				
Pyrene	2.75E-04	3.00E-02		9.17E-03	
bis(2-Ethylhexyl)phthalate	1.58E-04	2.00E-02		7.92E-03	
Pathway Total					3.68E+00

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation Household Use of McNairy Ground -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron					
Tetraoxo-sulfate (1-)					
Trichloroethene	1.46E-03		6.00E-03	2.43E-01	
cis-1,2-Dichloroethene	6.67E-02		1.00E-02	6.67E+00	
Technetium-99					
Uranium-238					
Pathway Total					6.91E+00

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia			2.86E-02		
Fluoride					
Iron					
Silica					
Tetraoxo-sulfate (1-)					
Zinc					
1,1-Dichloroethene	7.84E-05		9.00E-03	8.72E-03	
Pentachlorophenol			3.00E-02		
Trichloroethene	6.63E-02		6.00E-03	1.10E+01	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	1.14E-03		1.00E-02	1.14E-01	
Technetium-99					
Pathway Total					1.12E+01

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation While Showering of McNairy Grou -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron					
Tetraoxo-sulfate (1-)					
Trichloroethene	1.34E-04		6.00E-03	2.24E-02	
cis-1,2-Dichloroethene	6.14E-03		1.00E-02	6.14E-01	
Technetium-99					
Uranium-238					
Pathway Total					6.36E-01

Residential Hazard Index Estimates

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Ammonia Fluoride			2.86E-02		
Iron Silica Tetraoxo-sulfate(1-) Zinc					
1,1-Dichloroethene	7.22E-06		9.00E-03	8.03E-04	
Pentachlorophenol			3.00E-02		
Trichloroethene	6.10E-03		6.00E-03	1.02E+00	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	1.05E-04		1.00E-02	1.05E-02	
Technetium-99					
Pathway Total					1.03E+00

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	3.66E-10		1.00E-04	3.66E-06	
Anthracene	1.35E-07		1.05E+00	1.28E-07	
Benz(a)anthracene	1.73E-08				
Benzo(a)pyrene	9.24E-09				
Benzo(b)fluoranthene	9.97E-09				
Benzo(ghi)perylene	5.08E-12				
Chrysene	5.66E-08				
Di-n-butylphthalate	8.63E-09		3.50E-01	2.47E-08	
Di-n-octylphthalate	1.82E-09		7.00E-02	2.60E-08	
Dibenz(a,h)anthracene	1.13E-09				
Fluoranthene	8.09E-08		1.40E-01	5.78E-07	
Indeno(1,2,3-cd)pyrene	2.54E-09				
Pyrene	7.03E-08		1.05E-01	6.70E-07	
bis(2-Ethylhexyl)phthalate	7.17E-10		7.00E-02	1.02E-08	
Pathway Total					5.09E-06

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	1.03E-05	9.00E-04		1.15E-02	
cis-1,2-Dichloroethene	1.14E-05	1.00E-02		1.14E-03	
Pathway Total					1.26E-02

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	7.16E-07	9.00E-03		7.96E-05	
Acetone	9.34E-07	8.30E-02		1.12E-05	
Carbon Tetrachloride	6.02E-06	4.55E-04		1.32E-02	
Di-n-butylphthalate	5.81E-05	1.00E-01		5.81E-04	
Trichloroethene	3.98E-04	9.00E-04		4.42E-01	
bis(2-Ethylhexyl)phthalate	1.17E-05	3.80E-03		3.09E-03	

Residential Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
cis-1,2-Dichloroethene	4.09E-06	1.00E-02		4.09E-04	
Technetium-99					
Pathway Total					4.59E-01

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	3.76E-06	2.00E-05		1.88E-01	
Chromium	2.13E-04	6.00E-05		3.54E+00	
Vanadium	1.56E-04	7.00E-05		2.23E+00	
Pathway Total					5.96E+00

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	3.56E-04	6.00E-03		5.94E-02	
cis-1,2-Dichloroethene	6.30E-04	1.00E-02		6.30E-02	
Pathway Total					1.22E-01

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	4.44E-05	9.00E-03		4.93E-03	
Acetone	9.04E-04	1.00E-01		9.04E-03	
Carbon Tetrachloride	1.51E-04	7.00E-04		2.15E-01	
Di-n-butylphthalate	2.78E-04	1.00E-01		2.78E-03	
Trichloroethene	1.37E-02	6.00E-03		2.28E+00	
bis(2-Ethylhexyl)phthalate	2.76E-04	2.00E-02		1.38E-02	
cis-1,2-Dichloroethene	2.25E-04	1.00E-02		2.25E-02	
Technetium-99					
Pathway Total					2.55E+00

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	2.15E-06	2.00E-03		1.08E-03	
Chromium	1.22E-04	3.00E-03		4.05E-02	
Vanadium	8.90E-05	7.00E-03		1.27E-02	
Pathway Total					5.43E-02

Residential Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of Vegetables from McNairy Groun -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	3.42E-04	6.00E-03		5.71E-02	
cis-1,2-Dichloroethene	8.72E-04	1.00E-02		8.72E-02	
Pathway Total					1.44E-01

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwat -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	6.69E-05	9.00E-03		7.43E-03	
Acetone	1.41E-02	1.00E-01		1.41E-01	
Carbon Tetrachloride	1.17E-04	7.00E-04		1.67E-01	
Di-n-butylphthalate	1.48E-04	1.00E-01		1.48E-03	
Trichloroethene	1.32E-02	6.00E-03		2.20E+00	
bis(2-Ethylhexyl)phthalate	1.47E-04	2.00E-02		7.35E-03	
cis-1,2-Dichloroethene	3.12E-04	1.00E-02		3.12E-02	
Technetium-99					
Pathway Total					2.55E+00

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of Vegetables from Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	4.51E-04	2.00E-03		2.25E-01	
Chromium	2.52E-02	3.00E-03		8.41E+00	
Vanadium	1.86E-02	7.00E-03		2.65E+00	
Pathway Total					1.13E+01

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Inhalation Household Use of McNairy Ground -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	1.06E-03		6.00E-03	1.76E-01	
cis-1,2-Dichloroethene	1.87E-03		1.00E-02	1.87E-01	
Pathway Total					3.63E-01

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwate -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	1.32E-04		9.00E-03	1.46E-02	
Acetone	2.68E-03		1.00E-01	2.68E-02	
Carbon Tetrachloride	4.47E-04		5.71E-04	7.83E-01	
Di-n-butylphthalate			1.00E-01		
Trichloroethene	4.06E-02		6.00E-03	6.77E+00	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	6.68E-04		1.00E-02	6.68E-02	
Technetium-99					
Pathway Total					7.66E+00

Residential Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Inhalation While Showering of McNairy Grou -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	9.73E-05		6.00E-03	1.62E-02	
cis-1,2-Dichloroethene	1.72E-04		1.00E-02	1.72E-02	
Pathway Total					3.34E-02

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	1.21E-05		9.00E-03	1.35E-03	
Acetone	2.47E-04		1.00E-01	2.47E-03	
Carbon Tetrachloride	4.11E-05		5.71E-04	7.21E-02	
Di-n-butylphthalate			1.00E-01		
Trichloroethene	3.74E-03		6.00E-03	6.23E-01	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	6.15E-05		1.00E-02	6.15E-03	
Technetium-99					
Pathway Total					7.05E-01

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	4.69E-11		2.00E-05	2.34E-06	
Chromium	2.65E-09		1.00E-04	2.65E-05	
Vanadium	1.94E-09				
Pathway Total					2.88E-05

----- LOCATION=SWMU 193B PATHWAY=Residential Child Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	1.98E-05	9.00E-04		2.20E-02	
cis-1,2-Dichloroethene	2.19E-05	1.00E-02		2.19E-03	
Pathway Total					2.42E-02

----- LOCATION=SWMU 193B PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	1.37E-06	9.00E-03		1.52E-04	
Acetone	1.79E-06	8.30E-02		2.15E-05	
Carbon Tetrachloride	1.15E-05	4.55E-04		2.53E-02	
Di-n-butylphthalate	1.11E-04	1.00E-01		1.11E-03	
Trichloroethene	7.62E-04	9.00E-04		8.46E-01	
bis(2-Ethylhexyl)phthalate	2.25E-05	3.80E-03		5.91E-03	
cis-1,2-Dichloroethene	7.83E-06	1.00E-02		7.83E-04	
Technetium-99					
Pathway Total					8.80E-01

Residential Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Residential Child Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	1.94E-05	2.00E-05		9.68E-01	
Chromium	1.09E-03	6.00E-05		1.82E+01	
Vanadium	8.02E-04	7.00E-05		1.15E+01	
Pathway Total					3.07E+01

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	8.60E-04	6.00E-03		1.43E-01	
cis-1,2-Dichloroethene	1.52E-03	1.00E-02		1.52E-01	
Pathway Total					2.95E-01

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	1.07E-04	9.00E-03		1.19E-02	
Acetone	2.18E-03	1.00E-01		2.18E-02	
Carbon Tetrachloride	3.64E-04	7.00E-04		5.20E-01	
Di-n-butylphthalate	6.72E-04	1.00E-01		6.72E-03	
Trichloroethene	3.31E-02	6.00E-03		5.51E+00	
bis(2-Ethylhexyl)phthalate	6.67E-04	2.00E-02		3.33E-02	
cis-1,2-Dichloroethene	5.43E-04	1.00E-02		5.43E-02	
Technetium-99					
Pathway Total					6.16E+00

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	2.08E-05	2.00E-03		1.04E-02	
Chromium	1.17E-03	3.00E-03		3.91E-01	
Vanadium	8.60E-04	7.00E-03		1.23E-01	
Pathway Total					5.24E-01

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of Vegetables from McNairy Groun -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	1.08E-03	6.00E-03		1.80E-01	
cis-1,2-Dichloroethene	2.74E-03	1.00E-02		2.74E-01	
Pathway Total					4.54E-01

Residential Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	2.10E-04	9.00E-03		2.34E-02	
Acetone	4.45E-02	1.00E-01		4.45E-01	
Carbon Tetrachloride	3.68E-04	7.00E-04		5.26E-01	
Di-n-butylphthalate	4.66E-04	1.00E-01		4.66E-03	
Trichloroethene	4.14E-02	6.00E-03		6.91E+00	
bis(2-Ethylhexyl)phthalate	4.62E-04	2.00E-02		2.31E-02	
cis-1,2-Dichloroethene	9.81E-04	1.00E-02		9.81E-02	
Technetium-99					
Pathway Total					8.03E+00

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of Vegetables from Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	1.42E-03	2.00E-03		7.09E-01	
Chromium	7.93E-02	3.00E-03		2.64E+01	
Vanadium	5.84E-02	7.00E-03		8.35E+00	
Pathway Total					3.55E+01

----- LOCATION=SWMU 193B PATHWAY=Residential Child Inhalation Household Use of McNairy Ground -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	5.10E-03		6.00E-03	8.50E-01	
cis-1,2-Dichloroethene	9.02E-03		1.00E-02	9.02E-01	
Pathway Total					1.75E+00

----- LOCATION=SWMU 193B PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	6.35E-04		9.00E-03	7.06E-02	
Acetone	1.29E-02		1.00E-01	1.29E-01	
Carbon Tetrachloride	2.16E-03		5.71E-04	3.78E+00	
Di-n-butylphthalate			1.00E-01		
Trichloroethene	1.96E-01		6.00E-03	3.27E+01	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	3.22E-03		1.00E-02	3.22E-01	
Technetium-99					
Pathway Total					3.70E+01

----- LOCATION=SWMU 193B PATHWAY=Residential Child Inhalation While Showering of McNairy Grou -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	4.70E-04		6.00E-03	7.83E-02	
cis-1,2-Dichloroethene	8.31E-04		1.00E-02	8.31E-02	
Pathway Total					1.61E-01

Residential Hazard Index Estimates

----- LOCATION=SWMU 193B PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	5.85E-05		9.00E-03	6.50E-03	
Acetone	1.19E-03		1.00E-01	1.19E-02	
Carbon Tetrachloride	1.99E-04		5.71E-04	3.48E-01	
Di-n-butylphthalate			1.00E-01		
Trichloroethene	1.81E-02		6.00E-03	3.01E+00	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	2.97E-04		1.00E-02	2.97E-02	
Technetium-99					
Pathway Total					3.41E+00

----- LOCATION=SWMU 193B PATHWAY=Residential Child Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium	4.69E-11		2.00E-05	2.34E-06	
Chromium	2.65E-09		1.00E-04	2.65E-05	
Vanadium	1.94E-09				
Pathway Total					2.88E-05

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	1.90E-03	1.00E-01		1.90E-02	
Antimony	5.69E-06	8.00E-06		7.11E-01	
Arsenic	6.07E-07	1.23E-04		4.94E-03	
Barium	1.21E-05	4.90E-03		2.48E-03	
Beryllium	5.52E-07	2.00E-05		2.76E-02	
Cadmium	1.76E-06	5.00E-06		3.52E-01	
Chromium	7.12E-06	6.00E-05		1.19E-01	
Cobalt	2.64E-06	4.80E-02		5.51E-05	
Iron	2.93E-03	4.50E-02		6.50E-02	
Lead	1.24E-05	1.50E-08		8.29E+02	
Manganese	6.77E-05	1.84E-03		3.68E-02	
Mercury	9.95E-09	2.10E-05		4.74E-04	
Molybdenum	2.30E-06	1.90E-03		1.21E-03	
Nickel	2.67E-06	5.40E-03		4.95E-04	
Silica					
Silver	1.65E-06	9.00E-04		1.83E-03	
Tetraoxo-sulfate(1-)					
Thallium	6.12E-06				
Uranium	3.18E-07	2.55E-03		1.25E-04	
Vanadium	4.16E-05	7.00E-05		5.94E-01	
Zinc	1.01E-05	6.00E-02		1.68E-04	
1,1,2-Trichloroethane	1.04E-06	3.24E-03		3.22E-04	
1,1-Dichloroethene	1.11E-06	9.00E-03		1.23E-04	
1,2-Dichloroethane	6.59E-07				
Benzene	2.61E-06				
Bromodichloromethane	7.21E-07	1.96E-02		3.68E-05	
Carbon Tetrachloride	2.73E-06	4.55E-04		6.01E-03	
Chloroform	1.11E-06	2.00E-03		5.53E-04	
Ethylbenzene	9.20E-06	9.70E-02		9.48E-05	
Polychlorinated biphenyl	1.72E-06				
Tetrachloroethene	4.60E-05	1.00E-02		4.60E-03	
Trichloroethene	9.81E-07	9.00E-04		1.09E-03	

Residential Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Dermal Contact with McNairy Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Vinyl Chloride	3.34E-06				
Xylene	2.57E-05	1.84E+00		1.39E-05	
cis-1,2-Dichloroethene	2.49E-06	1.00E-02		2.49E-04	
trans-1,2-Dichloroethene	2.66E-07	2.00E-02		1.33E-05	
Radon-222					
Pathway Total					8.31E+02

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	2.99E-05	7.20E-03		4.15E-03	
Trichloroethene	1.29E-04	9.00E-04		1.43E-01	
Pathway Total					1.47E-01

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.31E-05	6.00E-05		2.19E-01	
Lead	5.98E-05	1.50E-08		3.99E+03	
Zinc	9.98E-05	6.00E-02		1.66E-03	
Pathway Total					3.99E+03

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	1.05E+00	1.00E+00		1.05E+00	
Antimony	3.13E-03	4.00E-04		7.83E+00	
Arsenic	3.34E-04	3.00E-04		1.11E+00	
Barium	6.69E-03	7.00E-02		9.56E-02	
Beryllium	3.04E-04	2.00E-03		1.52E-01	
Cadmium	9.69E-04	5.00E-04		1.94E+00	
Chromium	3.92E-03	3.00E-03		1.31E+00	
Cobalt	1.46E-03	6.00E-02		2.43E-02	
Iron	1.61E+00	3.00E-01		5.38E+00	
Lead	6.85E-03	1.00E-07		6.85E+04	
Manganese	3.73E-02	4.60E-02		8.11E-01	
Mercury	5.48E-06	3.00E-04		1.83E-02	
Molybdenum	1.26E-03	5.00E-03		2.53E-01	
Nickel	1.47E-03	2.00E-02		7.36E-02	
Silica	2.19E-01				
Silver	9.10E-04	5.00E-03		1.82E-01	
Tetraoxo-sulfate(1-)	1.81E-01				
Thallium	3.37E-03				
Uranium	1.75E-04	3.00E-03		5.85E-02	
Vanadium	2.29E-02	7.00E-03		3.27E+00	
Zinc	5.57E-03	3.00E-01		1.86E-02	
1,1,2-Trichloroethane	6.85E-05	4.00E-03		1.71E-02	
1,1-Dichloroethene	6.85E-05	9.00E-03		7.61E-03	

Residential Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of McNairy Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethane	6.85E-05				
Benzene	6.85E-05				
Bromodichloromethane	6.85E-05	2.00E-02		3.42E-03	
Carbon Tetrachloride	6.85E-05	7.00E-04		9.78E-02	
Chloroform	6.85E-05	1.00E-02		6.85E-03	
Ethylbenzene	6.85E-05	1.00E-01		6.85E-04	
Polychlorinated biphenyl	2.74E-06				
Tetrachloroethene	6.85E-05	1.00E-02		6.85E-03	
Trichloroethene	3.38E-05	6.00E-03		5.63E-03	
Vinyl Chloride	2.52E-04				
Xylene	1.49E-04	2.00E+00		7.46E-05	
cis-1,2-Dichloroethene	1.37E-04	1.00E-02		1.37E-02	
trans-1,2-Dichloroethene	1.37E-04	2.00E-02		6.85E-03	
Radon-222					
Pathway Total					6.85E+04

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	1.54E-02	9.00E-03		1.71E+00	
Trichloroethene	4.44E-03	6.00E-03		7.40E-01	
Pathway Total					2.45E+00

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	7.49E-06	3.00E-03		2.50E-03	
Lead	3.42E-05	1.00E-07		3.42E+02	
Zinc	5.70E-05	3.00E-01		1.90E-04	
Pathway Total					3.42E+02

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of Vegetables from McNairy Groun -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	5.42E-01	1.00E+00		5.42E-01	
Antimony	1.66E-03	4.00E-04		4.15E+00	
Arsenic	1.77E-04	3.00E-04		5.91E-01	
Barium	3.48E-03	7.00E-02		4.98E-02	
Beryllium	1.58E-04	2.00E-03		7.90E-02	
Cadmium	6.90E-04	5.00E-04		6.90E-01	
Chromium	2.03E-03	3.00E-03		6.75E-01	
Cobalt	8.00E-04	6.00E-02		1.33E-02	
Iron	8.33E-01	3.00E-01		2.78E+00	
Lead	3.54E-03	1.00E-07		3.54E+04	
Manganese	2.29E-02	4.60E-02		1.64E-01	
Mercury	5.17E-06	3.00E-04		1.72E-02	
Molybdenum	7.97E-04	5.00E-03		1.59E-01	
Nickel	8.65E-04	2.00E-02		4.32E-02	

Residential Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of Vegetables from McNairy Groun -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Silica					
Silver	4.70E-04	5.00E-03		9.39E-02	
Tetraoxo-sulfate(1-)					
Thallium	1.74E-03				
Uranium	9.07E-05	3.00E-03		3.02E-02	
Vanadium	1.19E-02	7.00E-03		1.70E+00	
Zinc	4.97E-03	3.00E-01		1.66E-02	
1,1,2-Trichloroethane	8.74E-05	4.00E-03		2.18E-02	
1,1-Dichloroethene	1.03E-04	9.00E-03		1.15E-02	
1,2-Dichloroethane	1.37E-04				
Benzene	8.09E-05				
Bromodichloromethane	8.09E-05	2.00E-02		4.04E-03	
Carbon Tetrachloride	5.32E-05	7.00E-04		7.60E-02	
Chloroform	8.74E-05	1.00E-02		8.74E-03	
Ethylbenzene	4.73E-05	1.00E-01		4.73E-04	
Polychlorinated biphenyl	1.42E-06				
Tetrachloroethene	5.87E-05	1.00E-02		5.87E-03	
Trichloroethene	3.25E-05	6.00E-03		5.41E-03	
Vinyl Chloride	5.56E-04				
Xylene	9.70E-05	2.00E+00		4.85E-05	
cis-1,2-Dichloroethene	1.90E-04	1.00E-02		1.90E-02	
trans-1,2-Dichloroethene	8.63E-04	2.00E-02		4.32E-02	
Radon-222					
Pathway Total					3.54E+04

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwat -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	9.70E-02	9.00E-03		1.08E+01	
Trichloroethene	4.27E-03	6.00E-03		7.11E-01	
Pathway Total					1.15E+01

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of Vegetables from Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.56E-03	3.00E-03		5.18E-01	
Lead	7.11E-03	1.00E-07		7.11E+04	
Zinc	2.38E-02	3.00E-01		7.94E-02	
Pathway Total					7.11E+04

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation Household Use of McNairy Ground -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum					
Antimony					
Arsenic					
Barium			1.43E-04		
Beryllium			5.71E-06		

Residential Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation Household Use of McNairy Ground -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Cadmium			5.71E-05		
Chromium			2.29E-06		
Cobalt			5.70E-06		
Iron					
Lead			2.86E-04		
Manganese			1.43E-05		
Mercury			8.57E-05		
Molybdenum					
Nickel					
Silica					
Silver					
Tetraoxo-sulfate(1-)					
Thallium					
Uranium					
Vanadium					
Zinc					
1,1,2-Trichloroethane	2.03E-04		4.00E-03	5.08E-02	
1,1-Dichloroethene	2.03E-04		9.00E-03	2.26E-02	
1,2-Dichloroethane	2.03E-04		2.86E-03	7.10E-02	
Benzene	2.03E-04		1.71E-03	1.19E-01	
Bromodichloromethane	2.03E-04		2.00E-02	1.02E-02	
Carbon Tetrachloride	2.03E-04		5.71E-04	3.56E-01	
Chloroform	2.03E-04		1.00E-02	2.03E-02	
Ethylbenzene	2.03E-04		2.86E-01	7.11E-04	
Polychlorinated biphenyl					
Tetrachloroethene	2.03E-04		1.71E-01	1.18E-03	
Trichloroethene	1.00E-04		6.00E-03	1.67E-02	
Vinyl Chloride	7.47E-04				
Xylene	4.43E-04		2.00E+00	2.21E-04	
cis-1,2-Dichloroethene	4.06E-04		1.00E-02	4.06E-02	
trans-1,2-Dichloroethene	4.06E-04		2.00E-02	2.03E-02	
Radon-222					
Pathway Total					7.29E-01

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	4.57E-02		9.00E-03	5.07E+00	
Trichloroethene	1.32E-02		6.00E-03	2.19E+00	
Pathway Total					7.27E+00

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation While Showering of McNairy Grou -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum					
Antimony					
Arsenic					
Barium			1.43E-04		
Beryllium			5.71E-06		
Cadmium			5.71E-05		
Chromium			2.29E-06		
Cobalt			5.70E-06		

Residential Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation While Showering of McNairy Grou -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Iron					
Lead			2.86E-04		
Manganese			1.43E-05		
Mercury			8.57E-05		
Molybdenum					
Nickel					
Silica					
Silver					
Tetraoxo-sulfate (1-)					
Thallium					
Uranium					
Vanadium					
Zinc					
1,1,2-Trichloroethane	1.87E-05		4.00E-03	4.68E-03	
1,1-Dichloroethene	1.87E-05		9.00E-03	2.08E-03	
1,2-Dichloroethane	1.87E-05		2.86E-03	6.54E-03	
Benzene	1.87E-05		1.71E-03	1.09E-02	
Bromodichloromethane	1.87E-05		2.00E-02	9.35E-04	
Carbon Tetrachloride	1.87E-05		5.71E-04	3.28E-02	
Chloroform	1.87E-05		1.00E-02	1.87E-03	
Ethylbenzene	1.87E-05		2.86E-01	6.55E-05	
Polychlorinated biphenyl					
Tetrachloroethene	1.87E-05		1.71E-01	1.09E-04	
Trichloroethene	9.22E-06		6.00E-03	1.54E-03	
Vinyl Chloride	6.88E-05				
Xylene	4.08E-05		2.00E+00	2.04E-05	
cis-1,2-Dichloroethene	3.74E-05		1.00E-02	3.74E-03	
trans-1,2-Dichloroethene	3.74E-05		2.00E-02	1.87E-03	
Radon-222					
Pathway Total					6.71E-02

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	4.20E-03		9.00E-03	4.67E-01	
Trichloroethene	1.21E-03		6.00E-03	2.02E-01	
Pathway Total					6.69E-01

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.63E-10		1.00E-04	1.63E-06	
Lead	7.45E-10		1.00E-03	7.45E-07	
Zinc	1.24E-09				
Pathway Total					2.38E-06

Residential Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Residential Child Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	3.64E-03	1.00E-01		3.64E-02	
Antimony	1.09E-05	8.00E-06		1.36E+00	
Arsenic	1.16E-06	1.23E-04		9.45E-03	
Barium	2.33E-05	4.90E-03		4.75E-03	
Beryllium	1.06E-06	2.00E-05		5.28E-02	
Cadmium	3.37E-06	5.00E-06		6.73E-01	
Chromium	1.36E-05	6.00E-05		2.27E-01	
Cobalt	5.06E-06	4.80E-02		1.05E-04	
Iron	5.61E-03	4.50E-02		1.25E-01	
Lead	2.38E-05	1.50E-08		1.59E+03	
Manganese	1.30E-04	1.84E-03		7.05E-02	
Mercury	1.90E-08	2.10E-05		9.07E-04	
Molybdenum	4.40E-06	1.90E-03		2.31E-03	
Nickel	5.12E-06	5.40E-03		9.47E-04	
Silica					
Silver	3.16E-06	9.00E-04		3.51E-03	
Tetraoxo-sulfate (1-)					
Thallium	1.17E-05				
Uranium	6.10E-07	2.55E-03		2.39E-04	
Vanadium	7.96E-05	7.00E-05		1.14E+00	
Zinc	1.94E-05	6.00E-02		3.23E-04	
1,1,2-Trichloroethane	2.00E-06	3.24E-03		6.17E-04	
1,1-Dichloroethene	2.12E-06	9.00E-03		2.35E-04	
1,2-Dichloroethane	1.26E-06				
Benzene	5.00E-06				
Bromodichloromethane	1.38E-06	1.96E-02		7.05E-05	
Carbon Tetrachloride	5.24E-06	4.55E-04		1.15E-02	
Chloroform	2.12E-06	2.00E-03		1.06E-03	
Ethylbenzene	1.76E-05	9.70E-02		1.82E-04	
Polychlorinated biphenyl	3.30E-06				
Tetrachloroethene	8.81E-05	1.00E-02		8.81E-03	
Trichloroethene	1.88E-06	9.00E-04		2.09E-03	
Vinyl Chloride	6.39E-06				
Xylene	4.91E-05	1.84E+00		2.67E-05	
cis-1,2-Dichloroethene	4.76E-06	1.00E-02		4.76E-04	
trans-1,2-Dichloroethene	5.10E-07	2.00E-02		2.55E-05	
Radon-222					
Pathway Total					1.59E+03

----- LOCATION=SWMU 193C PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	5.73E-05	7.20E-03		7.95E-03	
Trichloroethene	2.47E-04	9.00E-04		2.74E-01	
Pathway Total					2.82E-01

----- LOCATION=SWMU 193C PATHWAY=Residential Child Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	6.75E-05	6.00E-05		1.12E+00	
Lead	3.08E-04	1.50E-08		2.05E+04	
Zinc	5.13E-04	6.00E-02		8.55E-03	
Pathway Total					2.05E+04

Residential Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Residential Child Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	2.53E+00	1.00E+00		2.53E+00	
Antimony	7.56E-03	4.00E-04		1.89E+01	
Arsenic	8.07E-04	3.00E-04		2.69E+00	
Barium	1.62E-02	7.00E-02		2.31E-01	
Beryllium	7.34E-04	2.00E-03		3.67E-01	
Cadmium	2.34E-03	5.00E-04		4.68E+00	
Chromium	9.47E-03	3.00E-03		3.16E+00	
Cobalt	3.52E-03	6.00E-02		5.86E-02	
Iron	3.89E+00	3.00E-01		1.30E+01	
Lead	1.65E-02	1.00E-07		1.65E+05	
Manganese	9.01E-02	4.60E-02		1.96E+00	
Mercury	1.32E-05	3.00E-04		4.41E-02	
Molybdenum	3.05E-03	5.00E-03		6.11E-01	
Nickel	3.55E-03	2.00E-02		1.78E-01	
Silica	5.29E-01				
Silver	2.20E-03	5.00E-03		4.39E-01	
Tetraoxo-sulfate (1-)	4.36E-01				
Thallium	8.13E-03				
Uranium	4.23E-04	3.00E-03		1.41E-01	
Vanadium	5.53E-02	7.00E-03		7.90E+00	
Zinc	1.34E-02	3.00E-01		4.48E-02	
1,1,2-Trichloroethane	1.65E-04	4.00E-03		4.13E-02	
1,1-Dichloroethene	1.65E-04	9.00E-03		1.84E-02	
1,2-Dichloroethane	1.65E-04				
Benzene	1.65E-04				
Bromodichloromethane	1.65E-04	2.00E-02		8.27E-03	
Carbon Tetrachloride	1.65E-04	7.00E-04		2.36E-01	
Chloroform	1.65E-04	1.00E-02		1.65E-02	
Ethylbenzene	1.65E-04	1.00E-01		1.65E-03	
Polychlorinated biphenyl	6.61E-06				
Tetrachloroethene	1.65E-04	1.00E-02		1.65E-02	
Trichloroethene	8.15E-05	6.00E-03		1.36E-02	
Vinyl Chloride	6.08E-04				
Xylene	3.60E-04	2.00E+00		1.80E-04	
cis-1,2-Dichloroethene	3.31E-04	1.00E-02		3.31E-02	
trans-1,2-Dichloroethene	3.31E-04	2.00E-02		1.65E-02	
Radon-222					
Pathway Total					1.65E+05

----- LOCATION=SWMU 193C PATHWAY=Residential Child Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	3.72E-02	9.00E-03		4.13E+00	
Trichloroethene	1.07E-02	6.00E-03		1.79E+00	
Pathway Total					5.92E+00

----- LOCATION=SWMU 193C PATHWAY=Residential Child Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	7.23E-05	3.00E-03		2.41E-02	
Lead	3.30E-04	1.00E-07		3.30E+03	
Zinc	5.50E-04	3.00E-01		1.83E-03	
Pathway Total					3.30E+03

Residential Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Residential Child Ingestion of Vegetables from McNairy Groun -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	1.70E+00	1.00E+00		1.70E+00	
Antimony	5.23E-03	4.00E-04		1.31E+01	
Arsenic	5.58E-04	3.00E-04		1.86E+00	
Barium	1.10E-02	7.00E-02		1.57E-01	
Beryllium	4.97E-04	2.00E-03		2.49E-01	
Cadmium	2.17E-03	5.00E-04		2.17E+00	
Chromium	6.37E-03	3.00E-03		2.12E+00	
Cobalt	2.52E-03	6.00E-02		4.19E-02	
Iron	2.62E+00	3.00E-01		8.74E+00	
Lead	1.11E-02	1.00E-07		1.11E+05	
Manganese	7.21E-02	4.60E-02		5.15E-01	
Mercury	1.63E-05	3.00E-04		5.42E-02	
Molybdenum	2.51E-03	5.00E-03		5.01E-01	
Nickel	2.72E-03	2.00E-02		1.36E-01	
Silica					
Silver	1.48E-03	5.00E-03		2.95E-01	
Tetraoxo-sulfate(1-)					
Thallium	5.49E-03				
Uranium	2.85E-04	3.00E-03		9.51E-02	
Vanadium	3.73E-02	7.00E-03		5.33E+00	
Zinc	1.56E-02	3.00E-01		5.21E-02	
1,1,2-Trichloroethane	2.75E-04	4.00E-03		6.87E-02	
1,1-Dichloroethene	3.25E-04	9.00E-03		3.61E-02	
1,2-Dichloroethane	4.30E-04				
Benzene	2.54E-04				
Bromodichloromethane	2.54E-04	2.00E-02		1.27E-02	
Carbon Tetrachloride	1.67E-04	7.00E-04		2.39E-01	
Chloroform	2.75E-04	1.00E-02		2.75E-02	
Ethylbenzene	1.49E-04	1.00E-01		1.49E-03	
Polychlorinated biphenyl	4.48E-06				
Tetrachloroethene	1.85E-04	1.00E-02		1.85E-02	
Trichloroethene	1.02E-04	6.00E-03		1.70E-02	
Vinyl Chloride	1.75E-03				
Xylene	3.05E-04	2.00E+00		1.53E-04	
cis-1,2-Dichloroethene	5.97E-04	1.00E-02		5.97E-02	
trans-1,2-Dichloroethene	2.72E-03	2.00E-02		1.36E-01	
Radon-222					
Pathway Total					1.11E+05

----- LOCATION=SWMU 193C PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	3.05E-01	9.00E-03		3.39E+01	
Trichloroethene	1.34E-02	6.00E-03		2.24E+00	
Pathway Total					3.61E+01

----- LOCATION=SWMU 193C PATHWAY=Residential Child Ingestion of Vegetables from Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	4.89E-03	3.00E-03		1.63E+00	
Lead	2.24E-02	1.00E-07		2.24E+05	
Zinc	7.50E-02	3.00E-01		2.50E-01	
Pathway Total					2.24E+05

Residential Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Residential Child Inhalation Household Use of McNairy Ground -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium			1.43E-04		
Cadmium			5.71E-06		
Chromium			5.71E-05		
Cobalt			2.29E-06		
Iron			5.70E-06		
Lead					
Manganese			2.86E-04		
Mercury			1.43E-05		
Molybdenum			8.57E-05		
Nickel					
Silica					
Silver					
Tetraoxo-sulfate(1-)					
Thallium					
Uranium					
Vanadium					
Zinc					
1,1,2-Trichloroethane	9.81E-04		4.00E-03	2.45E-01	
1,1-Dichloroethene	9.81E-04		9.00E-03	1.09E-01	
1,2-Dichloroethane	9.81E-04		2.86E-03	3.43E-01	
Benzene	9.81E-04		1.71E-03	5.73E-01	
Bromodichloromethane	9.81E-04		2.00E-02	4.90E-02	
Carbon Tetrachloride	9.81E-04		5.71E-04	1.72E+00	
Chloroform	9.81E-04		1.00E-02	9.81E-02	
Ethylbenzene	9.81E-04		2.86E-01	3.43E-03	
Polychlorinated biphenyl					
Tetrachloroethene	9.81E-04		1.71E-01	5.72E-03	
Trichloroethene	4.84E-04		6.00E-03	8.06E-02	
Vinyl Chloride	3.61E-03				
Xylene	2.14E-03		2.00E+00	1.07E-03	
cis-1,2-Dichloroethene	1.96E-03		1.00E-02	1.96E-01	
trans-1,2-Dichloroethene	1.96E-03		2.00E-02	9.81E-02	
Radon-222					
Pathway Total					3.52E+00

----- LOCATION=SWMU 193C PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	2.20E-01		9.00E-03	2.45E+01	
Trichloroethene	6.35E-02		6.00E-03	1.06E+01	
Pathway Total					3.51E+01

----- LOCATION=SWMU 193C PATHWAY=Residential Child Inhalation While Showering of McNairy Grou -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum					
Antimony					
Arsenic					
Barium			1.43E-04		

Residential Hazard Index Estimates

----- LOCATION=SWMU 193C PATHWAY=Residential Child Inhalation While Showering of McNairy Grou -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Beryllium			5.71E-06		
Cadmium			5.71E-05		
Chromium			2.29E-06		
Cobalt			5.70E-06		
Iron					
Lead			2.86E-04		
Manganese			1.43E-05		
Mercury			8.57E-05		
Molybdenum					
Nickel					
Silica					
Silver					
Tetraoxo-sulfate(1-)					
Thallium					
Uranium					
Vanadium					
Zinc					
1,1,2-Trichloroethane	9.03E-05		4.00E-03	2.26E-02	
1,1-Dichloroethene	9.03E-05		9.00E-03	1.00E-02	
1,2-Dichloroethane	9.03E-05		2.86E-03	3.16E-02	
Benzene	9.03E-05		1.71E-03	5.28E-02	
Bromodichloromethane	9.03E-05		2.00E-02	4.51E-03	
Carbon Tetrachloride	9.03E-05		5.71E-04	1.58E-01	
Chloroform	9.03E-05		1.00E-02	9.03E-03	
Ethylbenzene	9.03E-05		2.86E-01	3.16E-04	
Polychlorinated biphenyl					
Tetrachloroethene	9.03E-05		1.71E-01	5.27E-04	
Trichloroethene	4.45E-05		6.00E-03	7.42E-03	
Vinyl Chloride	3.32E-04				
Xylene	1.97E-04		2.00E+00	9.84E-05	
cis-1,2-Dichloroethene	1.81E-04		1.00E-02	1.81E-02	
trans-1,2-Dichloroethene	1.81E-04		2.00E-02	9.03E-03	
Radon-222					
Pathway Total					3.24E-01

----- LOCATION=SWMU 193C PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,2-Dichloroethene	2.03E-02		9.00E-03	2.26E+00	
Trichloroethene	5.85E-03		6.00E-03	9.75E-01	
Pathway Total					3.23E+00

----- LOCATION=SWMU 193C PATHWAY=Residential Child Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Chromium	1.63E-10		1.00E-04	1.63E-06	
Lead	7.45E-10		1.00E-03	7.45E-07	
Zinc	1.24E-09				
Pathway Total					2.38E-06

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	4.61E-06	9.00E-03		5.12E-04	
Carbon Tetrachloride	3.06E-06	4.55E-04		6.73E-03	
Trichloroethene	3.46E-04	9.00E-04		3.85E-01	
cis-1,2-Dichloroethene	5.74E-05	1.00E-02		5.74E-03	
Pathway Total					3.98E-01

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	5.39E-04	1.00E-01		5.39E-03	
Arsenic	2.74E-07	1.23E-04		2.23E-03	
Barium	1.71E-05	4.90E-03		3.48E-03	
Beryllium	5.15E-07	2.00E-05		2.58E-02	
Chromium	6.30E-06	6.00E-05		1.05E-01	
Cobalt	4.70E-06	4.80E-02		9.78E-05	
Copper	3.97E-06	1.20E-02		3.31E-04	
Iron	1.15E-03	4.50E-02		2.56E-02	
Lead	4.04E-06	1.50E-08		2.69E+02	
Lithium	3.70E-06	1.60E-02		2.31E-04	
Manganese	8.27E-05	1.84E-03		4.49E-02	
Mercury	2.15E-08	2.10E-05		1.02E-03	
Nickel	7.63E-06	5.40E-03		1.41E-03	
Silica					
Sulfate	5.90E-04				
Tetraoxo-sulfate(1-)					
Vanadium	1.83E-05	7.00E-05		2.61E-01	
Zinc	1.12E-05	6.00E-02		1.87E-04	
1,1-Dichloroethene	7.91E-06	9.00E-03		8.79E-04	
Trichloroethene	5.38E-04	9.00E-04		5.97E-01	
bis(2-Ethylhexyl)phthalate	1.11E-05	3.80E-03		2.93E-03	
cis-1,2-Dichloroethene	3.50E-06	1.00E-02		3.50E-04	
Radon-222					
Technetium-99					
Pathway Total					2.71E+02

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	4.99E-04	4.90E-03		1.02E-01	
Beryllium	1.60E-06	2.00E-05		7.99E-02	
Chromium	2.25E-05	6.00E-05		3.76E-01	
Zinc	2.71E-04	6.00E-02		4.51E-03	
Acenaphthene	1.58E-06	1.86E-02		8.51E-05	
Acenaphthylene	1.26E-06				
Anthracene	2.84E-06	2.28E-01		1.25E-05	
Benz(a)anthracene	3.81E-06				
Benzo(a)pyrene	2.35E-06				
Benzo(b)fluoranthene	5.52E-06				
Benzo(ghi)perylene	3.58E-06				
Benzo(k)fluoranthene	2.74E-06				
Chrysene	6.28E-06				
Dibenz(a,h)anthracene	1.20E-06				
Dibenzofuran	5.90E-07	2.00E-03		2.95E-04	

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Dermal Contact with Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Fluoranthene	4.08E-06	1.24E-02		3.29E-04	
Fluorene	1.05E-06	2.00E-02		5.25E-05	
Indeno(1,2,3-cd)pyrene	3.84E-06				
PCB-1016	6.84E-07	6.30E-05		1.09E-02	
PCB-1254	2.76E-07	1.80E-05		1.53E-02	
PCB-1260	5.38E-07				
Phenanthrene	4.76E-06				
Pyrene	4.68E-06	9.30E-03		5.03E-04	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					5.89E-01

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	2.85E-04	9.00E-03		3.17E-02	
Carbon Tetrachloride	7.67E-05	7.00E-04		1.10E-01	
Trichloroethene	1.19E-02	6.00E-03		1.99E+00	
cis-1,2-Dichloroethene	3.16E-03	1.00E-02		3.16E-01	
Pathway Total					2.45E+00

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	2.97E-01	1.00E+00		2.97E-01	
Arsenic	1.51E-04	3.00E-04		5.03E-01	
Barium	9.41E-03	7.00E-02		1.34E-01	
Beryllium	2.84E-04	2.00E-03		1.42E-01	
Chromium	3.47E-03	3.00E-03		1.16E+00	
Cobalt	2.59E-03	6.00E-02		4.31E-02	
Copper	2.19E-03	4.00E-02		5.46E-02	
Iron	6.35E-01	3.00E-01		2.12E+00	
Lead	2.23E-03	1.00E-07		2.23E+04	
Lithium	2.04E-03	2.00E-02		1.02E-01	
Manganese	4.55E-02	4.60E-02		9.90E-01	
Mercury	1.18E-05	3.00E-04		3.94E-02	
Nickel	4.21E-03	2.00E-02		2.10E-01	
Silica	2.84E-01				
Sulfate	3.25E-01				
Tetraoxo-sulfate(1-)	2.69E-01				
Vanadium	1.01E-02	7.00E-03		1.44E+00	
Zinc	6.17E-03	3.00E-01		2.06E-02	
1,1-Dichloroethene	4.90E-04	9.00E-03		5.44E-02	
Trichloroethene	1.85E-02	6.00E-03		3.09E+00	
bis(2-Ethylhexyl)phthalate	2.62E-04	2.00E-02		1.31E-02	
cis-1,2-Dichloroethene	1.93E-04	1.00E-02		1.93E-02	
Radon-222					
Technetium-99					

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of RGA Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Pathway Total					2.23E+04

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	2.85E-04	7.00E-02		4.07E-03	
Beryllium	9.13E-07	2.00E-03		4.57E-04	
Chromium	1.29E-05	3.00E-03		4.29E-03	
Zinc	1.55E-04	3.00E-01		5.16E-04	
Acenaphthene	4.52E-07	6.00E-02		7.53E-06	
Acenaphthylene	3.59E-07				
Anthracene	8.12E-07	3.00E-01		2.71E-06	
Benz(a)anthracene	1.09E-06				
Benzo(a)pyrene	6.70E-07				
Benzo(b)fluoranthene	1.58E-06				
Benzo(ghi)perylene	1.02E-06				
Benzo(k)fluoranthene	7.84E-07				
Chrysene	1.79E-06				
Dibenz(a,h)anthracene	3.43E-07				
Dibenzofuran	1.68E-07	4.00E-03		4.21E-05	
Fluoranthene	1.17E-06	4.00E-02		2.92E-05	
Fluorene	3.00E-07	4.00E-02		7.50E-06	
Indeno(1,2,3-cd)pyrene	1.10E-06				
PCB-1016	3.26E-07	7.00E-05		4.65E-03	
PCB-1254	1.32E-07	2.00E-05		6.58E-03	
PCB-1260	2.56E-07				
Phenanthrene	1.36E-06				
Pyrene	1.34E-06	3.00E-02		4.46E-05	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					2.07E-02

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of Vegetables from McNairy Groun -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	4.30E-04	9.00E-03		4.78E-02	
Carbon Tetrachloride	5.96E-05	7.00E-04		8.52E-02	
Trichloroethene	1.15E-02	6.00E-03		1.91E+00	
cis-1,2-Dichloroethene	4.38E-03	1.00E-02		4.38E-01	
Pathway Total					2.48E+00

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwat -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	1.54E-01	1.00E+00		1.54E-01	
Arsenic	8.01E-05	3.00E-04		2.67E-01	
Barium	4.90E-03	7.00E-02		6.99E-02	
Beryllium	1.48E-04	2.00E-03		7.38E-02	
Chromium	1.79E-03	3.00E-03		5.98E-01	
Cobalt	1.42E-03	6.00E-02		2.37E-02	
Copper	1.38E-03	4.00E-02		3.44E-02	
Iron	3.28E-01	3.00E-01		1.09E+00	
Lead	1.15E-03	1.00E-07		1.15E+04	
Lithium	1.07E-03	2.00E-02		5.35E-02	
Manganese	2.80E-02	4.60E-02		2.00E-01	
Mercury	1.12E-05	3.00E-04		3.72E-02	
Nickel	2.47E-03	2.00E-02		1.24E-01	
Silica Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium	5.21E-03	7.00E-03		7.45E-01	
Zinc	5.51E-03	3.00E-01		1.84E-02	
1,1-Dichloroethene	7.39E-04	9.00E-03		8.21E-02	
Trichloroethene	1.78E-02	6.00E-03		2.97E+00	
bis(2-Ethylhexyl)phthalate	1.39E-04	2.00E-02		6.97E-03	
cis-1,2-Dichloroethene	2.67E-04	1.00E-02		2.67E-02	
Radon-222					
Technetium-99					
Pathway Total					1.15E+04

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of Vegetables from Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	5.98E-02	7.00E-02		8.54E-01	
Beryllium	1.91E-04	2.00E-03		9.57E-02	
Chromium	2.67E-03	3.00E-03		8.91E-01	
Zinc	6.47E-02	3.00E-01		2.16E-01	
Acenaphthene	1.03E-04	6.00E-02		1.71E-03	
Acenaphthylene	9.01E-05				
Anthracene	1.82E-04	3.00E-01		6.08E-04	
Benz(a)anthracene	2.29E-04				
Benzo(a)pyrene	1.40E-04				
Benzo(b)fluoranthene	3.30E-04				
Benzo(ghi)perylene	2.13E-04				
Benzo(k)fluoranthene	1.63E-04				
Chrysene	3.78E-04				
Dibenz(a,h)anthracene	7.15E-05				
Dibenzofuran	3.55E-05	4.00E-03		8.87E-03	
Fluoranthene	2.52E-04	4.00E-02		6.31E-03	
Fluorene	6.74E-05	4.00E-02		1.69E-03	
Indeno(1,2,3-cd)pyrene	2.29E-04				
PCB-1016	6.83E-05	7.00E-05		9.76E-01	
PCB-1254	2.76E-05	2.00E-05		1.38E+00	
PCB-1260	5.33E-05				
Phenanthrene	3.00E-04				
Pyrene	2.89E-04	3.00E-02		9.64E-03	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of Vegetables from Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Uranium-238 Pathway Total					4.44E+00

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation Household Use of McNairy Ground -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	8.46E-04		9.00E-03	9.40E-02	
Carbon Tetrachloride	2.27E-04		5.71E-04	3.98E-01	
Trichloroethene	3.54E-02		6.00E-03	5.90E+00	
cis-1,2-Dichloroethene	9.38E-03		1.00E-02	9.38E-01	
Pathway Total					7.33E+00

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum					
Arsenic					
Barium			1.43E-04		
Beryllium			5.71E-06		
Chromium			2.29E-06		
Cobalt			5.70E-06		
Copper					
Iron					
Lead			2.86E-04		
Lithium					
Manganese			1.43E-05		
Mercury			8.57E-05		
Nickel					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium					
Zinc					
1,1-Dichloroethene	1.45E-03		9.00E-03	1.61E-01	
Trichloroethene	5.49E-02		6.00E-03	9.15E+00	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	5.72E-04		1.00E-02	5.72E-02	
Radon-222					
Technetium-99					
Pathway Total					9.37E+00

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation While Showering of McNairy Grou -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	7.79E-05		9.00E-03	8.65E-03	
Carbon Tetrachloride	2.09E-05		5.71E-04	3.67E-02	
Trichloroethene	3.26E-03		6.00E-03	5.43E-01	
cis-1,2-Dichloroethene	8.63E-04		1.00E-02	8.63E-02	

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation While Showering of McNairy Grou -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Pathway Total					6.75E-01

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum					
Arsenic					
Barium			1.43E-04		
Beryllium			5.71E-06		
Chromium			2.29E-06		
Cobalt			5.70E-06		
Copper					
Iron					
Lead			2.86E-04		
Lithium					
Manganese			1.43E-05		
Mercury			8.57E-05		
Nickel					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium					
Zinc					
1,1-Dichloroethene	1.34E-04		9.00E-03	1.49E-02	
Trichloroethene	5.06E-03		6.00E-03	8.43E-01	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	5.27E-05		1.00E-02	5.27E-03	
Radon-222					
Technetium-99					
Pathway Total					8.63E-01

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	6.21E-09		5.00E-04	1.24E-05	
Beryllium	1.99E-11		2.00E-05	9.96E-07	
Chromium	2.81E-10		1.00E-04	2.81E-06	
Zinc	3.37E-09				
Acenaphthene	1.37E-06		2.10E-01	6.52E-06	
Acenaphthylene	7.99E-07				
Anthracene	6.88E-07		1.05E+00	6.55E-07	
Benz(a)anthracene	7.63E-08				
Benzo(a)pyrene	1.81E-08				
Benzo(b)fluoranthene	2.25E-07				
Benzo(ghi)perylene	2.23E-11				
Benzo(k)fluoranthene	1.32E-08				
Chrysene	4.36E-07				
Dibenz(a,h)anthracene	2.18E-09				
Dibenzofuran	2.75E-07		1.40E-02	1.96E-05	
Fluoranthene	2.52E-07		1.40E-01	1.80E-06	
Fluorene	3.88E-07		1.40E-01	2.77E-06	
Indeno(1,2,3-cd)pyrene	1.27E-08				

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation of Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
PCB-1016	4.54E-07		2.45E-04	1.85E-03	
PCB-1254	1.64E-07		7.00E-05	2.34E-03	
PCB-1260	3.78E-07				
Phenanthrene	2.96E-11				
Pyrene	2.33E-07		1.05E-01	2.22E-06	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					4.24E-03

----- LOCATION=SWMU 99A PATHWAY=Residential Child Dermal Contact with McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	8.82E-06	9.00E-03		9.80E-04	
Carbon Tetrachloride	5.87E-06	4.55E-04		1.29E-02	
Trichloroethene	6.64E-04	9.00E-04		7.37E-01	
cis-1,2-Dichloroethene	1.10E-04	1.00E-02		1.10E-02	
Pathway Total					7.62E-01

----- LOCATION=SWMU 99A PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	1.03E-03	1.00E-01		1.03E-02	
Arsenic	5.25E-07	1.23E-04		4.26E-03	
Barium	3.27E-05	4.90E-03		6.67E-03	
Beryllium	9.87E-07	2.00E-05		4.93E-02	
Chromium	1.21E-05	6.00E-05		2.01E-01	
Cobalt	8.99E-06	4.80E-02		1.87E-04	
Copper	7.60E-06	1.20E-02		6.33E-04	
Iron	2.21E-03	4.50E-02		4.91E-02	
Lead	7.74E-06	1.50E-08		5.16E+02	
Lithium	7.08E-06	1.60E-02		4.43E-04	
Manganese	1.58E-04	1.84E-03		8.60E-02	
Mercury	4.11E-08	2.10E-05		1.96E-03	
Nickel	1.46E-05	5.40E-03		2.71E-03	
Silica					
Sulfate	1.13E-03				
Tetraoxo-sulfate(1-)					
Vanadium	3.50E-05	7.00E-05		5.00E-01	
Zinc	2.14E-05	6.00E-02		3.57E-04	
1,1-Dichloroethene	1.52E-05	9.00E-03		1.68E-03	
Trichloroethene	1.03E-03	9.00E-04		1.14E+00	
bis(2-Ethylhexyl) phthalate	2.13E-05	3.80E-03		5.61E-03	
cis-1,2-Dichloroethene	6.70E-06	1.00E-02		6.70E-04	
Radon-222					
Technetium-99					
Pathway Total					5.18E+02

Residential Hazard Index Estimates

----- LOCATION-SWMU 99A PATHWAY-Residential Child Dermal Contact with Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	2.57E-03	4.90E-03		5.24E-01	
Beryllium	8.22E-06	2.00E-05		4.11E-01	
Chromium	1.16E-04	6.00E-05		1.93E+00	
Zinc	1.39E-03	6.00E-02		2.32E-02	
Acenaphthene	8.14E-06	1.86E-02		4.38E-04	
Acenaphthylene	6.46E-06				
Anthracene	1.46E-05	2.28E-01		6.41E-05	
Benz (a) anthracene	1.96E-05				
Benzo (a) pyrene	1.21E-05				
Benzo (b) fluoranthene	2.84E-05				
Benzo (ghi) perylene	1.84E-05				
Benzo (k) fluoranthene	1.41E-05				
Chrysene	3.23E-05				
Dibenz (a, h) anthracene	6.18E-06				
Dibenzofuran	3.03E-06	2.00E-03		1.52E-03	
Fluoranthene	2.10E-05	1.24E-02		1.69E-03	
Fluorene	5.40E-06	2.00E-02		2.70E-04	
Indeno (1, 2, 3-cd) pyrene	1.97E-05				
PCB-1016	3.52E-06	6.30E-05		5.59E-02	
PCB-1254	1.42E-06	1.80E-05		7.89E-02	
PCB-1260	2.77E-06				
Phenanthrene	2.45E-05				
Pyrene	2.41E-05	9.30E-03		2.59E-03	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					3.03E+00

----- LOCATION-SWMU 99A PATHWAY-Residential Child Ingestion of McNairy Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	6.88E-04	9.00E-03		7.65E-02	
Carbon Tetrachloride	1.85E-04	7.00E-04		2.65E-01	
Trichloroethene	2.88E-02	6.00E-03		4.80E+00	
cis-1,2-Dichloroethene	7.63E-03	1.00E-02		7.63E-01	
Pathway Total					5.90E+00

----- LOCATION-SWMU 99A PATHWAY-Residential Child Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	7.16E-01	1.00E+00		7.16E-01	
Arsenic	3.64E-04	3.00E-04		1.21E+00	
Barium	2.27E-02	7.00E-02		3.24E-01	
Beryllium	6.85E-04	2.00E-03		3.43E-01	
Chromium	8.39E-03	3.00E-03		2.80E+00	
Cobalt	6.24E-03	6.00E-02		1.04E-01	
Copper	5.28E-03	4.00E-02		1.32E-01	
Iron	1.53E+00	3.00E-01		5.11E+00	
Lead	5.37E-03	1.00E-07		5.37E+04	
Lithium	4.92E-03	2.00E-02		2.46E-01	

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Child Ingestion of RGA Groundwater -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Manganese	1.10E-01	4.60E-02		2.39E+00	
Mercury	2.85E-05	3.00E-04		9.51E-02	
Nickel	1.02E-02	2.00E-02		5.08E-01	
Silica	6.85E-01				
Sulfate	7.84E-01				
Tetraoxo-sulfate (1-)	6.50E-01				
Vanadium	2.43E-02	7.00E-03		3.47E+00	
Zinc	1.49E-02	3.00E-01		4.96E-02	
1,1-Dichloroethene	1.18E-03	9.00E-03		1.31E-01	
Trichloroethene	4.47E-02	6.00E-03		7.45E+00	
bis (2-Ethylhexyl)phthalate	6.32E-04	2.00E-02		3.16E-02	
cis-1,2-Dichloroethene	4.65E-04	1.00E-02		4.65E-02	
Radon-222					
Technetium-99					
Pathway Total					5.38E+04

----- LOCATION=SWMU 99A PATHWAY=Residential Child Ingestion of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	2.75E-03	7.00E-02		3.93E-02	
Beryllium	8.82E-06	2.00E-03		4.41E-03	
Chromium	1.24E-04	3.00E-03		4.15E-02	
Zinc	1.49E-03	3.00E-01		4.98E-03	
Acenaphthene	4.36E-06	6.00E-02		7.27E-05	
Acenaphthylene	3.46E-06				
Anthracene	7.84E-06	3.00E-01		2.61E-05	
Benz(a)anthracene	1.05E-05				
Benzo(a)pyrene	6.47E-06				
Benzo(b)fluoranthene	1.52E-05				
Benzo(ghi)perylene	9.87E-06				
Benzo(k)fluoranthene	7.57E-06				
Chrysene	1.73E-05				
Dibenz(a,h)anthracene	3.31E-06				
Dibenzofuran	1.63E-06	4.00E-03		4.07E-04	
Fluoranthene	1.13E-05	4.00E-02		2.82E-04	
Fluorene	2.90E-06	4.00E-02		7.24E-05	
Indeno(1,2,3-cd)pyrene	1.06E-05				
PCB-1016	3.15E-06	7.00E-05		4.49E-02	
PCB-1254	1.27E-06	2.00E-05		6.35E-02	
PCB-1260	2.48E-06				
Phenanthrene	1.31E-05				
Pyrene	1.29E-05	3.00E-02		4.30E-04	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					2.00E-01

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Child Ingestion of Vegetables from McNairy Groun -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	1.35E-03	9.00E-03		1.50E-01	
Carbon Tetrachloride	1.88E-04	7.00E-04		2.68E-01	
Trichloroethene	3.61E-02	6.00E-03		6.01E+00	
cis-1,2-Dichloroethene	1.38E-02	1.00E-02		1.38E+00	
Pathway Total					7.81E+00

----- LOCATION=SWMU 99A PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum	4.83E-01	1.00E+00		4.83E-01	
Arsenic	2.52E-04	3.00E-04		8.39E-01	
Barium	1.54E-02	7.00E-02		2.20E-01	
Beryllium	4.64E-04	2.00E-03		2.32E-01	
Chromium	5.64E-03	3.00E-03		1.88E+00	
Cobalt	4.47E-03	6.00E-02		7.45E-02	
Copper	4.33E-03	4.00E-02		1.08E-01	
Iron	1.03E+00	3.00E-01		3.44E+00	
Lead	3.62E-03	1.00E-07		3.62E+04	
Lithium	3.37E-03	2.00E-02		1.68E-01	
Manganese	8.80E-02	4.60E-02		6.29E-01	
Mercury	3.51E-05	3.00E-04		1.17E-01	
Nickel	7.77E-03	2.00E-02		3.89E-01	
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium	1.64E-02	7.00E-03		2.34E+00	
Zinc	1.73E-02	3.00E-01		5.78E-02	
1,1-Dichloroethene	2.33E-03	9.00E-03		2.58E-01	
Trichloroethene	5.60E-02	6.00E-03		9.33E+00	
bis (2-Ethylhexyl) phthalate	4.38E-04	2.00E-02		2.19E-02	
cis-1,2-Dichloroethene	8.40E-04	1.00E-02		8.40E-02	
Radon-222					
Technetium-99					
Pathway Total					3.63E+04

----- LOCATION=SWMU 99A PATHWAY=Residential Child Ingestion of Vegetables from Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	1.88E-01	7.00E-02		2.69E+00	
Beryllium	6.02E-04	2.00E-03		3.01E-01	
Chromium	8.41E-03	3.00E-03		2.80E+00	
Zinc	2.03E-01	3.00E-01		6.78E-01	
Acenaphthene	3.23E-04	6.00E-02		5.38E-03	
Acenaphthylene	2.84E-04				
Anthracene	5.74E-04	3.00E-01		1.91E-03	
Benz (a) anthracene	7.22E-04				
Benzo (a) pyrene	4.41E-04				
Benzo (b) fluoranthene	1.04E-03				
Benzo (ghi) perylene	6.70E-04				
Benzo (k) fluoranthene	5.13E-04				
Chrysene	1.19E-03				
Dibenz (a, h) anthracene	2.25E-04				
Dibenzofuran	1.12E-04	4.00E-03		2.79E-02	

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Child Ingestion of Vegetables from Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Fluoranthene	7.94E-04	4.00E-02		1.98E-02	
Fluorene	2.12E-04	4.00E-02		5.30E-03	
Indeno(1,2,3-cd)pyrene	7.19E-04				
PCB-1016	2.15E-04	7.00E-05		3.07E+00	
PCB-1254	8.67E-05	2.00E-05		4.33E+00	
PCB-1260	1.68E-04				
Phenanthrene	9.43E-04				
Pyrene	9.10E-04	3.00E-02		3.03E-02	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					1.40E+01

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation Household Use of McNairy Ground -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	4.08E-03		9.00E-03	4.54E-01	
Carbon Tetrachloride	1.10E-03		5.71E-04	1.92E+00	
Trichloroethene	1.71E-01		6.00E-03	2.85E+01	
cis-1,2-Dichloroethene	4.53E-02		1.00E-02	4.53E+00	
Pathway Total					3.54E+01

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum					
Arsenic					
Barium			1.43E-04		
Beryllium			5.71E-06		
Chromium			2.29E-06		
Cobalt			5.70E-06		
Copper					
Iron					
Lead			2.86E-04		
Lithium					
Manganese			1.43E-05		
Mercury			8.57E-05		
Nickel					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium					
Zinc					
1,1-Dichloroethene	7.01E-03		9.00E-03	7.79E-01	
Trichloroethene	2.65E-01		6.00E-03	4.42E+01	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	2.76E-03		1.00E-02	2.76E-01	
Radon-222					
Technetium-99					

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Pathway Total					4.52E+01

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation While Showering of McNairy Grou -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
1,1-Dichloroethene	3.76E-04		9.00E-03	4.18E-02	
Carbon Tetrachloride	1.01E-04		5.71E-04	1.77E-01	
Trichloroethene	1.57E-02		6.00E-03	2.62E+00	
cis-1,2-Dichloroethene	4.17E-03		1.00E-02	4.17E-01	
Pathway Total					3.26E+00

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Aluminum					
Arsenic					
Barium			1.43E-04		
Beryllium			5.71E-06		
Chromium			2.29E-06		
Cobalt			5.70E-06		
Copper					
Iron					
Lead			2.86E-04		
Lithium					
Manganese			1.43E-05		
Mercury			8.57E-05		
Nickel					
Silica					
Sulfate					
Tetraoxo-sulfate (1-)					
Vanadium					
Zinc					
1,1-Dichloroethene	6.46E-04		9.00E-03	7.18E-02	
Trichloroethene	2.44E-02		6.00E-03	4.07E+00	
bis(2-Ethylhexyl)phthalate			2.00E-02		
cis-1,2-Dichloroethene	2.54E-04		1.00E-02	2.54E-02	
Radon-222					
Technetium-99					
Pathway Total					4.16E+00

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation of Soil -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	6.21E-09		5.00E-04	1.24E-05	
Beryllium	1.99E-11		2.00E-05	9.96E-07	
Chromium	2.81E-10		1.00E-04	2.81E-06	
Zinc	3.37E-09				
Acenaphthene	1.37E-06		2.10E-01	6.52E-06	

Residential Hazard Index Estimates

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation of Soil -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Acenaphthylene	7.99E-07				
Anthracene	6.88E-07		1.05E+00	6.55E-07	
Benz (a) anthracene	7.63E-08				
Benzo (a) pyrene	1.81E-08				
Benzo (b) fluoranthene	2.25E-07				
Benzo (ghi) perylene	2.23E-11				
Benzo (k) fluoranthene	1.32E-08				
Chrysene	4.36E-07				
Dibenz (a,h) anthracene	2.18E-09				
Dibenzofuran	2.75E-07		1.40E-02	1.96E-05	
Fluoranthene	2.52E-07		1.40E-01	1.80E-06	
Fluorene	3.88E-07		1.40E-01	2.77E-06	
Indeno (1,2,3-cd) pyrene	1.27E-08				
PCB-1016	4.54E-07		2.45E-04	1.85E-03	
PCB-1254	1.64E-07		7.00E-05	2.34E-03	
PCB-1260	3.78E-07				
Phenanthrene	2.96E-11				
Pyrene	2.33E-07		1.05E-01	2.22E-06	
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					4.24E-03

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	2.44E-05	4.90E-03		4.98E-03	
Chromium	3.08E-06	6.00E-05		5.13E-02	
Iron	1.11E-04	4.50E-02		2.48E-03	
Manganese	1.29E-05	1.84E-03		7.01E-03	
Silica					
Sulfate	1.27E-03				
Tetraoxo-sulfate(1-)					
Zinc	2.90E-06	6.00E-02		4.84E-05	
Trichloroethene	1.65E-03	9.00E-04		1.84E+00	
Radon-222					
Pathway Total					1.90E+00

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	1.34E-02	7.00E-02		1.92E-01	
Chromium	1.70E-03	3.00E-03		5.65E-01	
Iron	6.14E-02	3.00E-01		2.05E-01	
Manganese	7.11E-03	4.60E-02		1.55E-01	
Silica	2.51E-01				
Sulfate	7.01E-01				
Tetraoxo-sulfate(1-)	3.97E-01				
Zinc	1.60E-03	3.00E-01		5.33E-03	

Residential Hazard Index Estimates

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Ingestion of RGA Groundwater -----
(continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Trichloroethene	5.69E-02	6.00E-03		9.49E+00	
Radon-222					
Pathway Total					1.06E+01

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwat -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	7.00E-03	7.00E-02		9.99E-02	
Chromium	8.76E-04	3.00E-03		2.92E-01	
Iron	3.17E-02	3.00E-01		1.06E-01	
Manganese	4.37E-03	4.60E-02		3.12E-02	
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Zinc	1.43E-03	3.00E-01		4.76E-03	
Trichloroethene	5.48E-02	6.00E-03		9.13E+00	
Radon-222					
Pathway Total					9.66E+00

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium			1.43E-04		
Chromium			2.29E-06		
Iron					
Manganese			1.43E-05		
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Zinc					
Trichloroethene	1.69E-01		6.00E-03	2.81E+01	
Radon-222					
Pathway Total					2.81E+01

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium			1.43E-04		
Chromium			2.29E-06		
Iron					
Manganese			1.43E-05		
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Zinc					
Trichloroethene	1.56E-02		6.00E-03	2.59E+00	
Radon-222					
Pathway Total					2.59E+00

Residential Hazard Index Estimates

----- LOCATION=SWMU 99B PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	4.67E-05	4.90E-03		9.54E-03	
Chromium	5.89E-06	6.00E-05		9.82E-02	
Iron	2.13E-04	4.50E-02		4.74E-03	
Manganese	2.47E-05	1.84E-03		1.34E-02	
Silica Sulfate	2.44E-03				
Tetraoxo-sulfate(1-)					
Zinc	5.56E-06	6.00E-02		9.26E-05	
Trichloroethene	3.17E-03	9.00E-04		3.52E+00	
Radon-222					
Pathway Total					3.64E+00

----- LOCATION=SWMU 99B PATHWAY=Residential Child Ingestion of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	3.24E-02	7.00E-02		4.64E-01	
Chromium	4.09E-03	3.00E-03		1.36E+00	
Iron	1.48E-01	3.00E-01		4.94E-01	
Manganese	1.72E-02	4.60E-02		3.73E-01	
Silica Sulfate	6.06E-01 1.69E+00				
Tetraoxo-sulfate(1-)	9.57E-01				
Zinc	3.86E-03	3.00E-01		1.29E-02	
Trichloroethene	1.37E-01	6.00E-03		2.29E+01	
Radon-222					
Pathway Total					2.56E+01

----- LOCATION=SWMU 99B PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium	2.20E-02	7.00E-02		3.14E-01	
Chromium	2.75E-03	3.00E-03		9.18E-01	
Iron	9.98E-02	3.00E-01		3.33E-01	
Manganese	1.37E-02	4.60E-02		9.81E-02	
Silica Sulfate					
Tetraoxo-sulfate(1-)					
Zinc	4.49E-03	3.00E-01		1.50E-02	
Trichloroethene	1.72E-01	6.00E-03		2.87E+01	
Radon-222					
Pathway Total					3.04E+01

----- LOCATION=SWMU 99B PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium			1.43E-04		
Chromium			2.29E-06		
Iron					
Manganese			1.43E-05		

Residential Hazard Index Estimates

----- LOCATION=SWMU 99B PATHWAY=Residential Child Inhalation Household Use of RGA Groundwa -----
 (continued)

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Silica Sulfate Tetraoxo-sulfate(1-) Zinc Trichloroethene Radon-222 Pathway Total	8.15E-01		6.00E-03	1.36E+02	1.36E+02

----- LOCATION=SWMU 99B PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Noncarcinogenic CDI	Reference Dose	Reference Concentration	Hazard Quotient	Pathway Hazard Index
Barium Chromium Iron Manganese Silica Sulfate Tetraoxo-sulfate(1-) Zinc Trichloroethene Radon-222 Pathway Total	7.51E-02		1.43E-04 2.29E-06 1.43E-05 6.00E-03	1.25E+01	1.25E+01

Residential Excess Lifetime Cancer Risks

----- LOCATION=AOC 204 PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	1.07E-03				
1,1-Dichloroethene	8.60E-06	6.00E-01		5.16E-06	
PCB-1254	2.09E-04	4.44E-01		9.29E-05	
PCB-1260	6.43E-04	4.44E-01		2.86E-04	
Polychlorinated biphenyl	1.42E-03	4.44E-01		6.32E-04	
Tetrachloroethene	5.73E-03	5.20E-02		2.98E-04	
Trichloroethene	2.13E-04	7.33E-02		1.56E-05	
Vinyl Chloride	1.76E-08	1.90E+00		3.35E-08	
cis-1,2-Dichloroethene	1.45E-06				
Pathway Total					1.33E-03

----- LOCATION=AOC 204 PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	6.65E-02				
1,1-Dichloroethene	5.32E-04	6.00E-01		3.19E-04	
PCB-1254	3.33E-04	4.00E-01		1.33E-04	
PCB-1260	3.33E-04	4.00E-01		1.33E-04	
Polychlorinated biphenyl	2.26E-03	4.00E-01		9.05E-04	
Tetrachloroethene	8.53E-03	5.20E-02		4.44E-04	
Trichloroethene	7.34E-03	1.10E-02		8.07E-05	
Vinyl Chloride	1.33E-06	1.90E+00		2.53E-06	
cis-1,2-Dichloroethene	7.98E-05				
Pathway Total					2.02E-03

----- LOCATION=AOC 204 PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	1.00E-01				
1,1-Dichloroethene	8.03E-04	6.00E-01		4.82E-04	
PCB-1254	1.73E-04	4.00E-01		3.46E-04	
PCB-1260	1.72E-04	4.00E-01		3.44E-04	
Polychlorinated biphenyl	1.18E-03	4.00E-01		2.35E-03	
Tetrachloroethene	7.31E-03	5.20E-02		3.80E-04	
Trichloroethene	7.06E-03	1.10E-02		7.76E-05	
Vinyl Chloride	2.94E-06	1.90E+00		5.59E-06	
cis-1,2-Dichloroethene	1.11E-04				
Pathway Total					3.99E-03

----- LOCATION=AOC 204 PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	1.97E-01				
1,1-Dichloroethene	1.58E-03	1.20E+00		1.89E-03	
PCB-1254		4.00E-01			
PCB-1260		4.00E-01			
Polychlorinated biphenyl		4.00E-01			
Tetrachloroethene	2.53E-02	2.00E-03		5.06E-05	
Trichloroethene	2.18E-02	6.00E-03		1.31E-04	

Residential Excess Lifetime Cancer Risks

----- LOCATION=AOC 204 PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Vinyl Chloride	3.95E-06	3.00E-01		1.18E-06	
cis-1,2-Dichloroethene	2.37E-04				
Pathway Total					2.08E-03

----- LOCATION=AOC 204 PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	1.82E-02				
1,1-Dichloroethene	1.45E-04	1.20E+00		1.74E-04	
PCB-1254		4.00E-01			
PCB-1260		4.00E-01			
Polychlorinated biphenyl		4.00E-01			
Tetrachloroethene	2.33E-03	2.00E-03		4.66E-06	
Trichloroethene	2.00E-03	6.00E-03		1.20E-05	
Vinyl Chloride	3.63E-07	3.00E-01		1.09E-07	
cis-1,2-Dichloroethene	2.18E-05				
Pathway Total					1.91E-04

----- LOCATION=AOC 204 PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	3.63E-04				
1,1-Dichloroethene	2.91E-06	6.00E-01		1.74E-06	
PCB-1254	7.06E-05	4.44E-01		3.14E-05	
PCB-1260	2.17E-04	4.44E-01		9.66E-05	
Polychlorinated biphenyl	4.80E-04	4.44E-01		2.13E-04	
Tetrachloroethene	1.94E-03	5.20E-02		1.01E-04	
Trichloroethene	7.20E-05	7.33E-02		5.28E-06	
Vinyl Chloride	5.96E-09	1.90E+00		1.13E-08	
cis-1,2-Dichloroethene	4.90E-07				
Pathway Total					4.49E-04

----- LOCATION=AOC 204 PATHWAY=Residential Child Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	2.83E-02				
1,1-Dichloroethene	2.27E-04	6.00E-01		1.36E-04	
PCB-1254	1.42E-04	4.00E-01		5.67E-05	
PCB-1260	1.42E-04	4.00E-01		5.67E-05	
Polychlorinated biphenyl	9.64E-04	4.00E-01		3.85E-04	
Tetrachloroethene	3.63E-03	5.20E-02		1.89E-04	
Trichloroethene	3.13E-03	1.10E-02		3.44E-05	
Vinyl Chloride	5.67E-07	1.90E+00		1.08E-06	
cis-1,2-Dichloroethene	3.40E-05				
Pathway Total					8.59E-04

Residential Excess Lifetime Cancer Risks

----- LOCATION=AOC 204 PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	5.57E-02				
1,1-Dichloroethene	4.46E-04	6.00E-01		2.67E-04	
PCB-1254	9.60E-05	4.00E-01		1.92E-04	
PCB-1260	9.55E-05	4.00E-01		1.91E-04	
Polychlorinated biphenyl	6.53E-04	4.00E-01		1.31E-03	
Tetrachloroethene	4.06E-03	5.20E-02		2.11E-04	
Trichloroethene	3.92E-03	1.10E-02		4.31E-05	
Vinyl Chloride	1.63E-06	1.90E+00		3.10E-06	
cis-1,2-Dichloroethene	6.14E-05				
Pathway Total					2.21E-03

----- LOCATION=AOC 204 PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	1.68E-01				
1,1-Dichloroethene	1.34E-03	1.20E+00		1.61E-03	
PCB-1254		4.00E-01			
PCB-1260		4.00E-01			
Polychlorinated biphenyl		4.00E-01			
Tetrachloroethene	2.16E-02	2.00E-03		4.31E-05	
Trichloroethene	1.85E-02	6.00E-03		1.11E-04	
Vinyl Chloride	3.36E-06	3.00E-01		1.01E-06	
cis-1,2-Dichloroethene	2.02E-04				
Pathway Total					1.77E-03

----- LOCATION=AOC 204 PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethane	1.55E-02				
1,1-Dichloroethene	1.24E-04	1.20E+00		1.49E-04	
PCB-1254		4.00E-01			
PCB-1260		4.00E-01			
Polychlorinated biphenyl		4.00E-01			
Tetrachloroethene	1.98E-03	2.00E-03		3.97E-06	
Trichloroethene	1.71E-03	6.00E-03		1.02E-05	
Vinyl Chloride	3.10E-07	3.00E-01		9.29E-08	
cis-1,2-Dichloroethene	1.86E-05				
Pathway Total					1.63E-04

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron	3.19E-03				
Tetraxo-sulfate (1-)					
Trichloroethene	1.44E-06	7.33E-02		1.06E-07	
cis-1,2-Dichloroethene	4.11E-05				
Technetium-99					
Uranium-238					
Pathway Total					1.06E-07

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia	1.09E-05				
Fluoride	1.01E-05				
Iron	7.30E-04				
Silica					
Tetraoxo-sulfate(1-)					
Zinc	2.38E-06				
1,1-Dichloroethene	4.30E-08	6.00E-01		2.58E-08	
Pentachlorophenol	1.33E-04	1.20E-01		1.60E-05	
Trichloroethene	6.53E-05	7.33E-02		4.79E-06	
bis(2-Ethylhexyl)phthalate	7.29E-06	7.37E-02		5.37E-07	
cis-1,2-Dichloroethene	7.02E-07				
Technetium-99					
Pathway Total					2.13E-05

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.43E-05				
Anthracene	2.70E-07				
Benz(a)anthracene	4.19E-07	2.35E+00		9.87E-07	
Benzo(a)pyrene	5.82E-07	2.35E+01		1.37E-05	
Benzo(b)fluoranthene	1.19E-07	2.35E+00		2.80E-07	
Benzo(ghi)perylene	3.96E-07				
Chrysene	3.96E-07	2.35E-02		9.32E-09	
Di-n-butylphthalate	1.79E-07				
Di-n-octylphthalate	2.79E-07				
Dibenz(a,h)anthracene	3.03E-07	2.35E+01		7.13E-06	
Fluoranthene	6.36E-07				
Indeno(1,2,3-cd)pyrene	3.73E-07	2.35E+00		8.77E-07	
Pyrene	6.87E-07				
bis(2-Ethylhexyl)phthalate	3.96E-07	7.37E-02		2.92E-08	
Pathway Total					2.30E-05

----- LOCATION=SWMU 193A PATHWAY=Residential Adult External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium					
Anthracene					
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Chrysene					
Di-n-butylphthalate					
Di-n-octylphthalate					
Dibenz(a,h)anthracene					
Fluoranthene					
Indeno(1,2,3-cd)pyrene					
Pyrene					
bis(2-Ethylhexyl)phthalate					
Pathway Total					

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron	1.76E+00				
Tetraoxo-sulfate(1-)	5.47E-01				
Trichloroethene	4.95E-05	1.10E-02		5.45E-07	
cis-1,2-Dichloroethene	2.26E-03				
Technetium-99	8.77E+05	1.40E-12		1.23E-06	
Uranium-238	3.14E+04	6.20E-11		1.95E-06	
Pathway Total					3.72E-06

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia	3.99E-03				
Fluoride	5.59E-03				
Iron	4.02E-01				
Silica	2.53E-01				
Tetraoxo-sulfate(1-)	1.36E+00				
Zinc	1.31E-03				
1,1-Dichloroethene	2.66E-06	6.00E-01		1.60E-06	
Pentachlorophenol	1.13E-04	1.20E-01		1.35E-05	
Trichloroethene	2.25E-03	1.10E-02		2.47E-05	
bis(2-Ethylhexyl)phthalate	1.72E-04	1.40E-02		2.40E-06	
cis-1,2-Dichloroethene	3.87E-05				
Technetium-99	4.58E+06	1.40E-12		6.41E-06	
Pathway Total					4.87E-05

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	8.14E-06				
Anthracene	7.72E-08				
Benz(a)anthracene	1.20E-07	7.30E-01		8.74E-08	
Benzo(a)pyrene	1.66E-07	7.30E+00		1.21E-06	
Benzo(b)fluoranthene	3.39E-08	7.30E-01		2.48E-08	
Benzo(ghi)perylene	1.13E-07				
Chrysene	1.13E-07	7.30E-03		8.26E-10	
Di-n-butylphthalate	5.12E-08				
Di-n-octylphthalate	7.98E-08				
Dibenz(a,h)anthracene	8.65E-08	7.30E+00		6.31E-07	
Fluoranthene	1.82E-07				
Indeno(1,2,3-cd)pyrene	1.06E-07	7.30E-01		7.77E-08	
Pyrene	1.96E-07				
bis(2-Ethylhexyl)phthalate	1.13E-07	1.40E-02		1.58E-09	
Pathway Total					2.04E-06

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of Vegetables from McNairy Groun -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron	9.09E-01				
Tetraoxo-sulfate(1-)					

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of Vegetables from McNairy Groun -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	4.76E-05	1.10E-02		5.24E-07	
cis-1,2-Dichloroethene	3.13E-03				
Technetium-99	2.61E+08	1.40E-12		3.65E-04	
Uranium-238	1.63E+04	6.20E-11		1.01E-06	
Pathway Total					3.66E-04

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwat -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia	4.59E-02				
Fluoride					
Iron	2.08E-01				
Silica					
Tetraoxo-sulfate(1-)					
Zinc	1.17E-03				
1,1-Dichloroethene	4.02E-06	6.00E-01		2.41E-06	
Pentachlorophenol	5.86E-05	1.20E-01		7.04E-06	
Trichloroethene	2.16E-03	1.10E-02		2.38E-05	
bis(2-Ethylhexyl)phthalate	9.14E-05	1.40E-02		1.28E-06	
cis-1,2-Dichloroethene	5.35E-05				
Technetium-99	1.36E+09	1.40E-12		1.91E-03	
Pathway Total					1.94E-03

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Ingestion of Vegetables from Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.69E-03				
Anthracene	1.73E-05				
Benz (a) anthracene	2.52E-05	7.30E-01		1.84E-05	
Benzo (a) pyrene	3.48E-05	7.30E+00		2.54E-04	
Benzo (b) fluoranthene	7.10E-06	7.30E-01		5.18E-06	
Benzo (ghi)perylene	2.36E-05				
Chrysene	2.38E-05	7.30E-03		1.74E-07	
Di-n-butylphthalate	1.11E-05				
Di-n-octylphthalate	1.66E-05				
Dibenz (a, h) anthracene	1.80E-05	7.30E+00		1.31E-04	
Fluoranthene	3.93E-05				
Indeno (1,2,3-cd) pyrene	2.22E-05	7.30E-01		1.62E-05	
Pyrene	4.25E-05				
bis(2-Ethylhexyl)phthalate	2.45E-05	1.40E-02		3.43E-07	
Pathway Total					4.26E-04

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation Household Use of McNairy Ground -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron					
Tetraoxo-sulfate(1-)					
Trichloroethene	1.47E-04	6.00E-03		8.81E-07	

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation Household Use of McNairy Ground -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
cis-1,2-Dichloroethene	6.71E-03				
Technetium-99		2.89E-12			
Uranium-238		1.24E-08			
Pathway Total					8.81E-07

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia					
Fluoride					
Iron					
Silica					
Tetraoxo-sulfate(1-)					
Zinc					
1,1-Dichloroethene	7.89E-06	1.20E+00		9.47E-06	
Pentachlorophenol					
Trichloroethene	6.67E-03	6.00E-03		4.00E-05	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	1.15E-04				
Technetium-99		2.89E-12			
Pathway Total					4.95E-05

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation While Showering of McNairy Grou -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron					
Tetraoxo-sulfate(1-)					
Trichloroethene	1.35E-05	6.00E-03		8.12E-08	
cis-1,2-Dichloroethene	6.18E-04				
Technetium-99		2.89E-12			
Uranium-238		1.24E-08			
Pathway Total					8.12E-08

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia					
Fluoride					
Iron					
Silica					
Tetraoxo-sulfate(1-)					
Zinc					
1,1-Dichloroethene	7.27E-07	1.20E+00		8.72E-07	
Pentachlorophenol					
Trichloroethene	6.14E-04	6.00E-03		3.68E-06	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	1.06E-05				
Technetium-99		2.89E-12			

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Pathway Total					4.56E-06

----- LOCATION=SWMU 193A PATHWAY=Residential Adult Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.78E-10		1.20E+01	2.13E-09	
Anthracene	6.54E-08				
Benz(a)anthracene	8.39E-09		8.80E-02	7.38E-10	
Benzo(a)pyrene	4.49E-09		8.80E-01	3.95E-09	
Benzo(b)fluoranthene	4.84E-09		8.80E-02	4.26E-10	
Benzo(ghi)perylene	2.47E-12				
Chrysene	2.75E-08		8.80E-04	2.42E-11	
Di-n-butylphthalate	4.19E-09				
Di-n-octylphthalate	8.82E-10				
Dibenz(a,h)anthracene	5.50E-10		8.80E-01	4.84E-10	
Fluoranthene	3.93E-08				
Indeno(1,2,3-cd)pyrene	1.23E-09		8.80E-02	1.09E-10	
Pyrene	3.42E-08				
bis(2-Ethylhexyl)phthalate	3.48E-10				
Pathway Total					7.86E-09

----- LOCATION=SWMU 193A PATHWAY=Residential Child Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron	1.08E-03				
Tetraoxo-sulfate(1-)					
Trichloroethene	4.86E-07	7.33E-02		3.57E-08	
cis-1,2-Dichloroethene	1.39E-05				
Technetium-99					
Uranium-238					
Pathway Total					3.57E-08

----- LOCATION=SWMU 193A PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia	3.67E-06				
Fluoride	3.43E-06				
Iron	2.47E-04				
Silica					
Tetraoxo-sulfate(1-)					
Zinc	8.05E-07				
1,1-Dichloroethene	1.45E-08	6.00E-01		8.72E-09	
Pentachlorophenol	4.49E-05	1.20E-01		5.39E-06	
Trichloroethene	2.21E-05	7.33E-02		1.62E-06	
bis(2-Ethylhexyl)phthalate	2.47E-06	7.37E-02		1.82E-07	
cis-1,2-Dichloroethene	2.37E-07				
Technetium-99					
Pathway Total					7.20E-06

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Residential Child Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.29E-05				
Anthracene	2.45E-07				
Benz (a) anthracene	3.81E-07	2.35E+00		8.96E-07	
Benzo (a) pyrene	5.29E-07	2.35E+01		1.24E-05	
Benzo (b) fluoranthene	1.08E-07	2.35E+00		2.54E-07	
Benzo (ghi) perylene	3.59E-07				
Chrysene	3.59E-07	2.35E-02		8.46E-09	
Di-n-butylphthalate	1.63E-07				
Di-n-octylphthalate	2.54E-07				
Dibenz (a, h) anthracene	2.75E-07	2.35E+01		6.47E-06	
Fluoranthene	5.77E-07				
Indeno (1, 2, 3-cd) pyrene	3.38E-07	2.35E+00		7.97E-07	
Pyrene	6.24E-07				
bis (2-Ethylhexyl) phthalate	3.59E-07	7.37E-02		2.65E-08	
Pathway Total					2.09E-05

----- LOCATION=SWMU 193A PATHWAY=Residential Child External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium					
Anthracene					
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Chrysene					
Di-n-butylphthalate					
Di-n-octylphthalate					
Dibenz (a, h) anthracene					
Fluoranthene					
Indeno (1, 2, 3-cd) pyrene					
Pyrene					
bis (2-Ethylhexyl) phthalate					
Pathway Total					

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron	7.49E-01				
Tetraoxo-sulfate (1-)	2.33E-01				
Trichloroethene	2.11E-05	1.10E-02		2.32E-07	
cis-1,2-Dichloroethene	9.64E-04				
Technetium-99	7.74E+04	1.40E-12		1.08E-07	
Uranium-238	2.77E+03	6.20E-11		1.72E-07	
Pathway Total					5.12E-07

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia	1.70E-03				
Fluoride	2.38E-03				
Iron	1.71E-01				
Silica	1.08E-01				
Tetraoxo-sulfate(1-)	5.78E-01				
Zinc	5.59E-04				
1,1-Dichloroethene	1.13E-06	6.00E-01		6.80E-07	
Pentachlorophenol	4.80E-05	1.20E-01		5.76E-06	
Trichloroethene	9.58E-04	1.10E-02		1.05E-05	
bis(2-Ethylhexyl)phthalate	7.32E-05	1.40E-02		1.02E-06	
cis-1,2-Dichloroethene	1.65E-05				
Technetium-99	4.04E+05	1.40E-12		5.66E-07	
Pathway Total					1.86E-05

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.39E-05				
Anthracene	1.32E-07				
Benz(a)anthracene	2.04E-07	7.30E-01		1.49E-07	
Benzo(a)pyrene	2.83E-07	7.30E+00		2.07E-06	
Benzo(b)fluoranthene	5.78E-08	7.30E-01		4.22E-08	
Benzo(ghi)perylene	1.93E-07				
Chrysene	1.93E-07	7.30E-03		1.41E-09	
Di-n-butylphthalate	8.73E-08				
Di-n-octylphthalate	1.36E-07				
Dibenz(a,h)anthracene	1.47E-07	7.30E+00		1.08E-06	
Fluoranthene	3.09E-07				
Indeno(1,2,3-cd)pyrene	1.81E-07	7.30E-01		1.32E-07	
Pyrene	3.34E-07				
bis(2-Ethylhexyl)phthalate	1.93E-07	1.40E-02		2.70E-09	
Pathway Total					3.47E-06

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of Vegetables from McNairy Groun -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron	5.05E-01				
Tetraoxo-sulfate(1-)					
Trichloroethene	2.64E-05	1.10E-02		2.91E-07	
cis-1,2-Dichloroethene	1.74E-03				
Technetium-99	3.00E+07	1.40E-12		4.20E-05	
Uranium-238	1.88E+03	6.20E-11		1.16E-07	
Pathway Total					4.24E-05

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia	2.55E-02				
Fluoride					

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron	1.15E-01				
Silica					
Tetraoxo-sulfate (1-)					
Zinc	6.51E-04				
1,1-Dichloroethene	2.23E-06	6.00E-01		1.34E-06	
Pentachlorophenol	3.26E-05	1.20E-01		3.91E-06	
Trichloroethene	1.20E-03	1.10E-02		1.32E-05	
bis(2-Ethylhexyl)phthalate	5.07E-05	1.40E-02		7.10E-07	
cis-1,2-Dichloroethene	2.97E-05				
Technetium-99	1.57E+08	1.40E-12		2.19E-04	
Pathway Total					2.38E-04

----- LOCATION=SWMU 193A PATHWAY=Residential Child Ingestion of Vegetables from Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	9.38E-04				
Anthracene	9.63E-06				
Benz(a)anthracene	1.40E-05	7.30E-01		1.02E-05	
Benzo(a)pyrene	1.93E-05	7.30E+00		1.41E-04	
Benzo(b)fluoranthene	3.94E-06	7.30E-01		2.88E-06	
Benzo(ghi)perylene	1.31E-05				
Chrysene	1.32E-05	7.30E-03		9.65E-08	
Di-n-butylphthalate	6.15E-06				
Di-n-octylphthalate	9.20E-06				
Dibenz(a,h)anthracene	1.00E-05	7.30E+00		7.30E-05	
Fluoranthene	2.18E-05				
Indeno(1,2,3-cd)pyrene	1.23E-05	7.30E-01		8.99E-06	
Pyrene	2.36E-05				
bis(2-Ethylhexyl)phthalate	1.36E-05	1.40E-02		1.90E-07	
Pathway Total					2.36E-04

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation Household Use of McNairy Ground -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron					
Tetraoxo-sulfate(1-)					
Trichloroethene	1.25E-04	6.00E-03		7.51E-07	
cis-1,2-Dichloroethene	5.72E-03				
Technetium-99		2.89E-12			
Uranium-238		1.24E-08			
Pathway Total					7.51E-07

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia					
Fluoride					
Iron					

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Silica					
Tetraoxo-sulfate(1-)					
Zinc					
1,1-Dichloroethene	6.72E-06	1.20E+00		8.07E-06	
Pentachlorophenol					
Trichloroethene	5.68E-03	6.00E-03		3.41E-05	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	9.77E-05				
Technetium-99		2.89E-12			
Pathway Total					4.22E-05

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation While Showering of McNairy Grou -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Iron					
Tetraoxo-sulfate(1-)					
Trichloroethene	1.15E-05	6.00E-03		6.92E-08	
cis-1,2-Dichloroethene	5.26E-04				
Technetium-99		2.89E-12			
Uranium-238		1.24E-08			
Pathway Total					6.92E-08

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Ammonia					
Fluoride					
Iron					
Silica					
Tetraoxo-sulfate(1-)					
Zinc					
1,1-Dichloroethene	6.19E-07	1.20E+00		7.43E-07	
Pentachlorophenol					
Trichloroethene	5.23E-04	6.00E-03		3.14E-06	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	8.99E-06				
Technetium-99		2.89E-12			
Pathway Total					3.88E-06

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	3.13E-11		1.20E+01	3.76E-10	
Anthracene	1.15E-08				
Benz(a)anthracene	1.48E-09		8.80E-02	1.30E-10	
Benzo(a)pyrene	7.92E-10		8.80E-01	6.97E-10	
Benzo(b)fluoranthene	8.55E-10		8.80E-02	7.52E-11	
Benzo(ghi)perylene	4.35E-13				

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193A PATHWAY=Residential Child Inhalation of Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chrysene	4.85E-09		8.80E-04	4.27E-12	
Di-n-butylphthalate	7.40E-10				
Di-n-octylphthalate	1.56E-10				
Dibenz (a, h) anthracene	9.70E-11		8.80E-01	8.54E-11	
Fluoranthene	6.93E-09				
Indeno (1, 2, 3-cd) pyrene	2.18E-10		8.80E-02	1.92E-11	
Pyrene	6.03E-09				
bis (2-Ethylhexyl) phthalate	6.15E-11				
Pathway Total					1.39E-09

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	5.02E-06	7.33E-02		3.68E-07	
cis-1,2-Dichloroethene	5.56E-06				
Pathway Total					3.68E-07

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	3.48E-07	6.00E-01		2.09E-07	
Acetone	4.54E-07				
Carbon Tetrachloride	2.92E-06	2.00E-01		5.84E-07	
Di-n-butylphthalate	2.82E-05				
Trichloroethene	1.93E-04	7.33E-02		1.42E-05	
bis (2-Ethylhexyl) phthalate	5.70E-06	7.37E-02		4.20E-07	
cis-1,2-Dichloroethene	1.98E-06				
Technetium-99					
Pathway Total					1.54E-05

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	1.83E-06	4.30E+02		7.86E-04	
Chromium	1.03E-04				
Vanadium	7.57E-05				
Pathway Total					7.86E-04

----- LOCATION=SWMU 193B PATHWAY=Residential Adult External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium					
Chromium					
Vanadium					

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Residential Adult External Exposure to Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Pathway Total					

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	1.73E-04	1.10E-02		1.90E-06	
cis-1,2-Dichloroethene	3.06E-04				
Pathway Total					1.90E-06

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	2.15E-05	6.00E-01		1.29E-05	
Acetone	4.39E-04				
Carbon Tetrachloride	7.32E-05	1.30E-01		9.51E-06	
Di-n-butylphthalate	1.35E-04				
Trichloroethene	6.65E-03	1.10E-02		7.32E-05	
bis(2-Ethylhexyl)phthalate	1.34E-04	1.40E-02		1.88E-06	
cis-1,2-Dichloroethene	1.09E-04				
Technetium-99	6.50E+05	1.40E-12		9.11E-07	
Pathway Total					9.84E-05

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	1.04E-06	4.30E+00		4.49E-06	
Chromium	5.90E-05				
Vanadium	4.32E-05				
Pathway Total					4.49E-06

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of Vegetables from McNairy Groun -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	1.66E-04	1.10E-02		1.83E-06	
cis-1,2-Dichloroethene	4.24E-04				
Pathway Total					1.83E-06

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwat -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	3.25E-05	6.00E-01		1.95E-05	
Acetone	6.87E-03				
Carbon Tetrachloride	5.69E-05	1.30E-01		7.39E-06	
Di-n-butylphthalate	7.19E-05				
Trichloroethene	6.40E-03	1.10E-02		7.04E-05	
bis(2-Ethylhexyl)phthalate	7.14E-05	1.40E-02		9.99E-07	
cis-1,2-Dichloroethene	1.51E-04				
Technetium-99	1.93E+08	1.40E-12		2.71E-04	
Pathway Total					3.69E-04

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Ingestion of Vegetables from Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	2.19E-04	4.30E+00		9.41E-04	
Chromium	1.22E-02				
Vanadium	9.02E-03				
Pathway Total					9.41E-04

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Inhalation Household Use of McNairy Ground -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	5.13E-04	6.00E-03		3.08E-06	
cis-1,2-Dichloroethene	9.08E-04				
Pathway Total					3.08E-06

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	6.39E-05	1.20E+00		7.67E-05	
Acetone	1.30E-03				
Carbon Tetrachloride	2.17E-04	5.30E-02		1.15E-05	
Di-n-butylphthalate					
Trichloroethene	1.97E-02	6.00E-03		1.18E-04	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	3.24E-04				
Technetium-99		2.89E-12			
Pathway Total					2.07E-04

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Inhalation While Showering of McNairy Grou -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	4.72E-05	6.00E-03		2.83E-07	
cis-1,2-Dichloroethene	8.36E-05				
Pathway Total					2.83E-07

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	5.88E-06	1.20E+00		7.06E-06	
Acetone	1.20E-04				
Carbon Tetrachloride	2.00E-05	5.30E-02		1.06E-06	
Di-n-butylphthalate					
Trichloroethene	1.82E-03	6.00E-03		1.09E-05	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	2.99E-05				
Technetium-99		2.89E-12			
Pathway Total					1.90E-05

----- LOCATION=SWMU 193B PATHWAY=Residential Adult Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	2.28E-11		2.40E+00	5.47E-11	
Chromium	1.29E-09		1.20E+01	1.54E-08	
Vanadium	9.43E-10				
Pathway Total					1.55E-08

----- LOCATION=SWMU 193B PATHWAY=Residential Child Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	1.70E-06	7.33E-02		1.25E-07	
cis-1,2-Dichloroethene	1.88E-06				
Pathway Total					1.25E-07

----- LOCATION=SWMU 193B PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	1.18E-07	6.00E-01		7.06E-08	
Acetone	1.53E-07				
Carbon Tetrachloride	9.88E-07	2.00E-01		1.98E-07	
Di-n-butylphthalate	9.53E-06				
Trichloroethene	6.53E-05	7.33E-02		4.79E-06	
bis(2-Ethylhexyl)phthalate	1.93E-06	7.37E-02		1.42E-07	
cis-1,2-Dichloroethene	6.71E-07				
Technetium-99					
Pathway Total					5.20E-06

----- LOCATION=SWMU 193B PATHWAY=Residential Child Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	1.66E-06	4.30E+02		7.14E-04	
Chromium	9.38E-05				
Vanadium	6.87E-05				
Pathway Total					7.14E-04

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Residential Child External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium					
Chromium					
Vanadium					
Pathway Total					

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	7.37E-05	1.10E-02		8.11E-07	
cis-1,2-Dichloroethene	1.30E-04				
Pathway Total					8.11E-07

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	9.18E-06	6.00E-01		5.51E-06	
Acetone	1.87E-04				
Carbon Tetrachloride	3.12E-05	1.30E-01		4.05E-06	
Di-n-butylphthalate	5.76E-05				
Trichloroethene	2.83E-03	1.10E-02		3.12E-05	
bis(2-Ethylhexyl)phthalate	5.72E-05	1.40E-02		8.00E-07	
cis-1,2-Dichloroethene	4.66E-05				
Technetium-99	5.74E+04	1.40E-12		8.03E-08	
Pathway Total					4.16E-05

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	1.78E-06	4.30E+00		7.65E-06	
Chromium	1.01E-04				
Vanadium	7.37E-05				
Pathway Total					7.65E-06

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of Vegetables from McNairy Groun -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	9.23E-05	1.10E-02		1.02E-06	
cis-1,2-Dichloroethene	2.35E-04				
Pathway Total					1.02E-06

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	1.80E-05	6.00E-01		1.08E-05	
Acetone	3.81E-03				
Carbon Tetrachloride	3.16E-05	1.30E-01		4.11E-06	
Di-n-butylphthalate	3.99E-05				
Trichloroethene	3.55E-03	1.10E-02		3.91E-05	
bis(2-Ethylhexyl)phthalate	3.96E-05	1.40E-02		5.55E-07	
cis-1,2-Dichloroethene	8.41E-05				
Technetium-99	2.22E+07	1.40E-12		3.11E-05	
Pathway Total					8.57E-05

----- LOCATION=SWMU 193B PATHWAY=Residential Child Ingestion of Vegetables from Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	1.21E-04	4.30E+00		5.22E-04	
Chromium	6.80E-03				
Vanadium	5.01E-03				
Pathway Total					5.22E-04

----- LOCATION=SWMU 193B PATHWAY=Residential Child Inhalation Household Use of McNairy Ground -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	4.37E-04	6.00E-03		2.62E-06	
cis-1,2-Dichloroethene	7.73E-04				
Pathway Total					2.62E-06

----- LOCATION=SWMU 193B PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	5.44E-05	1.20E+00		6.53E-05	
Acetone	1.11E-03				
Carbon Tetrachloride	1.85E-04	5.30E-02		9.80E-06	
Di-n-butylphthalate					
Trichloroethene	1.68E-02	6.00E-03		1.01E-04	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	2.76E-04				
Technetium-99		2.89E-12			
Pathway Total					1.76E-04

----- LOCATION=SWMU 193B PATHWAY=Residential Child Inhalation While Showering of McNairy Grou -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	4.02E-05	6.00E-03		2.41E-07	
cis-1,2-Dichloroethene	7.12E-05				
Pathway Total					2.41E-07

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193B PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	5.01E-06	1.20E+00		6.01E-06	
Acetone	1.02E-04				
Carbon Tetrachloride	1.70E-05	5.30E-02		9.02E-07	
Di-n-butylphthalate					
Trichloroethene	1.55E-03	6.00E-03		9.29E-06	
bis(2-Ethylhexyl) phthalate					
cis-1,2-Dichloroethene	2.54E-05				
Technetium-99		2.89E-12			
Pathway Total					1.62E-05

----- LOCATION=SWMU 193B PATHWAY=Residential Child Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium	4.02E-12		2.40E+00	9.65E-12	
Chromium	2.27E-10		1.20E+01	2.72E-09	
Vanadium	1.66E-10				
Pathway Total					2.73E-09

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	9.23E-04				
Antimony	2.76E-06				
Arsenic	2.95E-07	3.66E+00		1.08E-06	
Barium	5.90E-06				
Beryllium	2.68E-07	4.30E+02		1.15E-04	
Cadmium	8.54E-07				
Chromium	3.46E-06				
Cobalt	1.28E-06				
Iron	1.42E-03				
Lead	6.04E-06				
Manganese	3.29E-05				
Mercury	4.83E-09				
Molybdenum	1.11E-06				
Nickel	1.30E-06				
Silica					
Silver	8.02E-07				
Tetraoxo-sulfate(1-)					
Thallium	2.97E-06				
Uranium	1.55E-07				
Vanadium	2.02E-05				
Zinc	4.91E-06				
1,1,2-Trichloroethane	5.07E-07	7.04E-02		3.57E-08	
1,1-Dichloroethene	5.37E-07	6.00E-01		3.22E-07	
1,2-Dichloroethane	3.20E-07	9.10E-02		2.91E-08	
Benzene	1.27E-06	2.99E-02		3.79E-08	
Bromodichloromethane	3.50E-07	6.33E-02		2.22E-08	
Carbon Tetrachloride	1.33E-06	2.00E-01		2.66E-07	
Chloroform	5.37E-07	3.05E-02		1.64E-08	
Ethylbenzene	4.47E-06				
Polychlorinated biphenyl	8.36E-07	4.44E-01		3.72E-07	
Tetrachloroethene	2.23E-05	5.20E-02		1.16E-06	
Trichloroethene	4.76E-07	7.33E-02		3.49E-08	

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Dermal Contact with McNairy Groundwater -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Vinyl Chloride	1.62E-06	1.90E+00		3.08E-06	
Xylene	1.25E-05				
cis-1,2-Dichloroethene	1.21E-06				
trans-1,2-Dichloroethene	1.29E-07				
Radon-222					
Pathway Total					1.22E-04

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	1.45E-05				
Trichloroethene	6.26E-05	7.33E-02		4.59E-06	
Pathway Total					4.59E-06

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	6.37E-06				
Lead	2.90E-05				
Zinc	4.85E-05				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Residential Adult External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium					
Lead					
Zinc					
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	5.08E-01				
Antimony	1.52E-03				
Arsenic	1.62E-04	1.50E+00		2.44E-04	
Barium	3.25E-03				
Beryllium	1.48E-04	4.30E+00		6.35E-04	
Cadmium	4.70E-04				
Chromium	1.91E-03				
Cobalt	7.07E-04				
Iron	7.83E-01				
Lead	3.33E-03				
Manganese	1.81E-02				

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of McNairy Groundwater -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Mercury	2.66E-06				
Molybdenum	6.14E-04				
Nickel	7.15E-04				
Silica	1.07E-01				
Silver	4.42E-04				
Tetraoxo-sulfate(1-)	8.77E-02				
Thallium	1.64E-03				
Uranium	8.52E-05				
Vanadium	1.11E-02				
Zinc	2.70E-03				
1,1,2-Trichloroethane	3.33E-05	5.70E-02		1.90E-06	
1,1-Dichloroethene	3.33E-05	6.00E-01		2.00E-05	
1,2-Dichloroethane	3.33E-05	9.10E-02		3.03E-06	
Benzene	3.33E-05	2.90E-02		9.65E-07	
Bromodichloromethane	3.33E-05	6.20E-02		2.06E-06	
Carbon Tetrachloride	3.33E-05	1.30E-01		4.32E-06	
Chloroform	3.33E-05	6.10E-03		2.03E-07	
Ethylbenzene	3.33E-05				
Polychlorinated biphenyl	1.33E-06	4.00E-01		5.32E-07	
Tetrachloroethene	3.33E-05	5.20E-02		1.73E-06	
Trichloroethene	1.64E-05	1.10E-02		1.80E-07	
Vinyl Chloride	1.22E-04	1.90E+00		2.32E-04	
Xylene	7.25E-05				
cis-1,2-Dichloroethene	6.65E-05				
trans-1,2-Dichloroethene	6.65E-05				
Radon-222	3.74E+06				
Pathway Total					1.15E-03

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	7.48E-03				
Trichloroethene	2.16E-03	1.10E-02		2.37E-05	
Pathway Total					2.37E-05

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	3.64E-06				
Lead	1.66E-05				
Zinc	2.77E-05				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Ingestion of Vegetables from McNairy Groun -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	2.63E-01				
Antimony	8.07E-04				

Residential Excess Lifetime Cancer Risks

----- LOCATION-SWMU 193C PATHWAY-Residential Adult Ingestion of Vegetables from McNairy Groun -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Arsenic	8.62E-05	1.50E+00		1.29E-04	
Barium	1.69E-03				
Beryllium	7.68E-05	4.30E+00		3.30E-04	
Cadmium	3.35E-04				
Chromium	9.84E-04				
Cobalt	3.89E-04				
Iron	4.05E-01				
Lead	1.72E-03				
Manganese	1.11E-02				
Mercury	2.51E-06				
Molybdenum	3.87E-04				
Nickel	4.20E-04				
Silica					
Silver	2.28E-04				
Tetraoxo-sulfate (1-)					
Thallium	8.47E-04				
Uranium	4.40E-05				
Vanadium	5.76E-03				
Zinc	2.41E-03				
1,1,2-Trichloroethane	4.24E-05	5.70E-02		2.42E-06	
1,1-Dichloroethene	5.02E-05	6.00E-01		3.01E-05	
1,2-Dichloroethane	6.65E-05	9.10E-02		6.05E-06	
Benzene	3.93E-05	2.90E-02		1.14E-06	
Bromodichloromethane	3.93E-05	6.20E-02		2.44E-06	
Carbon Tetrachloride	2.59E-05	1.30E-01		3.36E-06	
Chloroform	4.24E-05	6.10E-03		2.59E-07	
Ethylbenzene	2.30E-05				
Polychlorinated biphenyl	6.92E-07	4.00E-01		1.38E-06	
Tetrachloroethene	2.85E-05	5.20E-02		1.48E-06	
Trichloroethene	1.58E-05	1.10E-02		1.74E-07	
Vinyl Chloride	2.70E-04	1.90E+00		5.13E-04	
Xylene	4.71E-05				
cis-1,2-Dichloroethene	9.21E-05				
trans-1,2-Dichloroethene	4.19E-04				
Radon-222	1.24E+05				
Pathway Total					1.02E-03

----- LOCATION-SWMU 193C PATHWAY-Residential Adult Ingestion of Vegetables from RGA Groundwat -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	4.71E-02				
Trichloroethene	2.07E-03	1.10E-02		2.28E-05	
Pathway Total					2.28E-05

----- LOCATION-SWMU 193C PATHWAY-Residential Adult Ingestion of Vegetables from Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	7.55E-04				
Lead	3.45E-03				
Zinc	1.16E-02				
Pathway Total					

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation Household Use of McNairy Ground -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Antimony					
Arsenic		5.00E+01			
Barium					
Beryllium		8.40E+00			
Cadmium		6.10E+00			
Chromium		4.10E+01			
Cobalt					
Iron					
Lead					
Manganese					
Mercury					
Molybdenum					
Nickel					
Silica					
Silver					
Tetraoxo-sulfate(1-)					
Thallium					
Uranium					
Vanadium					
Zinc					
1,1,2-Trichloroethane	9.87E-05	5.70E-02		5.62E-06	
1,1-Dichloroethene	9.87E-05	1.20E+00		1.18E-04	
1,2-Dichloroethane	9.87E-05	9.10E-02		8.98E-06	
Benzene	9.87E-05	2.90E-02		2.86E-06	
Bromodichloromethane	9.87E-05				
Carbon Tetrachloride	9.87E-05	5.30E-02		5.23E-06	
Chloroform	9.87E-05	8.10E-02		7.99E-06	
Ethylbenzene	9.87E-05				
Polychlorinated biphenyl		4.00E-01			
Tetrachloroethene	9.87E-05	2.00E-03		1.97E-07	
Trichloroethene	4.87E-05	6.00E-03		2.92E-07	
Vinyl Chloride	3.63E-04	3.00E-01		1.09E-04	
Xylene	2.15E-04				
cis-1,2-Dichloroethene	1.97E-04				
trans-1,2-Dichloroethene	1.97E-04				
Radon-222	1.24E+06	7.57E-12		9.42E-06	
Pathway Total					2.68E-04

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	2.22E-02				
Trichloroethene	6.39E-03	6.00E-03		3.84E-05	
Pathway Total					3.84E-05

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation While Showering of McNairy Grou -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Antimony					
Arsenic		5.00E+01			
Barium					

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation While Showering of McNairy Grou -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Beryllium		8.40E+00			
Cadmium		6.10E+00			
Chromium		4.10E+01			
Cobalt					
Iron					
Lead					
Manganese					
Mercury					
Molybdenum					
Nickel					
Silica					
Silver					
Tetraoxo-sulfate(1-)					
Thallium					
Uranium					
Vanadium					
Zinc					
1,1,2-Trichloroethane	9.08E-06	5.70E-02		5.18E-07	
1,1-Dichloroethene	9.08E-06	1.20E+00		1.09E-05	
1,2-Dichloroethane	9.08E-06	9.10E-02		8.27E-07	
Benzene	9.08E-06	2.90E-02		2.63E-07	
Bromodichloromethane	9.08E-06				
Carbon Tetrachloride	9.08E-06	5.30E-02		4.81E-07	
Chloroform	9.08E-06	8.10E-02		7.36E-07	
Ethylbenzene	9.08E-06				
Polychlorinated biphenyl		4.00E-01			
Tetrachloroethene	9.08E-06	2.00E-03		1.82E-08	
Trichloroethene	4.48E-06	6.00E-03		2.69E-08	
Vinyl Chloride	3.34E-05	3.00E-01		1.00E-05	
Xylene	1.98E-05				
cis-1,2-Dichloroethene	1.82E-05				
trans-1,2-Dichloroethene	1.82E-05				
Radon-222	1.16E+07	7.57E-12		8.81E-05	
Pathway Total					1.12E-04

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	2.04E-03				
Trichloroethene	5.89E-04	6.00E-03		3.53E-06	
Pathway Total					3.53E-06

----- LOCATION=SWMU 193C PATHWAY=Residential Adult Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	7.93E-11		1.20E+01	9.52E-10	
Lead	3.62E-10				
Zinc	6.04E-10				
Pathway Total					9.52E-10

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Residential Child Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	3.12E-04				
Antimony	9.33E-07				
Arsenic	9.97E-08	3.66E+00		3.65E-07	
Barium	1.99E-06				
Beryllium	9.06E-08	4.30E+02		3.90E-05	
Cadmium	2.89E-07				
Chromium	1.17E-06				
Cobalt	4.34E-07				
Iron	4.80E-04				
Lead	2.04E-06				
Manganese	1.11E-05				
Mercury	1.63E-09				
Molybdenum	3.77E-07				
Nickel	4.38E-07				
Silica					
Silver	2.71E-07				
Tetraoxo-sulfate(1-)					
Thallium	1.00E-06				
Uranium	5.23E-08				
Vanadium	6.82E-06				
Zinc	1.66E-06				
1,1,2-Trichloroethane	1.71E-07	7.04E-02		1.21E-08	
1,1-Dichloroethene	1.82E-07	6.00E-01		1.09E-07	
1,2-Dichloroethane	1.08E-07	9.10E-02		9.84E-09	
Benzene	4.29E-07	2.99E-02		1.28E-08	
Bromodichloromethane	1.18E-07	6.33E-02		7.49E-09	
Carbon Tetrachloride	4.49E-07	2.00E-01		8.98E-08	
Chloroform	1.82E-07	3.05E-02		5.54E-09	
Ethylbenzene	1.51E-06				
Polychlorinated biphenyl	2.83E-07	4.44E-01		1.26E-07	
Tetrachloroethene	7.55E-06	5.20E-02		3.93E-07	
Trichloroethene	1.61E-07	7.33E-02		1.18E-08	
Vinyl Chloride	5.48E-07	1.90E+00		1.04E-06	
Xylene	4.21E-06				
cis-1,2-Dichloroethene	4.08E-07				
trans-1,2-Dichloroethene	4.37E-08				
Radon-222					
Pathway Total					4.11E-05

----- LOCATION=SWMU 193C PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	4.91E-06				
Trichloroethene	2.12E-05	7.33E-02		1.55E-06	
Pathway Total					1.55E-06

----- LOCATION=SWMU 193C PATHWAY=Residential Child Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	5.78E-06				
Lead	2.64E-05				
Zinc	4.40E-05				
Pathway Total					

Residential Excess Lifetime Cancer Risks

----- LOCATION-SWMU 193C PATHWAY-Residential Child External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium					
Lead					
Zinc					
Pathway Total					

----- LOCATION-SWMU 193C PATHWAY-Residential Child Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	2.17E-01				
Antimony	6.48E-04				
Arsenic	6.92E-05	1.50E+00		1.04E-04	
Barium	1.38E-03				
Beryllium	6.29E-05	4.30E+00		2.70E-04	
Cadmium	2.00E-04				
Chromium	8.12E-04				
Cobalt	3.01E-04				
Iron	3.34E-01				
Lead	1.42E-03				
Manganese	7.72E-03				
Mercury	1.13E-06				
Molybdenum	2.62E-04				
Nickel	3.04E-04				
Silica	4.54E-02				
Silver	1.88E-04				
Tetraoxo-sulfate (1-)	3.74E-02				
Thallium	6.97E-04				
Uranium	3.63E-05				
Vanadium	4.74E-03				
Zinc	1.15E-03				
1,1,2-Trichloroethane	1.42E-05	5.70E-02		8.08E-07	
1,1-Dichloroethene	1.42E-05	6.00E-01		8.50E-06	
1,2-Dichloroethane	1.42E-05	9.10E-02		1.29E-06	
Benzene	1.42E-05	2.90E-02		4.11E-07	
Bromodichloromethane	1.42E-05	6.20E-02		8.79E-07	
Carbon Tetrachloride	1.42E-05	1.30E-01		1.84E-06	
Chloroform	1.42E-05	6.10E-03		8.64E-08	
Ethylbenzene	1.42E-05				
Polychlorinated biphenyl	5.67E-07	4.00E-01		2.27E-07	
Tetrachloroethene	1.42E-05	5.20E-02		7.37E-07	
Trichloroethene	6.99E-06	1.10E-02		7.69E-08	
Vinyl Chloride	5.21E-05	1.90E+00		9.90E-05	
Xylene	3.09E-05				
cis-1,2-Dichloroethene	2.83E-05				
trans-1,2-Dichloroethene	2.83E-05				
Radon-222	3.30E+05				
Pathway Total					4.88E-04

----- LOCATION-SWMU 193C PATHWAY-Residential Child Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	3.19E-03				
Trichloroethene	9.18E-04	1.10E-02		1.01E-05	
Pathway Total					1.01E-05

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Residential Child Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	6.20E-06				
Lead	2.83E-05				
Zinc	4.72E-05				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Residential Child Ingestion of Vegetables from McNairy Groun -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	1.46E-01				
Antimony	4.48E-04				
Arsenic	4.78E-05	1.50E+00		7.18E-05	
Barium	9.39E-04				
Beryllium	4.26E-05	4.30E+00		1.83E-04	
Cadmium	1.86E-04				
Chromium	5.46E-04				
Cobalt	2.16E-04				
Iron	2.25E-01				
Lead	9.55E-04				
Manganese	6.18E-03				
Mercury	1.39E-06				
Molybdenum	2.15E-04				
Nickel	2.33E-04				
Silica					
Silver	1.27E-04				
Tetraoxo-sulfate(1-)					
Thallium	4.70E-04				
Uranium	2.45E-05				
Vanadium	3.20E-03				
Zinc	1.34E-03				
1,1,2-Trichloroethane	2.36E-05	5.70E-02		1.34E-06	
1,1-Dichloroethene	2.79E-05	6.00E-01		1.67E-05	
1,2-Dichloroethane	3.69E-05	9.10E-02		3.36E-06	
Benzene	2.18E-05	2.90E-02		6.33E-07	
Bromodichloromethane	2.18E-05	6.20E-02		1.35E-06	
Carbon Tetrachloride	1.44E-05	1.30E-01		1.87E-06	
Chloroform	2.36E-05	6.10E-03		1.44E-07	
Ethylbenzene	1.28E-05				
Polychlorinated biphenyl	3.84E-07	4.00E-01		7.68E-07	
Tetrachloroethene	1.58E-05	5.20E-02		8.23E-07	
Trichloroethene	8.76E-06	1.10E-02		9.63E-08	
Vinyl Chloride	1.50E-04	1.90E+00		2.85E-04	
Xylene	2.62E-05				
cis-1,2-Dichloroethene	5.11E-05				
trans-1,2-Dichloroethene	2.33E-04				
Radon-222	1.42E+04				
Pathway Total					5.67E-04

----- LOCATION=SWMU 193C PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	2.62E-02				
Trichloroethene	1.15E-03	1.10E-02		1.27E-05	
Pathway Total					1.27E-05

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Residential Child Ingestion of Vegetables from Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	4.19E-04				
Lead	1.92E-03				
Zinc	6.43E-03				
Pathway Total					

----- LOCATION=SWMU 193C PATHWAY=Residential Child Inhalation Household Use of McNairy Ground -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Antimony					
Arsenic		5.00E+01			
Barium					
Beryllium		8.40E+00			
Cadmium		6.10E+00			
Chromium		4.10E+01			
Cobalt					
Iron					
Lead					
Manganese					
Mercury					
Molybdenum					
Nickel					
Silica					
Silver					
Tetraoxo-sulfate(1-)					
Thallium					
Uranium					
Vanadium					
Zinc					
1,1,2-Trichloroethane	8.40E-05	5.70E-02		4.79E-06	
1,1-Dichloroethene	8.40E-05	1.20E+00		1.01E-04	
1,2-Dichloroethane	8.40E-05	9.10E-02		7.65E-06	
Benzene	8.40E-05	2.90E-02		2.44E-06	
Bromodichloromethane	8.40E-05				
Carbon Tetrachloride	8.40E-05	5.30E-02		4.45E-06	
Chloroform	8.40E-05	8.10E-02		6.81E-06	
Ethylbenzene	8.40E-05				
Polychlorinated biphenyl		4.00E-01			
Tetrachloroethene	8.40E-05	2.00E-03		1.68E-07	
Trichloroethene	4.15E-05	6.00E-03		2.49E-07	
Vinyl Chloride	3.09E-04	3.00E-01		9.27E-05	
Xylene	1.83E-04				
cis-1,2-Dichloroethene	1.68E-04				
trans-1,2-Dichloroethene	1.68E-04				
Radon-222	2.20E+05	7.57E-12		1.66E-06	
Pathway Total					2.22E-04

----- LOCATION=SWMU 193C PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	1.89E-02				
Trichloroethene	5.45E-03	6.00E-03		3.27E-05	
Pathway Total					3.27E-05

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 193C PATHWAY=Residential Child Inhalation While Showering of McNairy Grou -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Antimony					
Arsenic		5.00E+01			
Barium					
Beryllium		8.40E+00			
Cadmium		6.10E+00			
Chromium		4.10E+01			
Cobalt					
Iron					
Lead					
Manganese					
Mercury					
Molybdenum					
Nickel					
Silica					
Silver					
Tetraoxo-sulfate (1-)					
Thallium					
Uranium					
Vanadium					
Zinc					
1,1,2-Trichloroethane	7.74E-06	5.70E-02		4.41E-07	
1,1-Dichloroethene	7.74E-06	1.20E+00		9.29E-06	
1,2-Dichloroethane	7.74E-06	9.10E-02		7.04E-07	
Benzene	7.74E-06	2.90E-02		2.24E-07	
Bromodichloromethane	7.74E-06				
Carbon Tetrachloride	7.74E-06	5.30E-02		4.10E-07	
Chloroform	7.74E-06	8.10E-02		6.27E-07	
Ethylbenzene	7.74E-06				
Polychlorinated biphenyl		4.00E-01			
Tetrachloroethene	7.74E-06	2.00E-03		1.55E-08	
Trichloroethene	3.82E-06	6.00E-03		2.29E-08	
Vinyl Chloride	2.85E-05	3.00E-01		8.54E-06	
Xylene	1.69E-05				
cis-1,2-Dichloroethene	1.55E-05				
trans-1,2-Dichloroethene	1.55E-05				
Radon-222	2.05E+06	7.57E-12		1.55E-05	
Pathway Total					3.58E-05

----- LOCATION=SWMU 193C PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,2-Dichloroethene	1.74E-03				
Trichloroethene	5.02E-04	6.00E-03		3.01E-06	
Pathway Total					3.01E-06

----- LOCATION=SWMU 193C PATHWAY=Residential Child Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Chromium	1.40E-11		1.20E+01	1.68E-10	
Lead	6.38E-11				
Zinc	1.07E-10				
Pathway Total					1.68E-10

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	2.24E-06	6.00E-01		1.34E-06	
Carbon Tetrachloride	1.49E-06	2.00E-01		2.98E-07	
Trichloroethene	1.68E-04	7.33E-02		1.23E-05	
cis-1,2-Dichloroethene	2.79E-05				
Pathway Total					1.40E-05

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	2.62E-04				
Arsenic	1.33E-07	3.66E+00		4.87E-07	
Barium	8.29E-06				
Beryllium	2.50E-07	4.30E+02		1.08E-04	
Chromium	3.06E-06				
Cobalt	2.28E-06				
Copper	1.93E-06				
Iron	5.60E-04				
Lead	1.96E-06				
Lithium	1.80E-06				
Manganese	4.01E-05				
Mercury	1.04E-08				
Nickel	3.71E-06				
Silica					
Sulfate	2.86E-04				
Tetraoxo-sulfate (1-)					
Vanadium	8.87E-06				
Zinc	5.44E-06				
1,1-Dichloroethene	3.84E-06	6.00E-01		2.31E-06	
Trichloroethene	2.61E-04	7.33E-02		1.91E-05	
bis(2-Ethylhexyl)phthalate	5.40E-06	7.37E-02		3.98E-07	
cis-1,2-Dichloroethene	1.70E-06				
Radon-222					
Technetium-99					
Pathway Total					1.30E-04

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	2.42E-04				
Beryllium	7.76E-07	4.30E+02		3.34E-04	
Chromium	1.09E-05				
Zinc	1.31E-04				
Acenaphthene	7.68E-07				
Acenaphthylene	6.10E-07				
Anthracene	1.38E-06				
Benz (a) anthracene	1.85E-06	2.35E+00		4.36E-06	
Benzo (a) pyrene	1.14E-06	2.35E+01		2.68E-05	
Benzo (b) fluoranthene	2.68E-06	2.35E+00		6.31E-06	
Benzo (ghi) perylene	1.74E-06				
Benzo (k) fluoranthene	1.33E-06	2.35E-01		3.14E-07	
Chrysene	3.05E-06	2.35E-02		7.18E-08	
Dibenz (a, h) anthracene	5.84E-07	2.35E+01		1.37E-05	
Dibenzofuran	2.86E-07				

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Dermal Contact with Soil -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Fluoranthene	1.98E-06				
Fluorene	5.10E-07				
Indeno (1,2,3-cd)pyrene	1.86E-06	2.35E+00		4.39E-06	
PCB-1016	3.32E-07	2.22E+00		7.38E-07	
PCB-1254	1.34E-07	2.22E+00		2.98E-07	
PCB-1260	2.62E-07	2.22E+00		5.81E-07	
Phenanthrene	2.31E-06				
Pyrene	2.27E-06				
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total					3.91E-04

----- LOCATION=SWMU 99A PATHWAY=Residential Adult External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium					
Beryllium					
Chromium					
Zinc					
Acenaphthene					
Acenaphthylene					
Anthracene					
Benz (a) anthracene					
Benzo (a) pyrene					
Benzo (b) fluoranthene					
Benzo (ghi) perylene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
Dibenzofuran					
Fluoranthene					
Fluorene					
Indeno (1,2,3-cd) pyrene					
PCB-1016					
PCB-1254					
PCB-1260					
Phenanthrene					
Pyrene					
Cesium-137	2.76E+01	2.09E-06		5.76E-05	
Neptunium-237	3.34E+02	4.62E-07		1.54E-04	
Technetium-99	1.20E+04	6.19E-13		7.44E-09	
Thorium-234	5.62E+02	3.50E-09		1.97E-06	
Uranium-234	4.28E+02	2.14E-11		9.15E-09	
Uranium-238	1.35E+03	6.57E-08		8.86E-05	
Pathway Total					3.02E-04

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	1.38E-04	6.00E-01		8.31E-05	
Carbon Tetrachloride	3.73E-05	1.30E-01		4.84E-06	
Trichloroethene	5.80E-03	1.10E-02		6.37E-05	
cis-1,2-Dichloroethene	1.54E-03				
Pathway Total					1.52E-04

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	1.44E-01				
Arsenic	7.33E-05	1.50E+00		1.10E-04	
Barium	4.57E-03				
Beryllium	1.38E-04	4.30E+00		5.93E-04	
Chromium	1.69E-03				
Cobalt	1.26E-03				
Copper	1.06E-03				
Iron	3.09E-01				
Lead	1.08E-03				
Lithium	9.90E-04				
Manganese	2.21E-02				
Mercury	5.74E-06				
Nickel	2.04E-03				
Silica	1.38E-01				
Sulfate	1.58E-01				
Tetraoxo-sulfate(1-)	1.31E-01				
Vanadium	4.89E-03				
Zinc	3.00E-03				
1,1-Dichloroethene	2.38E-04	6.00E-01		1.43E-04	
Trichloroethene	8.99E-03	1.10E-02		9.89E-05	
bis(2-Ethylhexyl)phthalate	1.27E-04	1.40E-02		1.78E-06	
cis-1,2-Dichloroethene	9.37E-05				
Radon-222	1.58E+07				
Technetium-99	1.07E+06	1.40E-12		1.50E-06	
Pathway Total					9.48E-04

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	1.38E-04				
Beryllium	4.44E-07	4.30E+00		1.91E-06	
Chromium	6.26E-06				
Zinc	7.51E-05				
Acenaphthene	2.20E-07				
Acenaphthylene	1.74E-07				
Anthracene	3.94E-07				
Benz(a)anthracene	5.29E-07	7.30E-01		3.86E-07	
Benzo(a)pyrene	3.25E-07	7.30E+00		2.38E-06	
Benzo(b)fluoranthene	7.66E-07	7.30E-01		5.59E-07	
Benzo(ghi)perylene	4.96E-07				
Benzo(k)fluoranthene	3.81E-07	7.30E-02		2.78E-08	
Chrysene	8.71E-07	7.30E-03		6.36E-09	
Dibenz(a,h)anthracene	1.67E-07	7.30E+00		1.22E-06	
Dibenzofuran	8.18E-08				

Residential Excess Lifetime Cancer Risks

----- LOCATION-SWMU 99A PATHWAY=Residential Adult Ingestion of Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Fluoranthene	5.66E-07				
Fluorene	1.46E-07				
Indeno (1,2,3-cd) pyrene	5.33E-07	7.30E-01		3.89E-07	
PCB-1016	1.58E-07	2.00E+00		3.16E-07	
PCB-1254	6.39E-08	2.00E+00		1.28E-07	
PCB-1260	1.25E-07	2.00E+00		2.49E-07	
Phenanthrene	6.60E-07				
Pyrene	6.49E-07				
Cesium-137	1.26E+03	3.16E-11		3.98E-08	
Neptunium-237	1.52E+04	3.00E-10		4.57E-06	
Technetium-99	5.48E+05	1.40E-12		7.68E-07	
Thorium-234	2.57E+04	1.93E-11		4.95E-07	
Uranium-234	1.95E+04	4.44E-11		8.67E-07	
Uranium-238	6.15E+04	6.20E-11		3.81E-06	
Pathway Total					1.81E-05

----- LOCATION-SWMU 99A PATHWAY=Residential Adult Ingestion of Vegetables from McNairy Groun -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	2.09E-04	6.00E-01		1.25E-04	
Carbon Tetrachloride	2.90E-05	1.30E-01		3.76E-06	
Trichloroethene	5.57E-03	1.10E-02		6.13E-05	
cis-1,2-Dichloroethene	2.13E-03				
Pathway Total					1.90E-04

----- LOCATION-SWMU 99A PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwat -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	7.46E-02				
Arsenic	3.89E-05	1.50E+00		5.83E-05	
Barium	2.38E-03				
Beryllium	7.17E-05	4.30E+00		3.08E-04	
Chromium	8.71E-04				
Cobalt	6.90E-04				
Copper	6.69E-04				
Iron	1.59E-01				
Lead	5.59E-04				
Lithium	5.20E-04				
Manganese	1.36E-02				
Mercury	5.42E-06				
Nickel	1.20E-03				
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium	2.53E-03				
Zinc	2.68E-03				
1,1-Dichloroethene	3.59E-04	6.00E-01		2.15E-04	
Trichloroethene	8.65E-03	1.10E-02		9.51E-05	
bis(2-Ethylhexyl)phthalate	6.77E-05	1.40E-02		9.48E-07	
cis-1,2-Dichloroethene	1.30E-04				
Radon-222	5.21E+05				
Technetium-99	3.18E+08	1.40E-12		4.46E-04	

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwat -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Pathway Total					1.12E-03

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Ingestion of Vegetables from Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	2.90E-02				
Beryllium	9.29E-05	4.30E+00		4.00E-04	
Chromium	1.30E-03				
Zinc	3.14E-02				
Acenaphthene	4.99E-05				
Acenaphthylene	4.38E-05				
Anthracene	8.86E-05				
Benz (a) anthracene	1.11E-04	7.30E-01		8.14E-05	
Benzo (a) pyrene	6.81E-05	7.30E+00		4.97E-04	
Benzo (b) fluoranthene	1.60E-04	7.30E-01		1.17E-04	
Benzo (ghi) perylene	1.03E-04				
Benzo (k) fluoranthene	7.93E-05	7.30E-02		5.79E-06	
Chrysene	1.83E-04	7.30E-03		1.34E-06	
Dibenz (a, h) anthracene	3.47E-05	7.30E+00		2.53E-04	
Dibenzofuran	1.72E-05				
Fluoranthene	1.23E-04				
Fluorene	3.27E-05				
Indeno (1, 2, 3-cd) pyrene	1.11E-04	7.30E-01		8.10E-05	
PCB-1016	3.32E-05	2.00E+00		6.64E-05	
PCB-1254	1.34E-05	2.00E+00		2.68E-05	
PCB-1260	2.59E-05	2.00E+00		5.18E-05	
Phenanthrene	1.46E-04				
Pyrene	1.40E-04				
Cesium-137	2.78E+05	3.16E-11		8.78E-06	
Neptunium-237	3.20E+06	3.00E-10		9.61E-04	
Technetium-99	9.11E+10	1.40E-12		1.28E-01	
Thorium-234	5.33E+06	1.93E-11		1.03E-04	
Uranium-234	4.06E+06	4.44E-11		1.80E-04	
Uranium-238	1.29E+07	6.20E-11		7.98E-04	
Pathway Total					1.31E-01

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation Household Use of McNairy Ground -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	4.11E-04	1.20E+00		4.93E-04	
Carbon Tetrachloride	1.10E-04	5.30E-02		5.86E-06	
Trichloroethene	1.72E-02	6.00E-03		1.03E-04	
cis-1,2-Dichloroethene	4.55E-03				
Pathway Total					6.02E-04

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Arsenic		5.00E+01			
Barium					
Beryllium		8.40E+00			
Chromium		4.10E+01			
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Manganese					
Mercury					
Nickel					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium					
Zinc					
1,1-Dichloroethene	7.06E-04	1.20E+00		8.47E-04	
Trichloroethene	2.67E-02	6.00E-03		1.60E-04	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	2.78E-04				
Radon-222	5.25E+06	7.57E-12		3.97E-05	
Technetium-99		2.89E-12			
Pathway Total					1.05E-03

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation While Showering of McNairy Grou -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	3.78E-05	1.20E+00		4.54E-05	
Carbon Tetrachloride	1.02E-05	5.30E-02		5.39E-07	
Trichloroethene	1.58E-03	6.00E-03		9.49E-06	
cis-1,2-Dichloroethene	4.19E-04				
Pathway Total					5.54E-05

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Arsenic		5.00E+01			
Barium					
Beryllium		8.40E+00			
Chromium		4.10E+01			
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Manganese					
Mercury					
Nickel					
Silica					
Sulfate					

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Tetraoxo-sulfate(1-) Vanadium					
Zinc					
1,1-Dichloroethene	6.50E-05	1.20E+00		7.80E-05	
Trichloroethene	2.46E-03	6.00E-03		1.47E-05	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	2.56E-05				
Radon-222	4.91E+07	7.57E-12		3.72E-04	
Technetium-99		2.89E-12			
Pathway Total					4.64E-04

----- LOCATION=SWMU 99A PATHWAY=Residential Adult Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	3.02E-09				
Beryllium	9.67E-12		2.40E+00	2.32E-11	
Chromium	1.36E-10		1.20E+01	1.64E-09	
Zinc	1.64E-09				
Acenaphthene	6.65E-07				
Acenaphthylene	3.88E-07				
Anthracene	3.34E-07				
Benz(a)anthracene	3.71E-08		8.80E-02	3.26E-09	
Benzo(a)pyrene	8.78E-09		8.80E-01	7.73E-09	
Benzo(b)fluoranthene	1.09E-07		8.80E-02	9.62E-09	
Benzo(ghi)perylene	1.08E-11				
Benzo(k)fluoranthene	6.40E-09		8.80E-03	5.63E-11	
Chrysene	2.12E-07		8.80E-04	1.86E-10	
Dibenz(a,h)anthracene	1.06E-09		8.80E-01	9.32E-10	
Dibenzofuran	1.34E-07				
Fluoranthene	1.23E-07				
Fluorene	1.89E-07				
Indeno(1,2,3-cd)pyrene	6.18E-09		8.80E-02	5.44E-10	
PCB-1016	2.21E-07		5.71E-01	1.26E-07	
PCB-1254	7.95E-08		5.71E-01	4.54E-08	
PCB-1260	1.84E-07		5.71E-01	1.05E-07	
Phenanthrene	1.44E-11				
Pyrene	1.13E-07				
Cesium-137	7.83E-03	1.91E-11		1.50E-13	
Neptunium-237	9.48E-02	3.45E-08		3.27E-09	
Technetium-99	3.41E+00	2.89E-12		9.87E-12	
Thorium-234	1.60E-01	1.90E-11		3.04E-12	
Uranium-234	1.22E-01	1.40E-08		1.70E-09	
Uranium-238	3.83E-01	1.24E-08		4.75E-09	
Pathway Total					3.10E-07

----- LOCATION=SWMU 99A PATHWAY=Residential Child Dermal Contact with McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	7.56E-07	6.00E-01		4.54E-07	
Carbon Tetrachloride	5.03E-07	2.00E-01		1.01E-07	
Trichloroethene	5.69E-05	7.33E-02		4.17E-06	
cis-1,2-Dichloroethene	9.42E-06				

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Residential Child Dermal Contact with McNairy Groundwater -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Pathway Total					4.72E-06

----- LOCATION=SWMU 99A PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	8.84E-05				
Arsenic	4.50E-08	3.66E+00		1.65E-07	
Barium	2.80E-06				
Beryllium	8.46E-08	4.30E+02		3.64E-05	
Chromium	1.03E-06				
Cobalt	7.71E-07				
Copper	6.51E-07				
Iron	1.89E-04				
Lead	6.63E-07				
Lithium	6.07E-07				
Manganese	1.36E-05				
Mercury	3.52E-09				
Nickel	1.25E-06				
Silica					
Sulfate	9.68E-05				
Tetraoxo-sulfate(1-)					
Vanadium	3.00E-06				
Zinc	1.84E-06				
1,1-Dichloroethene	1.30E-06	6.00E-01		7.79E-07	
Trichloroethene	8.83E-05	7.33E-02		6.47E-06	
bis(2-Ethylhexyl) phthalate	1.83E-06	7.37E-02		1.35E-07	
cis-1,2-Dichloroethene	5.74E-07				
Radon-222					
Technetium-99					
Pathway Total					4.39E-05

----- LOCATION=SWMU 99A PATHWAY=Residential Child Dermal Contact with Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	2.20E-04				
Beryllium	7.05E-07	4.30E+02		3.03E-04	
Chromium	9.94E-06				
Zinc	1.19E-04				
Acenaphthene	6.98E-07				
Acenaphthylene	5.53E-07				
Anthracene	1.25E-06				
Benz(a)anthracene	1.68E-06	2.35E+00		3.96E-06	
Benzo(a)pyrene	1.03E-06	2.35E+01		2.44E-05	
Benzo(b)fluoranthene	2.43E-06	2.35E+00		5.73E-06	
Benzo(ghi)perylene	1.58E-06				
Benzo(k)fluoranthene	1.21E-06	2.35E-01		2.85E-07	
Chrysene	2.77E-06	2.35E-02		6.52E-08	
Dibenz(a,h)anthracene	5.30E-07	2.35E+01		1.25E-05	
Dibenzofuran	2.60E-07				
Fluoranthene	1.80E-06				
Fluorene	4.63E-07				
Indeno(1,2,3-cd)pyrene	1.69E-06	2.35E+00		3.99E-06	

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Residential Child Dermal Contact with Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
PCB-1016	3.02E-07	2.22E+00		6.70E-07	
PCB-1254	1.22E-07	2.22E+00		2.71E-07	
PCB-1260	2.37E-07	2.22E+00		5.28E-07	
Phenanthrene	2.10E-06				
Pyrene	2.06E-06				
Cesium-137					
Neptunium-237					
Technetium-99					
Thorium-234					
Uranium-234					
Uranium-238					
Pathway Total:					3.55E-04

----- LOCATION=SWMU 99A PATHWAY=Residential Child External Exposure to Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium					
Beryllium					
Chromium					
Zinc					
Acenaphthene					
Acenaphthylene					
Anthracene					
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenz(a,h)anthracene					
Dibenzofuran					
Fluoranthene					
Fluorene					
Indeno(1,2,3-cd)pyrene					
PCB-1016					
PCB-1254					
PCB-1260					
Phenanthrene					
Pyrene					
Cesium-137	4.87E+00	2.09E-06		1.02E-05	
Neptunium-237	5.89E+01	4.62E-07		2.72E-05	
Technetium-99	2.12E+03	6.19E-13		1.31E-09	
Thorium-234	9.93E+01	3.50E-09		3.47E-07	
Uranium-234	7.55E+01	2.14E-11		1.62E-09	
Uranium-238	2.38E+02	6.57E-08		1.56E-05	
Pathway Total:					5.34E-05

----- LOCATION=SWMU 99A PATHWAY=Residential Child Ingestion of McNairy Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	5.90E-05	6.00E-01		3.54E-05	
Carbon Tetrachloride	1.59E-05	1.30E-01		2.06E-06	

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Residential Child Ingestion of McNairy Groundwater -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Trichloroethene	2.47E-03	1.10E-02		2.72E-05	
cis-1,2-Dichloroethene	6.54E-04				
Pathway Total					6.46E-05

----- LOCATION=SWMU 99A PATHWAY=Residential Child Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	6.14E-02				
Arsenic	3.12E-05	1.50E+00		4.68E-05	
Barium	1.95E-03				
Beryllium	5.87E-05	4.30E+00		2.53E-04	
Chromium	7.19E-04				
Cobalt	5.35E-04				
Copper	4.52E-04				
Iron	1.31E-01				
Lead	4.61E-04				
Lithium	4.22E-04				
Manganese	9.42E-03				
Mercury	2.45E-06				
Nickel	8.70E-04				
Silica	5.87E-02				
Sulfate	6.72E-02				
Tetraoxo-sulfate (1-)	5.58E-02				
Vanadium	2.08E-03				
Zinc	1.28E-03				
1,1-Dichloroethene	1.01E-04	6.00E-01		6.08E-05	
Trichloroethene	3.83E-03	1.10E-02		4.21E-05	
bis(2-Ethylhexyl)phthalate	5.42E-05	1.40E-02		7.59E-07	
cis-1,2-Dichloroethene	3.99E-05				
Radon-222	1.39E+06				
Technetium-99	9.45E+04	1.40E-12		1.32E-07	
Pathway Total					4.03E-04

----- LOCATION=SWMU 99A PATHWAY=Residential Child Ingestion of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	2.36E-04				
Beryllium	7.56E-07	4.30E+00		3.25E-06	
Chromium	1.07E-05				
Zinc	1.28E-04				
Acenaphthene	3.74E-07				
Acenaphthylene	2.97E-07				
Anthracene	6.72E-07				
Benz(a)anthracene	9.02E-07	7.30E-01		6.58E-07	
Benzo(a)pyrene	5.55E-07	7.30E+00		4.05E-06	
Benzo(b)fluoranthene	1.30E-06	7.30E-01		9.52E-07	
Benzo(ghi)perylene	8.46E-07				
Benzo(k)fluoranthene	6.49E-07	7.30E-02		4.74E-08	
Chrysene	1.48E-06	7.30E-03		1.08E-08	
Dibenz(a,h)anthracene	2.84E-07	7.30E+00		2.07E-06	
Dibenzofuran	1.39E-07				
Fluoranthene	9.65E-07				

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY-Residential Child Ingestion of Soil -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Fluorene	2.48E-07				
Indeno(1,2,3-cd)pyrene	9.08E-07	7.30E-01		6.63E-07	
PCB-1016	2.70E-07	2.00E+00		5.39E-07	
PCB-1254	1.09E-07	2.00E+00		2.18E-07	
PCB-1260	2.12E-07	2.00E+00		4.24E-07	
Phenanthrene	1.12E-06				
Pyrene	1.11E-06				
Cesium-137	4.44E+02	3.16E-11		1.40E-08	
Neptunium-237	5.38E+03	3.00E-10		1.61E-06	
Technetium-99	1.94E+05	1.40E-12		2.71E-07	
Thorium-234	9.06E+03	1.93E-11		1.75E-07	
Uranium-234	6.89E+03	4.44E-11		3.06E-07	
Uranium-238	2.17E+04	6.20E-11		1.35E-06	
Pathway Total					1.66E-05

----- LOCATION=SWMU 99A PATHWAY-Residential Child Ingestion of Vegetables from McNairy Groun -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	1.16E-04	6.00E-01		6.96E-05	
Carbon Tetrachloride	1.61E-05	1.30E-01		2.09E-06	
Trichloroethene	3.09E-03	1.10E-02		3.40E-05	
cis-1,2-Dichloroethene	1.18E-03				
Pathway Total					1.06E-04

----- LOCATION=SWMU 99A PATHWAY-Residential Child Ingestion of Vegetables from RGA Groundwat -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum	4.14E-02				
Arsenic	2.16E-05	1.50E+00		3.24E-05	
Barium	1.32E-03				
Beryllium	3.98E-05	4.30E+00		1.71E-04	
Chromium	4.84E-04				
Cobalt	3.83E-04				
Copper	3.71E-04				
Iron	8.85E-02				
Lead	3.11E-04				
Lithium	2.88E-04				
Manganese	7.54E-03				
Mercury	3.01E-06				
Nickel	6.66E-04				
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium	1.41E-03				
Zinc	1.49E-03				
1,1-Dichloroethene	1.99E-04	6.00E-01		1.20E-04	
Trichloroethene	4.80E-03	1.10E-02		5.28E-05	
bis(2-Ethylhexyl)phthalate	3.76E-05	1.40E-02		5.26E-07	
cis-1,2-Dichloroethene	7.20E-05				
Radon-222	5.99E+04				
Technetium-99	3.66E+07	1.40E-12		5.12E-05	
Pathway Total					4.28E-04

Residential Excess Lifetime Cancer Risks

----- LOCATION-SWMU 99A PATHWAY-Residential Child Ingestion of Vegetables from Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	1.61E-02				
Beryllium	5.16E-05	4.30E+00		2.22E-04	
Chromium	7.21E-04				
Zinc	1.74E-02				
Acenaphthene	2.77E-05				
Acenaphthylene	2.43E-05				
Anthracene	4.92E-05				
Benz (a) anthracene	6.19E-05	7.30E-01		4.52E-05	
Benzo (a) pyrene	3.78E-05	7.30E+00		2.76E-04	
Benzo (b) fluoranthene	8.90E-05	7.30E-01		6.49E-05	
Benzo (ghi) perylene	5.74E-05				
Benzo (k) fluoranthene	4.40E-05	7.30E-02		3.21E-06	
Chrysene	1.02E-04	7.30E-03		7.43E-07	
Dibenz (a, h) anthracene	1.93E-05	7.30E+00		1.41E-04	
Dibenzofuran	9.57E-06				
Fluoranthene	6.80E-05				
Fluorene	1.82E-05				
Indeno (1, 2, 3-cd) pyrene	6.16E-05	7.30E-01		4.50E-05	
PCB-1016	1.84E-05	2.00E+00		3.69E-05	
PCB-1254	7.43E-06	2.00E+00		1.49E-05	
PCB-1260	1.44E-05	2.00E+00		2.88E-05	
Phenanthrene	8.09E-05				
Pyrene	7.80E-05				
Cesium-137	3.19E+04	3.16E-11		1.01E-06	
Neptunium-237	3.68E+05	3.00E-10		1.10E-04	
Technetium-99	1.05E+10	1.40E-12		1.47E-02	
Thorium-234	6.13E+05	1.93E-11		1.18E-05	
Uranium-234	4.67E+05	4.44E-11		2.07E-05	
Uranium-238	1.48E+06	6.20E-11		9.17E-05	
Pathway Total					1.58E-02

----- LOCATION-SWMU 99A PATHWAY-Residential Child Inhalation Household Use of McNairy Ground -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	3.50E-04	1.20E+00		4.20E-04	
Carbon Tetrachloride	9.41E-05	5.30E-02		4.99E-06	
Trichloroethene	1.46E-02	6.00E-03		8.78E-05	
cis-1,2-Dichloroethene	3.88E-03				
Pathway Total					5.13E-04

----- LOCATION-SWMU 99A PATHWAY-Residential Child Inhalation Household Use of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Arsenic		5.00E+01			
Barium					
Beryllium		8.40E+00			
Chromium		4.10E+01			
Cobalt					
Copper					
Iron					
Lead					
Lithium					

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation Household Use of RGA Groundwater -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Manganese					
Mercury					
Nickel					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium					
Zinc					
1,1-Dichloroethene	6.01E-04	1.20E+00		7.21E-04	
Trichloroethene	2.27E-02	6.00E-03		1.36E-04	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	2.37E-04				
Radon-222	9.26E+05	7.57E-12		7.01E-06	
Technetium-99		2.89E-12			
Pathway Total					8.65E-04

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation While Showering of McNairy Grou -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
1,1-Dichloroethene	3.22E-05	1.20E+00		3.87E-05	
Carbon Tetrachloride	8.67E-06	5.30E-02		4.59E-07	
Trichloroethene	1.35E-03	6.00E-03		8.09E-06	
cis-1,2-Dichloroethene	3.57E-04				
Pathway Total					4.72E-05

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Aluminum					
Arsenic		5.00E+01			
Barium					
Beryllium		8.40E+00			
Chromium		4.10E+01			
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Manganese					
Mercury					
Nickel					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Vanadium					
Zinc					
1,1-Dichloroethene	5.54E-05	1.20E+00		6.64E-05	
Trichloroethene	2.09E-03	6.00E-03		1.26E-05	
bis(2-Ethylhexyl)phthalate					
cis-1,2-Dichloroethene	2.18E-05				
Radon-222	8.66E+06	7.57E-12		6.56E-05	
Technetium-99		2.89E-12			

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Pathway Total					1.45E-04

----- LOCATION=SWMU 99A PATHWAY=Residential Child Inhalation of Soil -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	5.32E-10				
Beryllium	1.71E-12		2.40E+00	4.10E-12	
Chromium	2.41E-11		1.20E+01	2.89E-10	
Zinc	2.89E-10				
Acenaphthene	1.17E-07				
Acenaphthylene	6.85E-08				
Anthracene	5.89E-08				
Benz (a) anthracene	6.54E-09		8.80E-02	5.76E-10	
Benzo (a) pyrene	1.55E-09		8.80E-01	1.36E-09	
Benzo (b) fluoranthene	1.93E-08		8.80E-02	1.70E-09	
Benzo (ghi) perylene	1.91E-12				
Benzo (k) fluoranthene	1.13E-09		8.80E-03	9.94E-12	
Chrysene	3.74E-08		8.80E-04	3.29E-11	
Dibenz (a, h) anthracene	1.87E-10		8.80E-01	1.65E-10	
Dibenzofuran	2.36E-08				
Fluoranthene	2.16E-08				
Fluorene	3.33E-08				
Indeno (1, 2, 3-cd) pyrene	1.09E-09		8.80E-02	9.59E-11	
PCB-1016	3.89E-08		5.71E-01	2.22E-08	
PCB-1254	1.40E-08		5.71E-01	8.02E-09	
PCB-1260	3.24E-08		5.71E-01	1.85E-08	
Phenanthrene	2.54E-12				
Pyrene	1.99E-08				
Cesium-137	1.38E-03	1.91E-11		2.64E-14	
Neptunium-237	1.67E-02	3.45E-08		5.77E-10	
Technetium-99	6.02E-01	2.89E-12		1.74E-12	
Thorium-234	2.82E-02	1.90E-11		5.36E-13	
Uranium-234	2.14E-02	1.40E-08		3.00E-10	
Uranium-238	6.76E-02	1.24E-08		8.38E-10	
Pathway Total					5.47E-08

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	1.19E-05				
Chromium	1.50E-06				
Iron	5.41E-05				
Manganese	6.27E-06				
Silica					
Sulfate	6.18E-04				
Tetraoxo-sulfate(1-)					
Zinc	1.41E-06				
Trichloroethene	8.03E-04	7.33E-02		5.89E-05	
Radon-222					
Pathway Total					5.89E-05

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	6.53E-03				
Chromium	8.24E-04				
Iron	2.98E-02				
Manganese	3.45E-03				
Silica	1.22E-01				
Sulfate	3.40E-01				
Tetraoxo-sulfate(1-)	1.93E-01				
Zinc	7.76E-04				
Trichloroethene	2.77E-02	1.10E-02		3.04E-04	
Radon-222	9.81E+06				
Pathway Total					3.04E-04

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Ingestion of Vegetables from RGA Groundwat -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	3.40E-03				
Chromium	4.25E-04				
Iron	1.54E-02				
Manganese	2.12E-03				
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Zinc	6.93E-04				
Trichloroethene	2.66E-02	1.10E-02		2.93E-04	
Radon-222	3.24E+05				
Pathway Total					2.93E-04

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Inhalation Household Use of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium					
Chromium		4.10E+01			
Iron					
Manganese					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Zinc					
Trichloroethene	8.20E-02	6.00E-03		4.92E-04	
Radon-222	3.26E+06	7.57E-12		2.47E-05	
Pathway Total					5.17E-04

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium					
Chromium		4.10E+01			
Iron					
Manganese					

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99B PATHWAY=Residential Adult Inhalation While Showering of RGA Groundwa -----
(continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Zinc					
Trichloroethene	7.55E-03	6.00E-03		4.53E-05	
Radon-222	3.05E+07	7.57E-12		2.31E-04	
Pathway Total					2.77E-04

----- LOCATION=SWMU 99B PATHWAY=Residential Child Dermal Contact with RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	4.01E-06				
Chromium	5.05E-07				
Iron	1.83E-05				
Manganese	2.12E-06				
Silica					
Sulfate	2.09E-04				
Tetraoxo-sulfate(1-)					
Zinc	4.76E-07				
Trichloroethene	2.71E-04	7.33E-02		1.99E-05	
Radon-222					
Pathway Total					1.99E-05

----- LOCATION=SWMU 99B PATHWAY=Residential Child Ingestion of RGA Groundwater -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	2.78E-03				
Chromium	3.51E-04				
Iron	1.27E-02				
Manganese	1.47E-03				
Silica	5.20E-02				
Sulfate	1.45E-01				
Tetraoxo-sulfate(1-)	8.21E-02				
Zinc	3.31E-04				
Trichloroethene	1.18E-02	1.10E-02		1.30E-04	
Radon-222	8.65E+05				
Pathway Total					1.30E-04

----- LOCATION=SWMU 99B PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium	1.89E-03				
Chromium	2.36E-04				
Iron	8.56E-03				
Manganese	1.18E-03				
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					

Residential Excess Lifetime Cancer Risks

----- LOCATION=SWMU 99B PATHWAY=Residential Child Ingestion of Vegetables from RGA Groundwat -----
 (continued)

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Zinc	3.85E-04				
Trichloroethene	1.48E-02	1.10E-02		1.62E-04	
Radon-222	3.73E+04				
Pathway Total					1.62E-04

----- LOCATION=SWMU 99B PATHWAY=Residential Child Inhalation Household Use of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium					
Chromium		4.10E+01			
Iron					
Manganese					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Zinc					
Trichloroethene	6.99E-02	6.00E-03		4.19E-04	
Radon-222	5.76E+05	7.57E-12		4.36E-06	
Pathway Total					4.24E-04

----- LOCATION=SWMU 99B PATHWAY=Residential Child Inhalation While Showering of RGA Groundwa -----

Analyte	Carcinogenic CDI	Slope Factor	Unit Risk	Analyte Specific Risk	Total Pathway Risk
Barium					
Chromium		4.10E+01			
Iron					
Manganese					
Silica					
Sulfate					
Tetraoxo-sulfate(1-)					
Zinc					
Trichloroethene	6.43E-03	6.00E-03		3.86E-05	
Radon-222	5.39E+06	7.57E-12		4.08E-05	
Pathway Total					7.94E-05

APPENDIX F
RESULTS OF IEUBK LEAD MODELING

The following tables and graphs document the results of the Integrated Exposure Uptake Biokinetic (IEUBK) model for lead in children ages 0 to 5 years, potentially exposed at WAG 28 sites. Groundwater was considered to be a source of water for drinking. Surface and subsurface soil were each modeled as a source of lead via soil and dust. Default values for concentrations of lead in air ($0.1 \mu\text{g Pb}/\text{m}^3$) and diet were used at all sites. The concentrations of lead in house dust were calculated using the multiple source analysis in which the values for dust were based on a 70 percent conversion of soil lead to dust lead and an air-to-dust conversion of $100 \mu\text{g Pb in dust}/\mu\text{g Pb}/\text{m}^3$ of air.

Table 1 shows the results of modeling blood lead in children exposed to WAG 28 media considered individually, with lead concentrations in other media (such as surface soil in the groundwater analysis) set to default values specified by the model. Because this is likely to be an overly conservative approach in circumstances where, as here, the default lead concentration in soil is set by the model as high as $200 \mu\text{g}/\text{g}$ when the groundwater medium is being evaluated, the child blood lead estimates were repeated using site-specific lead concentrations for all media where data were available. The results of this analysis are set forth in Table 2 for SWMU 193c (modeling a groundwater concentration of $250 \mu\text{g}/\text{L}$ and a surface soil concentration of $24.9 \mu\text{g}/\text{g}$) and for SWMU 99a (modeling a groundwater concentration of $81.3 \mu\text{g}/\text{L}$ and a surface soil concentration set to the site-wide background lead concentration of $36 \mu\text{g}/\text{g}$).

A directive from the U.S. EPA's Office of Solid Waste and Emergency Response (OSWER) (directive # 9344.4-12) recommends that exposure of children to lead should be limited such that the estimated risk of blood lead exceeding $10 \mu\text{g}/\text{dL}$ would be 5 percent or less, as determined through the application of the IEUBK model on a site-specific basis. According to these guidelines, the results of the IEUBK on the lead contamination at WAG 28 show that the probability of blood lead concentrations exceeding $10 \mu\text{g}/\text{dL}$ for children 0-5 years of age is greater than 5 percent for MCN groundwater at SWMU 193c (83.75 percent), and for RGA groundwater at SWMU 99a (38.16 percent). Where site-specific or site-wide background surface soil concentrations are included in these determinations, these risks become 81.13 and 23.8 percent, respectively. Thus, the results of the model show that lead in surface and subsurface soil is a relatively minor contributor to the total uptake of the metal, and that, by themselves, these sources need not be considered potential health hazards to children for this contaminant.

Table 1. Estimates of blood lead concentrations in children exposed to lead-contaminated media at WAG28, with all other media-specific lead concentrations set to default values

Lead Concentrations in Water and Soil				
Location	Media	Concentration of PB in Media ^a	PbB Concentration ^b (µg/dL)	Probability ^c (%)
SWMU 193C	MCN Groundwater	250 µg/L	16.7	83.75
	Subsurface soil	13.6 µg/g	1.8	0.01
	Surface soil	24.9 µg/g	1.9	0.02
SWMU 194	Subsurface soil	15.8 µg/g	1.8	0.01
SWMU 99A	RGA Groundwater	81.3 µg/L	8.9	38.16
	Subsurface soil	18.1 µg/g	1.8	0.01

^a Pb concentration in other media modeled at default levels.

^b Geometric mean of blood lead (PbB) concentration.

^c Probability of blood lead concentrations exceeding 10 µg/dL, the level of concern for children.

Table 2. Estimates of blood lead concentrations in children exposed to lead-contaminated media at WAG28, with all media-specific lead concentrations set to site-specific values

Lead Concentrations in Water and Soil				
Location	Media	Concentration of PB in Media	PbB Concentration ^a (µg/dL)	Probability ^b (%)
SWMU 193C	MCN Groundwater	250 µg/L	15.5	81.13
	Surface soil	24.9 µg/g		
SWMU 99A	RGA Groundwater	81.3 µg/L	7.3	23.8
	Surface soil (background)	36 µg/g		

^a Geometric mean of blood lead (PbB) concentration.

^b Probability of blood lead concentrations exceeding 10 µg/dL, the level of concern for children.

10-12-99

WAG28

LEAD MODEL Version 0.99d

SWMU 193c McNairy Groundwater 250 µg/L

AIR CONCENTRATION: 0.100 µg Pb/m³ DEFAULT

Indoor AIR Pb Conc: 30.0 percent of outdoor.

Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m ³ /day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 250.00 µg Pb/L

WATER Consumption: DEFAULT

SOIL & DUST:

Soil: constant conc.

Dust: constant conc.

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
0-1	200.0	200.0
1-2	200.0	200.0
2-3	200.0	200.0
3-4	200.0	200.0
4-5	200.0	200.0
5-6	200.0	200.0
6-7	200.0	200.0

Additional Dust Sources: None DEFAULT

PAINT Intake: 0.00 µg Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model

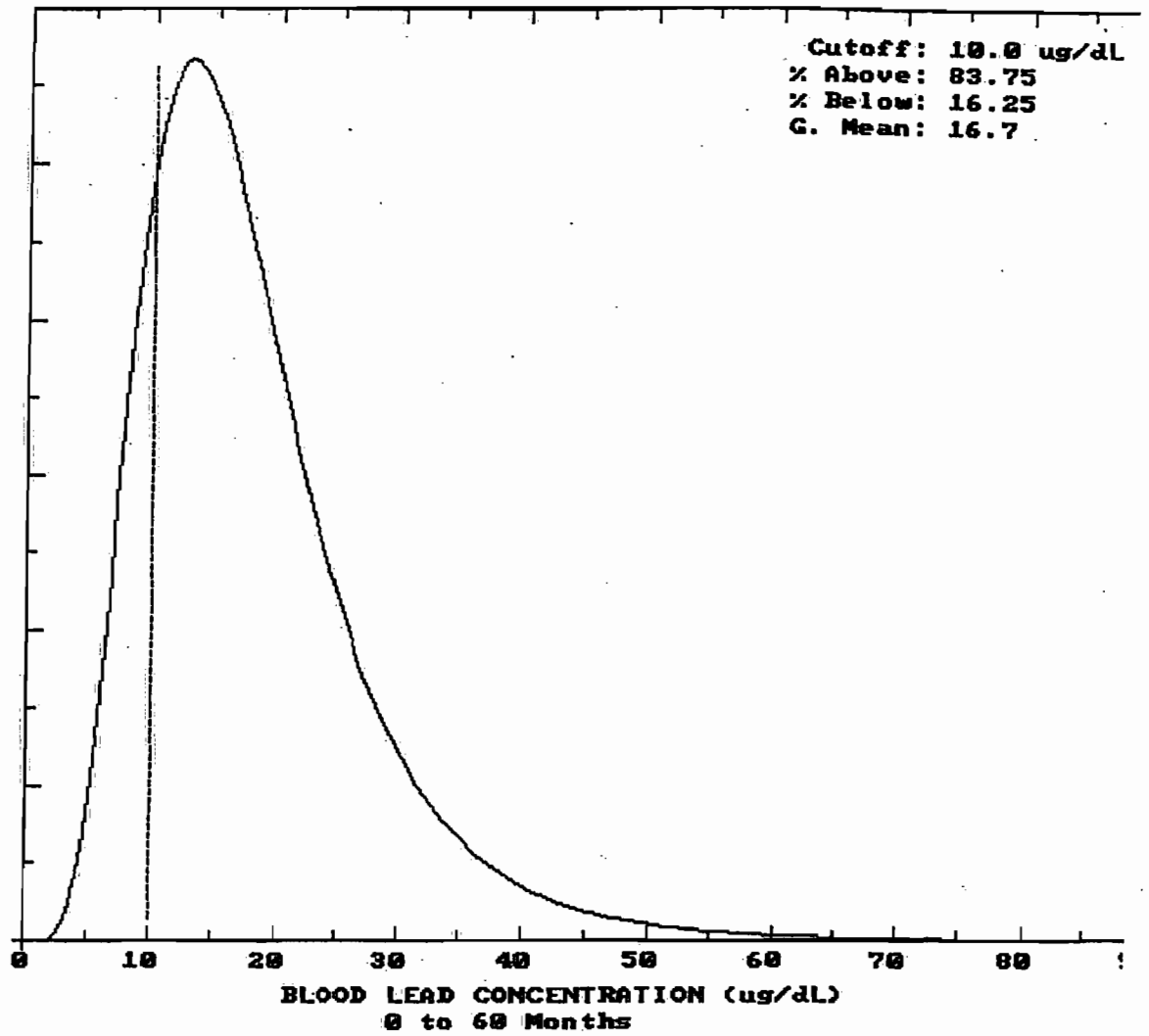
Maternal Blood Conc: 2.50 µg Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (µg/dL)	Total Uptake (µg/day)	Soil+Dust Uptake (µg/day)
0.5-1:	12.8	24.60	3.81
1-2:	18.3	47.53	5.24
2-3:	18.3	51.26	5.43
3-4:	18.1	54.12	5.65
4-5:	17.9	56.37	4.34
5-6:	17.6	59.92	3.98
6-7:	16.9	61.87	3.83

YEAR	Diet Uptake (µg/day)	Water Uptake (µg/day)	Paint Uptake (µg/day)	Air Uptake (µg/day)
0.5-1:	2.07	18.70	0.00	0.02
1-2:	1.87	40.40	0.00	0.03
2-3:	2.18	43.59	0.00	0.06
3-4:	2.18	46.23	0.00	0.07
4-5:	2.18	49.79	0.00	0.07
5-6:	2.34	53.50	0.00	0.09
6-7:	2.63	55.32	0.00	0.09

Probability Density
Function f(blood Pb)



LEAD MODEL Version 0.99d

SWMU 99a RGA groundwater 81.3 µg/L

AIR CONCENTRATION: 0.100 µg Pb/m³ DEFAULT

Indoor-AIR Pb Conc: 30.0 percent of outdoor.

Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m ³ /day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 81.30 µg Pb/L

WATER Consumption: DEFAULT

SOIL & DUST:

Soil: constant conc.

Dust: constant conc.

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
0-1	200.0	200.0
1-2	200.0	200.0
2-3	200.0	200.0
3-4	200.0	200.0
4-5	200.0	200.0
5-6	200.0	200.0
6-7	200.0	200.0

Additional Dust Sources: None DEFAULT

PAINT Intake: 0.00 µg Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model

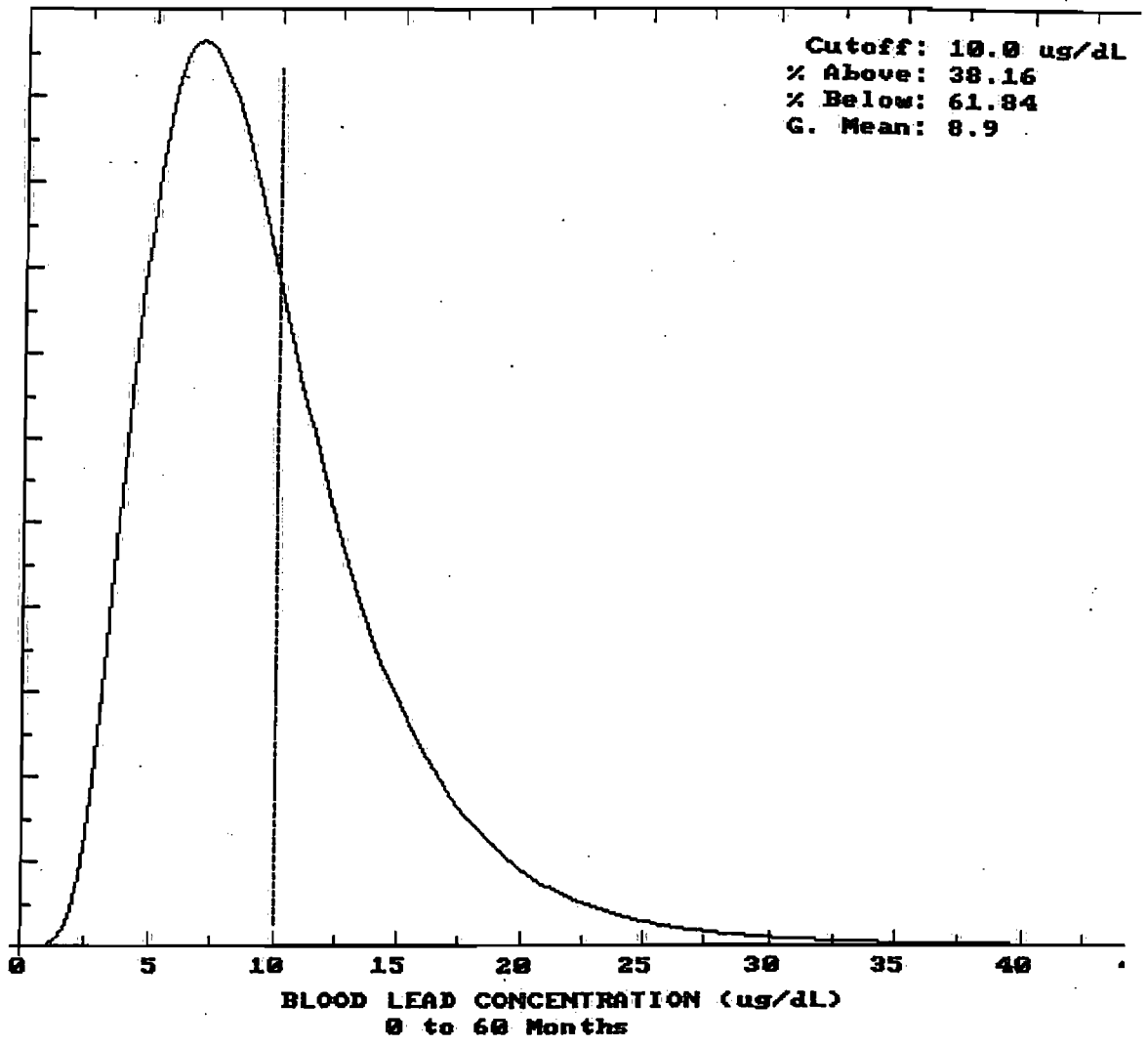
Maternal Blood Conc: 2.50 µg Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level ($\mu\text{g/dL}$)	Total Uptake ($\mu\text{g/day}$)	Soil+Dust Uptake ($\mu\text{g/day}$)
0.5-1:	7.3	13.67	4.35
1-2:	9.9	25.02	6.46
2-3:	9.7	26.58	6.61
3-4:	9.4	27.47	6.78
4-5:	8.9	27.03	5.16
5-6:	8.5	28.08	4.70
6-7:	8.0	28.71	4.48

YEAR	Diet Uptake ($\mu\text{g/day}$)	Water Uptake ($\mu\text{g/day}$)	Paint Uptake ($\mu\text{g/day}$)	Air Uptake ($\mu\text{g/day}$)
0.5-1:	2.36	6.94	0.00	0.02
1-2:	2.31	16.22	0.00	0.03
2-3:	2.65	17.26	0.00	0.06
3-4:	2.61	18.02	0.00	0.07
4-5:	2.58	19.22	0.00	0.07
5-6:	2.76	20.52	0.00	0.09
6-7:	3.07	21.06	0.00	0.09

Probability Density
Function f(blood Pb)



LEAD 0.99d

LEAD MODEL Version 0.99d

SWMU 193c Subsurface soil 13.6 µg/g

AIR CONCENTRATION: 0.100 µg Pb/m³ DEFAULT

Indoor AIR Pb Conc: 30.0 percent of outdoor.

Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate(m ³ /day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 4.00 µg Pb/L DEFAULT

WATER Consumption: DEFAULT

SOIL & DUST:

Soil: constant conc.

Dust: Multiple Source Analysis

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
0-1	13.6	19.5
1-2	13.6	19.5
2-3	13.6	19.5
3-4	13.6	19.5
4-5	13.6	19.5
5-6	13.6	19.5
6-7	13.6	19.5

Additional Dust Sources: None DEFAULT

Soil contribution conversion factor: 0.70

Air contribution conversion factor: 100.0

PAINT Intake: 0.00 µg Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model

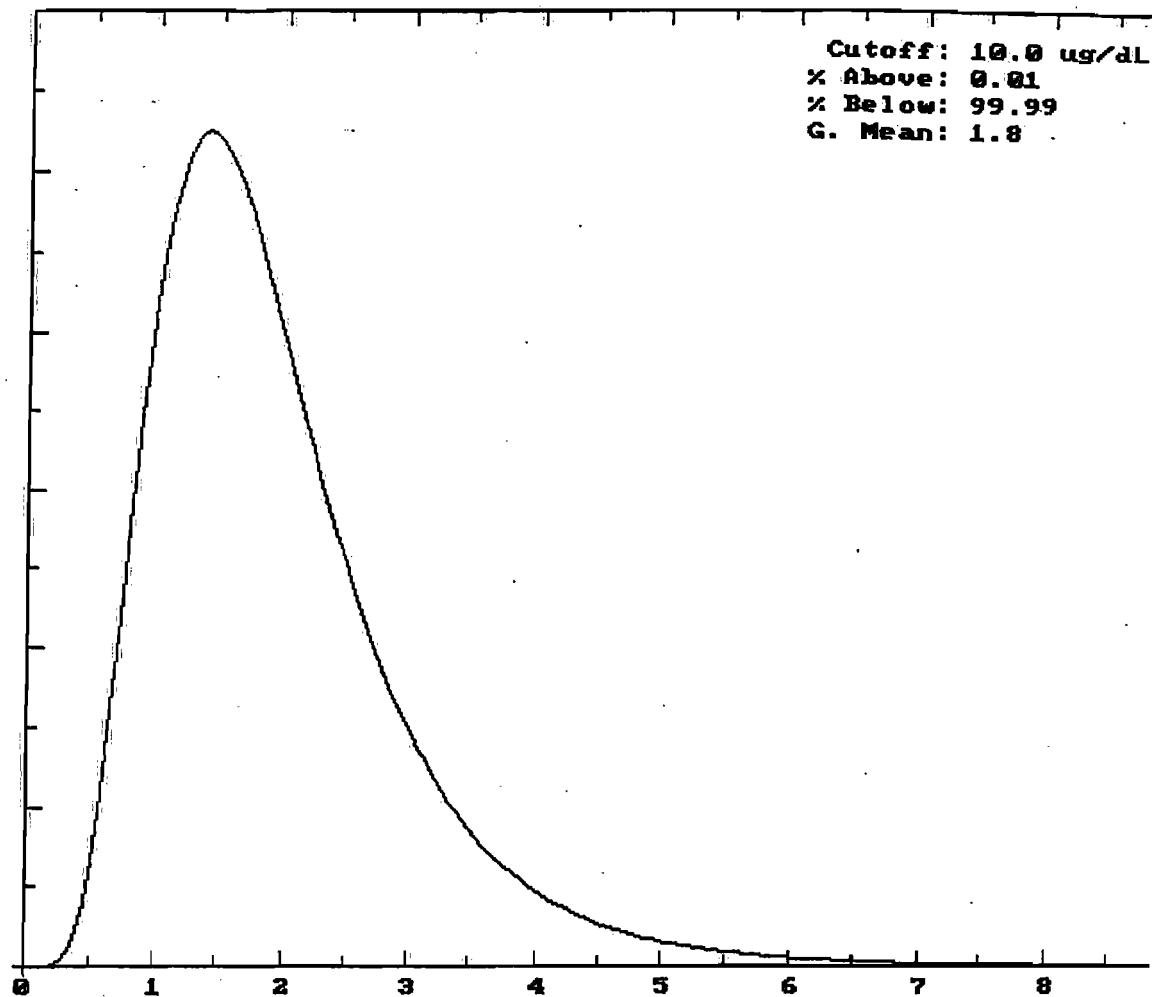
Maternal Blood Conc: 2.50 µg Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level ($\mu\text{g/dL}$)	Total Uptake ($\mu\text{g/day}$)	Soil+Dust Uptake ($\mu\text{g/day}$)
0.5-1:	1.9	3.48	0.41
1-2:	1.9	4.44	0.66
2-3:	1.8	4.86	0.66
3-4:	1.7	4.79	0.66
4-5:	1.5	4.57	0.49
5-6:	1.5	4.77	0.44
6-7:	1.4	5.09	0.42

YEAR	Diet Uptake ($\mu\text{g/day}$)	Water Uptake ($\mu\text{g/day}$)	Paint Uptake ($\mu\text{g/day}$)	Air Uptake ($\mu\text{g/day}$)
0.5-1:	2.66	0.38	0.00	0.02
1-2:	2.78	0.96	0.00	0.03
2-3:	3.13	1.00	0.00	0.06
3-4:	3.03	1.03	0.00	0.07
4-5:	2.93	1.07	0.00	0.07
5-6:	3.10	1.13	0.00	0.09
6-7:	3.42	1.15	0.00	0.09

Probability Density
Function f(blood Pb)



LEAD 0.99d

BLOOD LEAD CONCENTRATION (ug/dL)
0 to 60 Months

LEAD MODEL Version 0.99d

SWMU 193c Surface soil 24.9 µg/g

AIR CONCENTRATION: 0.100 µg Pb/m³ DEFAULT

Indoor AIR Pb Conc: 30.0 percent of outdoor.

Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m ³ /day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 4.00 µg Pb/L DEFAULT

WATER Consumption: DEFAULT

SOIL & DUST:

Soil: constant conc.

Dust: Multiple Source Analysis

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
0-1	24.9	27.4
1-2	24.9	27.4
2-3	24.9	27.4
3-4	24.9	27.4
4-5	24.9	27.4
5-6	24.9	27.4
6-7	24.9	27.4

Additional Dust Sources: None DEFAULT

Soil contribution conversion factor: 0.70

Air contribution conversion factor: 100.0

PAINT Intake: 0.00 µg Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model

Maternal Blood Conc: 2.50 µg Pb/dL

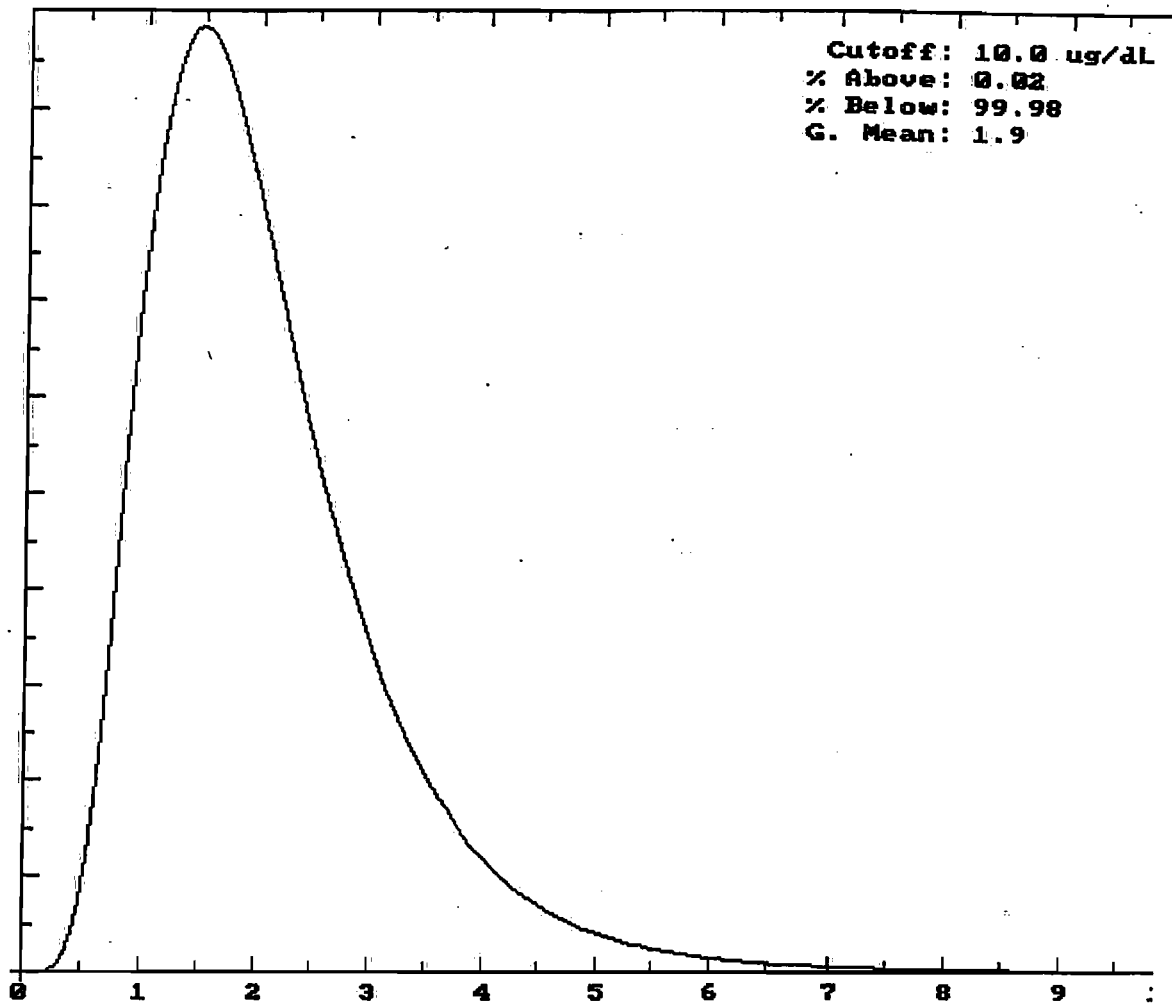
CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (µg/dL)	Total Uptake (µg/day)	Soil+Dust Uptake (µg/day)
0.5-1:	2.0	3.70	0.64
1-2:	2.0	4.79	1.02
2-3:	1.9	5.21	1.02
3-4:	1.8	5.15	1.03
4-5:	1.6	4.83	0.77
5-6:	1.5	5.01	0.69
6-7:	1.5	5.32	0.66

YEAR	Diet Uptake (µg/day)	Water Uptake (µg/day)	Paint Uptake (µg/day)	Air Uptake (µg/day)
0.5-1:	2.65	0.38	0.00	0.02
1-2:	2.77	0.96	0.00	0.03
2-3:	3.12	1.00	0.00	0.06
3-4:	3.02	1.03	0.00	0.07
4-5:	2.93	1.07	0.00	0.07
5-6:	3.10	1.13	0.00	0.09
6-7:	3.42	1.15	0.00	0.09

Probability Density
Function f(blood Pb)

Cutoff: 10.0 ug/dL
% Above: 0.02
% Below: 99.98
G. Mean: 1.9



LEAD 0.99d

BLOOD LEAD CONCENTRATION (ug/dL)
0 to 60 Months

LEAD MODEL Version 0.99d

SWMU 194 Subsurface soil: 15.8 µg/g

AIR CONCENTRATION: 0.100 µg Pb/m³ DEFAULT

Indoor AIR Pb Conc: 30.0 percent of outdoor.

Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m ³ /day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 4.00 µg Pb/L DEFAULT
WATER Consumption: DEFAULT

SOIL & DUST:

Soil: constant conc.

Dust: Multiple Source Analysis

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
0-1	15.8	21.1
1-2	15.8	21.1
2-3	15.8	21.1
3-4	15.8	21.1
4-5	15.8	21.1
5-6	15.8	21.1
6-7	15.8	21.1

Additional Dust Sources: None DEFAULT

Soil contribution conversion factor: 0.70

Air contribution conversion factor: 100.0

PAINT Intake: 0.00 µg Pb/day DEFAULT

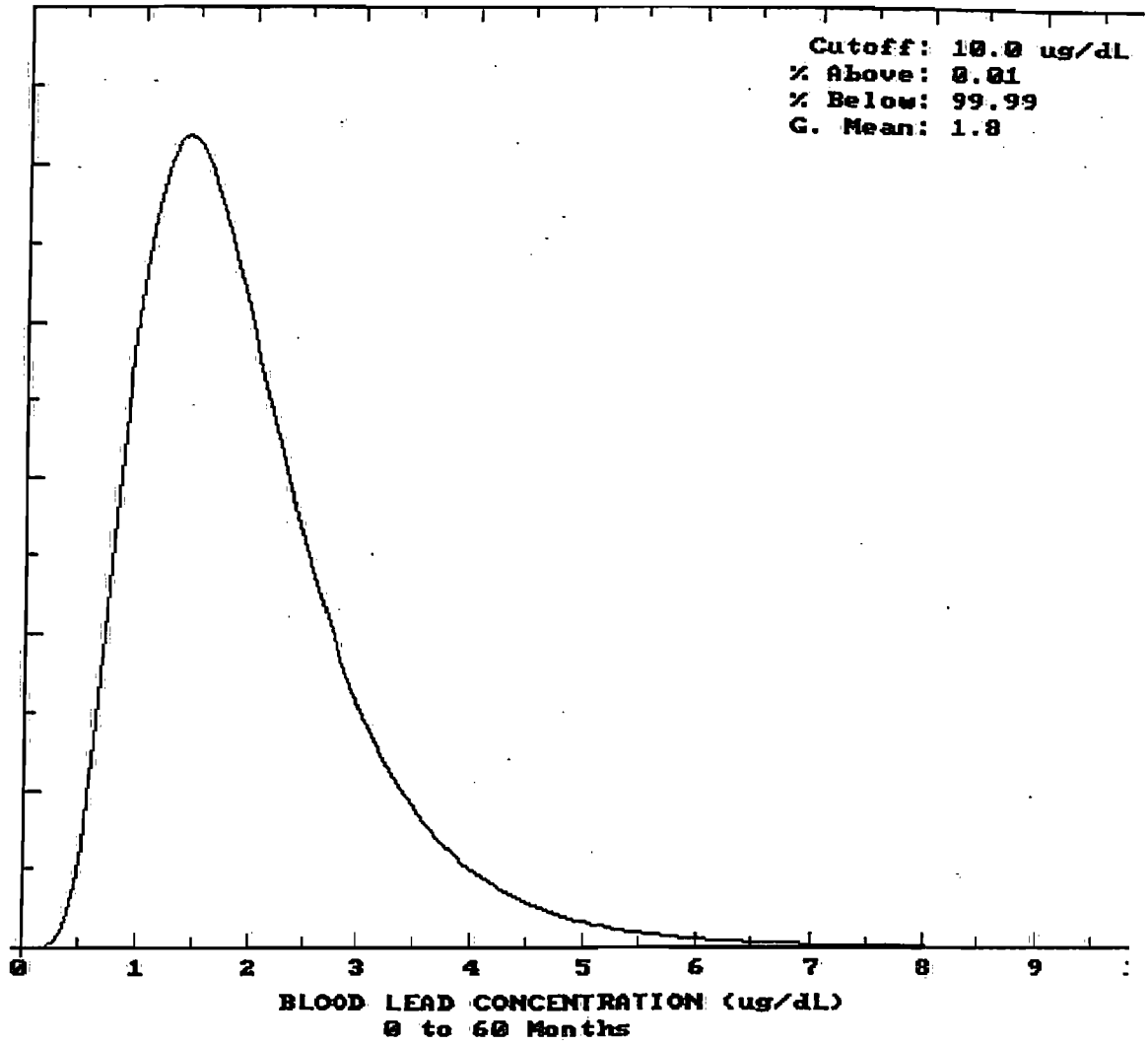
MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: 2.50 µg Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level ($\mu\text{g/dL}$)	Total Uptake ($\mu\text{g/day}$)	Soil+Dust Uptake ($\mu\text{g/day}$)
0.5-1:	1.9	3.52	0.46
1-2:	1.9	4.50	0.73
2-3:	1.8	4.93	0.73
3-4:	1.7	4.86	0.73
4-5:	1.6	4.62	0.55
5-6:	1.5	4.82	0.49
6-7:	1.4	5.14	0.47

YEAR	Diet Uptake ($\mu\text{g/day}$)	Water Uptake ($\mu\text{g/day}$)	Paint Uptake ($\mu\text{g/day}$)	Air Uptake ($\mu\text{g/day}$)
0.5-1:	2.66	0.38	0.00	0.02
1-2:	2.78	0.96	0.00	0.03
2-3:	3.13	1.00	0.00	0.06
3-4:	3.03	1.03	0.00	0.07
4-5:	2.93	1.07	0.00	0.07
5-6:	3.10	1.13	0.00	0.09
6-7:	3.42	1.15	0.00	0.09

Probability Density
Function f(blood Pb)



LEAD MODEL Version 0.99d

SWMU 99a Subsurface soil 18.1 µg/g

AIR CONCENTRATION: 0.100 µg Pb/m³ DEFAULT

Indoor AIR Pb Conc: 30.0 percent of outdoor.

Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m ³ /day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 4.00 µg Pb/L DEFAULT

WATER Consumption: DEFAULT

SOIL & DUST:

Soil: constant conc.

Dust: Multiple Source Analysis

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
0-1	18.1	22.7
1-2	18.1	22.7
2-3	18.1	22.7
3-4	18.1	22.7
4-5	18.1	22.7
5-6	18.1	22.7
6-7	18.1	22.7

Additional Dust Sources: None DEFAULT

Soil contribution conversion factor: 0.70

Air contribution conversion factor: 100.0

PAINT Intake: 0.00 µg Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model

Maternal Blood Conc: 2.50 µg Pb/dL

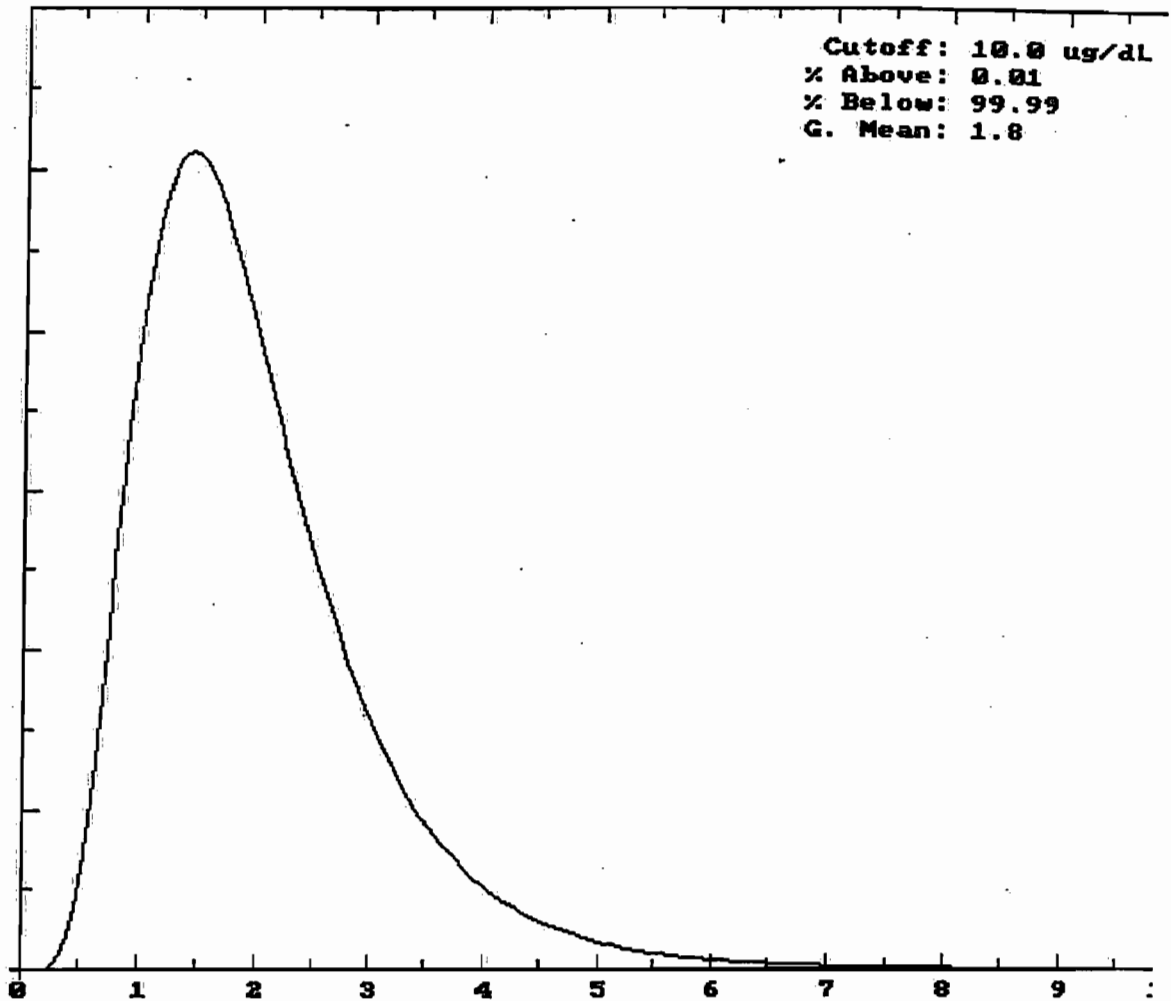
CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level ($\mu\text{g/dL}$)	Total Uptake ($\mu\text{g/day}$)	Soil+Dust Uptake ($\mu\text{g/day}$)
0.5-1:	2.0	3.57	0.50
1-2:	1.9	4.58	0.80
2-3:	1.9	5.00	0.80
3-4:	1.7	4.93	0.81
4-5:	1.6	4.67	0.60
5-6:	1.5	4.87	0.54
6-7:	1.4	5.18	0.51

YEAR	Diet Uptake ($\mu\text{g/day}$)	Water Uptake ($\mu\text{g/day}$)	Paint Uptake ($\mu\text{g/day}$)	Air Uptake ($\mu\text{g/day}$)
0.5-1:	2.66	0.38	0.00	0.02
1-2:	2.78	0.96	0.00	0.03
2-3:	3.13	1.00	0.00	0.06
3-4:	3.03	1.03	0.00	0.07
4-5:	2.93	1.07	0.00	0.07
5-6:	3.10	1.13	0.00	0.09
6-7:	3.42	1.15	0.00	0.09

Probability Density
Function f(blood Pb)

Cutoff: 10.0 ug/dL
% Above: 0.01
% Below: 99.99
G. Mean: 1.8



LEAD 0.99d

BLOOD LEAD CONCENTRATION (ug/dL)
0 to 60 Months

12/22/99

SWMU 193c, with a groundwater concentration (McNairy) of 250 µg/L AND a surface soil concentration of 24.9 µg/g.

DIET: DEFAULT

DRINKING WATER Conc: 250.00 µg Pb/L
WATER Consumption: DEFAULT

SOIL & DUST:

Soil: constant conc.

Dust: Multiple Source Analysis

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
0-1	24.9	27.4
1-2	24.9	27.4
2-3	24.9	27.4
3-4	24.9	27.4
4-5	24.9	27.4
5-6	24.9	27.4
6-7	24.9	27.4

Additional Dust Sources: None DEFAULT

Soil contribution conversion factor: 0.70

Air contribution conversion factor: 100.0

PAINT Intake: 0.00 µg Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model

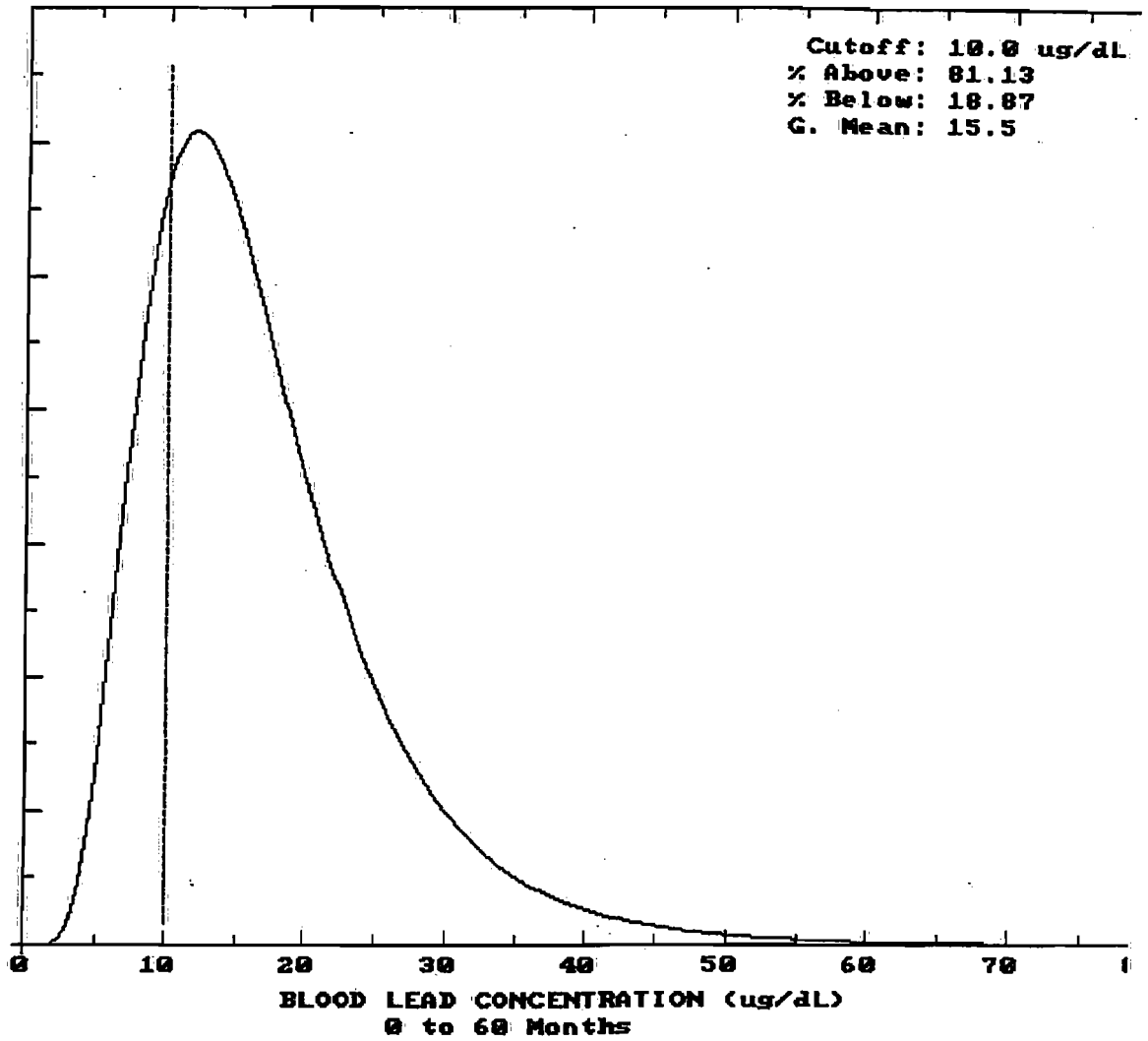
Maternal Blood Conc: 2.50 µg Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level ($\mu\text{g/dL}$)	Total Uptake ($\mu\text{g/day}$)	Soil+Dust Uptake ($\mu\text{g/day}$)
0.5-1:	11.5	21.98	0.52
1-2:	17.0	44.30	0.71
2-3:	17.1	47.83	0.73
3-4:	16.9	50.46	0.76
4-5:	16.9	53.50	0.58
5-6:	16.8	57.25	0.53
6-7:	16.2	59.28	0.51

YEAR	Diet Uptake ($\mu\text{g/day}$)	Water Uptake ($\mu\text{g/day}$)	Paint Uptake ($\mu\text{g/day}$)	Air Uptake ($\mu\text{g/day}$)
0.5-1:	2.14	19.31	0.00	0.02
1-2:	1.92	41.63	0.00	0.03
2-3:	2.24	44.79	0.00	0.06
3-4:	2.23	47.40	0.00	0.07
4-5:	2.21	50.64	0.00	0.07
5-6:	2.37	54.26	0.00	0.09
6-7:	2.66	56.02	0.00	0.09

Probability Density
Function f(blood Pb)



SWMU 99a, with a groundwater concentration of 81.3 µg/L and a (background) surface soil concentration of 36 µg/g.

LEAD MODEL Version 0.99d

AIR CONCENTRATION: 0.100 µg Pb/m³ DEFAULT

Indoor AIR Pb Conc: 30.0 percent of outdoor.

Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m ³ /day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 81.30 µg Pb/L

WATER Consumption: DEFAULT

SOIL & DUST:

Soil: constant conc.

Dust: Multiple Source Analysis

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
0-1	36.0	35.2
1-2	36.0	35.2
2-3	36.0	35.2
3-4	36.0	35.2
4-5	36.0	35.2
5-6	36.0	35.2
6-7	36.0	35.2

Additional Dust Sources: None DEFAULT

Soil contribution conversion factor: 0.70

Air contribution conversion factor: 100.0

PAINT Intake: 0.00 µg Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model

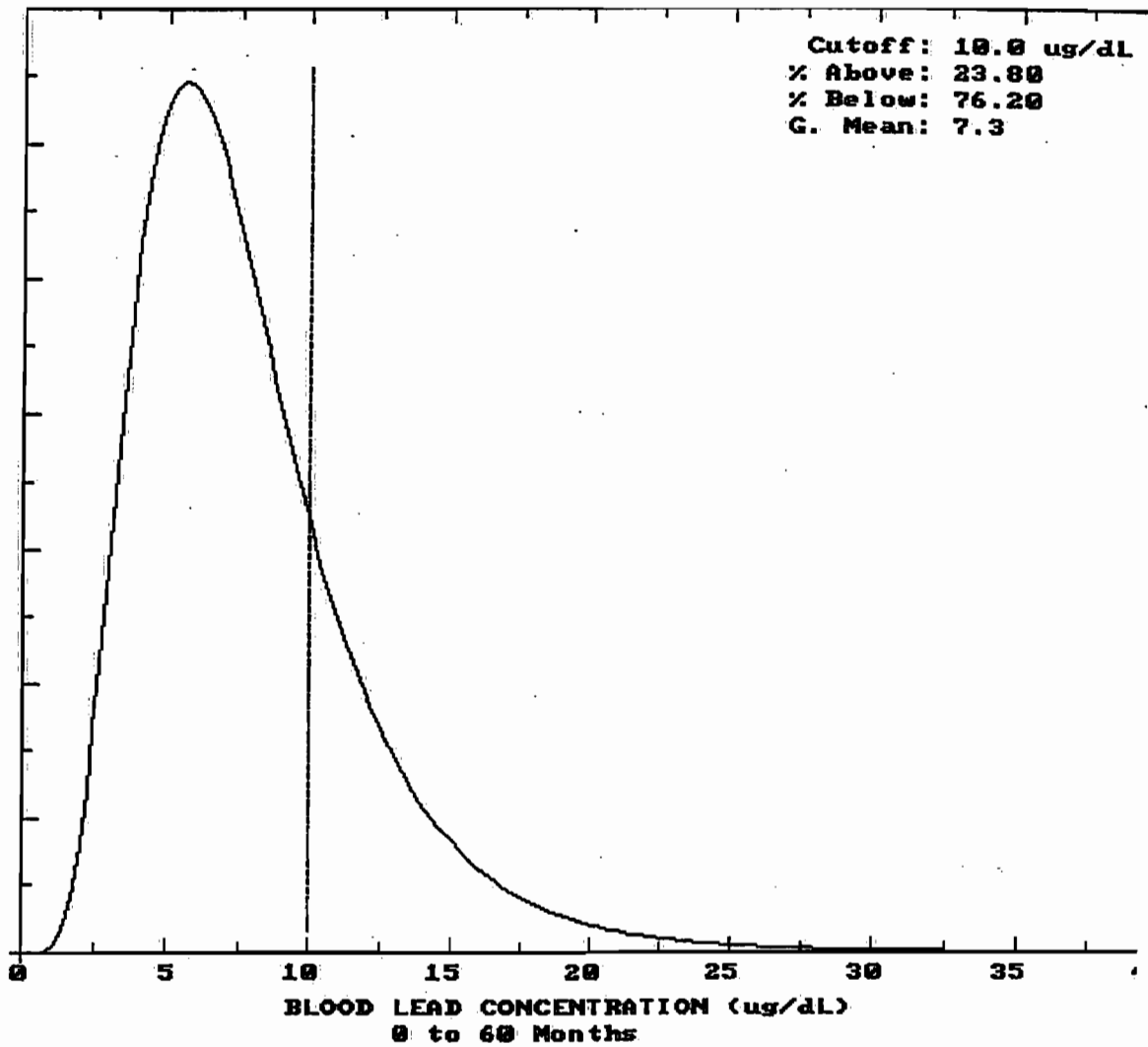
Maternal Blood Conc: 2.50 µg Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level ($\mu\text{g/dL}$)	Total Uptake ($\mu\text{g/day}$)	Soil+Dust Uptake ($\mu\text{g/day}$)
0.5-1:	5.6	10.48	0.80
1-2:	8.1	20.55	1.20
2-3:	8.0	21.93	1.22
3-4:	7.8	22.62	1.24
4-5:	7.6	23.29	0.94
5-6:	7.4	24.64	0.85
6-7:	7.1	25.41	0.81

YEAR	Diet Uptake ($\mu\text{g/day}$)	Water Uptake ($\mu\text{g/day}$)	Paint Uptake ($\mu\text{g/day}$)	Air Uptake ($\mu\text{g/day}$)
0.5-1:	2.45	7.21	0.00	0.02
1-2:	2.40	16.91	0.00	0.03
2-3:	2.75	17.90	0.00	0.06
3-4:	2.70	18.62	0.00	0.07
4-5:	2.64	19.64	0.00	0.07
5-6:	2.81	20.88	0.00	0.09
6-7:	3.12	21.39	0.00	0.09

Probability Density
Function f(blood Pb)



LEAD 0.99d

APPENDIX G

STANDARD DEFAULT EXPOSURE FACTORS

DEC 16 1993

ATTACHMENT 2

**SUPERFUND'S STANDARD DEFAULT EXPOSURE FACTORS
FOR THE CENTRAL TENDENCY AND
REASONABLE MAXIMUM EXPOSURE**

PRELIMINARY REVIEW DRAFT (5/5/93)

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1.0 INTRODUCTION

Last spring, EPA's Risk Assessment Council released a memorandum entitled "Guidance on Risk Characterization for Risk Managers and Risk Assessors" (U.S. EPA 1992) in which the council advocated greater interface between risk assessment and risk management, greater discussion of confidence and uncertainty in the risk assessment, and presentation of the range of possible exposures including the use of multiple risk descriptors. Focusing specifically on this last point regarding the exposure assessment, the Risk Assessment Council (RAC) clearly indicated that it expects all risk assessments "to address or provide descriptions of (1) individual risk to include the central tendency and high end portions of the risk distribution, (2) important subgroups of the population such as highly exposed or highly susceptible groups or individuals, if known, and (3) population risk".

For several years now, the Superfund program has considered exposure to sensitive subgroups or populations as applicable and has been estimating individual risk corresponding to the reasonable maximum exposure (RME). The Risk Assessment Guidance for Superfund: Human Health Evaluation Manual (Part A) (U.S. EPA 1989) also known as RAGS, defines the RME as the highest exposure that is reasonably expected to occur at a site and in practice is estimated by combining 90 - 95th percentile values for some but not all exposure parameters. Shortly after RAGS was released, the Superfund Program developed the "Standard Default Exposure Factors" Supplemental Guidance (U.S. EPA 1991) to promote consistency in the evaluation of the RME exposure in baseline risk assessments when site-specific data was lacking. It is the position of the Superfund Program that RAGS and the standard default values for the RME are consistent with the Risk Assessment Council's expectation to provide a description of the high-end portion of the risk distribution.

Until the guidance contained herein was developed, existing Superfund guidance did not provide a framework in which to estimate risk corresponding to the central tendency portion of the risk distribution as called for by the Risk Assessment Council. Perceiving a need to fill this void, a workgroup was organized by the Superfund Program in October of 1992, comprised mainly of EPA Regional Superfund risk assessors, with the purpose of defining the central tendency for use in Superfund baseline risk assessments. Over the course of the following six months, the workgroup convened periodically to discuss an approach and identify standard default exposure factors for the central tendency. In doing so, the workgroup also felt it beneficial to review the current default exposure factors for the RME and identify whether any changes were warranted at this time. Consequently, this guidance builds on the concepts identified in RAGS Part A and the Risk Assessment Council's recommendations regarding risk descriptors for the central tendency. It supersedes the standard default exposure factors for the RME

contained in the guidance of the same name (U.S. EPA 1991).

Reliance on the point estimate approach vs. the use of monte carlo techniques to characterize the range of possible exposure estimates was initially discussed by the workgroup as both approaches have merit in addressing the Risk Assessment Council's call to present the range of possible exposures and risk outcomes. In the end, the workgroup concluded that too many issues regarding the practical application of monte carlo techniques remained unresolved and would require a significant investment of time and resources to address such that the traditional point estimate approach to exposure assessments was favored at this time. Additionally, the point estimate approach to exposure was deemed fully consistent with the intent of the Risk Assessment Council in their memo.

As there presently is an agency-wide effort underway to address all of the Risk Assessment Council's recommendations (including the use of monte carlo techniques and revisions to EPA's Exposure Factors Handbook incorporating distributions for the various exposure parameters), the guidance contained herein for the Superfund Program is subject to change and consequently should be viewed as interim in status. When such agency-wide guidance is available, it is expected that it may supersede this guidance.

The guidance contained herein has been developed to encourage a consistent approach to assessing exposures when there is a lack of site-specific data or consensus on which parameter value to choose, given a range of possibilities. Accordingly, the exposure factors presented in this document are generally considered most appropriate and should be used in baseline risk assessments unless alternate or site-specific values can be clearly justified by supporting data.

Supporting data for many of the exposure factors presented in this guidance can be found in the Exposure Factors Handbook (EFH; U.S. EPA, 1990). Additionally, in some instances, peer reviewed studies were utilized to identify suitable default values as well as group consensus techniques when faced with a great deal of uncertainty. In these instances, either the study or a clearly documented logical approach used to identify default factors is referenced.

The general exposure equation into which these standard factors are to be utilized is as follows:

$$\text{Intake} = \frac{C \times IR \times EF \times ED}{BW \times AT} \quad \text{where}$$

- C = Concentration of the contaminant in a given medium
- IR = Intake/Contact Rate; the amount of contaminated medium contacted per unit time or event
- EF = Exposure Frequency

ED = Exposure Duration
BW = Body Weight
AT = Averaging Time (equal to exposure duration for
non-carcinogens and 70 years for carcinogens)

1.1 Central Tendency (CT)

The Risk Assessment Council defined the central tendency risk descriptor as either the arithmetic mean risk or the median risk and continues to say that the arithmetic mean risk can be derived by using average values for all the exposure factors though cautions that when dealing with skewed data, the median or 50th percentile may better approximate the midpoint of a distribution (U.S. EPA 1992). As a result, any approach to the identification of default factors for the central tendency should seek to identify average or 50th percentile values whenever possible. In keeping with this approach, default exposure factors approximating the average or 50th percentile value have been identified whenever possible for use in central tendency exposure evaluations.

1.2 Reasonable Maximum Exposure (RME)

The Risk Assessment Council defined a high end risk descriptor as one which characterizes risk to an individual at the upper end of the risk distribution. Conceptually, it can be equated to about the 90th percentile of the population distribution (U.S. EPA 1992). As previously indicated, the reasonable maximum exposure (RME) terminology used by the Superfund Program is believed consistent with this description. The Risk Assessment Guidance for Superfund: Human Health Evaluation Manual (Part A) (RAGS) defines the RME as the highest exposure that is reasonably expected to occur at a site and in practice is estimated by combining upper bound (90 - 95th percentile) values for some but not all exposure parameters. Consequently, the Superfund Program will continue to use the current terminology of reasonable maximum exposure (RME) in fulfilling the Risk Assessment Council's mandate to evaluate a high end risk descriptor.

In keeping with the previous default factor guidance (U.S. EPA 1991), 90 to 95th percentile values were targeted in this guidance document when identifying default factors for intake/contact rate, exposure frequency, and exposure duration. An average value or conservative estimate of the media average contacted over the exposure period was targeted for identification of default values for body weight and exposure concentration respectively.

Within the context of this guidance, standard default exposure factors have been identified for various exposure pathways and receptor populations owing to the different nature and magnitude of the assumed exposure. Generally speaking, default values for residential and occupational receptors have been identified and serve as the general basis for organization of this guidance.

1.3 Residential Exposure

Residential default exposure factors are generally relevant whenever there are or reasonably may be expected to be residences on or adjacent to the site. The contamination may be on the site itself or may have migrated from it. With the exception of exposure to contaminated soils, distinctions are not usually made in the default parameters for exposures to different aged receptors. Because of the higher intake to body weight ratio presumed to occur during the early years (ages 1-6) for this exposure pathway, special attention should be given to evaluating exposure for this pathway and is discussed in sections 7.4. and 7.5.

1.4 Occupational Exposure

Occupational default exposure factors are generally relevant whenever the site serves or may reasonably be expected to serve as a place of temporary or permanent employment. Examples of employment in which one may be presumed to come in contact with contaminated media might include employment at the facility itself or nearby facilities (commercial/ industrial), servicing of the facility (grounds keeper/utility maintenance), or construction of new facilities or the demolition of old facilities on or adjacent to the site.

2.0 CONCENTRATION

Central Tendency and RME

The concentration term in the intake equation is the arithmetic average of the concentration that is contacted over the exposure period. Because of the uncertainty associated with any estimate of exposure concentration, the 95% percent upper confidence limit of the arithmetic average concentration will be used for this variable in both the central tendency and reasonable maximum exposure estimates. Consideration should be given to the data set upon which the 95% upper confidence limit of the mean value is generated so as to represent as closely as possible the nature (acute vs. chronic) of potential exposures.

In some instances, there may be great variability in measured or modeled concentration values such as when too few samples are taken or when model inputs are uncertain. In these cases, the upper confidence limit on the average concentration may even exceed the maximum value observed or predicted. Should this

scenario arise, then the simple arithmetic mean and maximum concentrations should be used for the central tendency and reasonable maximum exposure concentrations respectively.

3.0 EXPOSURE FREQUENCY

The following default exposure frequencies may be utilized unless otherwise indicated or site-specific data is available.

3.1 Central Tendency

3.1.1 Residential

The central tendency residential default exposure frequency of 234 days/year corresponds to the fraction of time estimated that is actually spent at home (64 percent) for both men and women based on a study of time use patterns summarized in the EFH (U.S. EPA 1990). Because the study included both personal and work related travel, a 365 day year was used from which to compute the 64 percent.

3.1.2 Occupational ?

3.2 Reasonable Maximum Exposure

3.2.1 Residential

The RME residential default exposure frequency of 350 days/year is based on the previously identified default value which assumes a two week vacation each year. This is viewed as a reasonably conservative estimate of exposure frequency absent site-specific data.

3.2.2 Occupational

The RME occupational default exposure frequency of 250 days/year is consistent with the previously identified default value and is based on a 5 day work week with two weeks of vacation each year. This is viewed as a reasonably conservative estimate of exposure frequency absent site-specific data.

4.0 EXPOSURE DURATION

The following default exposure durations may be utilized unless otherwise indicated or site-specific data is available.

4.1 Central Tendency

4.1.1 Residential

The residential central tendency default exposure duration of 9 years is based on data summarized in the EFH (U.S. EPA 1990) in which the average length of residence in the same house of people who own their own home was estimated to be 9 years.

4.1.2 Occupational ?

4.2 Reasonable Maximum Exposure

4.2.1 Residential

The RME residential default exposure duration of 30 years is based on data summarized in the EFH (U.S. EPA 1990) in which the 90th percentile for the length of residence in the same house of people who own their own home was estimated to be 30 years.

4.2.2 Occupational

The RME occupational default exposure duration of 25 years is based upon the 95th percentile for the number of years worked at the same location as reported by the U.S. Bureau of Labor Statistics, 1990.

5.0 BODY WEIGHT

The average body weight is to be utilized for both the central tendency and RME exposure evaluations in keeping with the respective definitions.

5.1 Child

The approximate average body weight of young children (boys and girls combined) under the age of 6 years is approximately 15 kg (U.S. EPA 1990). Distributions of body weights and average body weights and for other age groups can be found in the EFH (U.S. EPA 1990).

5.2 Adult

The average body weight of 70 kg corresponds to the average weight of men and women age 18-75 as reported in EFH (U.S. EPA 1990). Distributions of body weights and average body weights for other age groups can be found in the EFH (U.S. EPA 1990).

6.0 INGESTION OF POTABLE WATER

6.1 Central Tendency

6.1.1 Residential Ingestion Rate

The central tendency potable water ingestion rate for an adult of 1.4 l/day is based on the average intake observed from five studies as summarized in the EFH (U.S. EPA 1990). The observed range reported across the five studies was from 0.26 - 2.8 l/day.

6.1.2 Occupational Ingestion Rate

No data upon which to base a default value.

6.2 Reasonable Maximum Exposure

6.2.1 Residential Ingestion Rate

The RME potable water ingestion rate of 2.3 l/day is close to the 90th percentile of values measured and estimated by researchers as summarized in EFH (U.S. EPA 1990). It is also the value currently used by EPA's Office of Water in establishing drinking water standards.

6.2.2. Occupational Ingestion Rate
No data upon which to base a default value.

7.0 INGESTION OF SOIL AND DUST

Due to the importance of the receptor's age and behavioral characteristics, default ingestion rates for this exposure pathway have been established based on the characteristics of the receptor rather than on the location of the exposure (residential vs. occupational). Default ingestion rates for this pathway are as described below in Sections 7.1 and 7.2.

7.1 Central Tendency

7.1.1. Child's Ingestion Rate

Numerous studies have documented that the propensity to ingest non-food items is greatest in the early years of development. As a result, children between the ages of 1 and 6 years are of greatest concern as they are expected to have the greatest exposure to contaminated soils and dusts via ingestion. Numerous studies (tracer studies and estimates of deposition/exposed surface area) have resulted in wide ranging estimates of the amount of soil and dusts ingested by young children making it difficult to identify a single value for use as the central tendency. Additionally, owing to the nature of the experimental studies, it is extremely difficult to separate the contribution to exposure resulting from exterior soils vs. interior dusts. As a result the ingestion rate is reported as the combined rate for soils and dusts.

It was believed by a consensus of workgroup members that the ingestion rate of 100 mg/day as a central tendency ingestion rate for a child between the ages of 1 and 6 years was within reason based on results using tracer elements (Davis et al. 1990 and Calabrese 1989). Furthermore, 100 mg/day is nearly identical to the ingestion rate for this age group based on age specific values utilized in support of the MAAQS for lead (U.S. EPA 1989b) and the lead biokinetic uptake model.

7.1.2 Adult's Ingestion Rate: Non-Contact Intensive

For the adult who does not engage in soil or dust contact intensive activities on a regular basis (apartment dweller, typical homeowner, office worker, teacher, professional, etc.) the soil and dust default ingestion rate for the central tendency of 50 mg/day based on a study of Calabrese 1990 (with supporting estimates from Hawley 1985).

7.1.3 Adult's Ingestion Rate: Contact Intensive

For adults who routinely engage in heavy contact with soils and dusts on a regular basis (including seasonal work), the workgroup was unable to identify a default

soil ingestion rate corresponding to the central tendency given the data available. It is suggested that an evaluation of the RME scenario for this receptor be conducted.

7.1.4. Residential: Child + Adult Combined

In evaluating a residential exposure scenario for this pathway, a weighted average of the child's and adult's exposure is to be utilized. The duration of exposure for the central tendency has been defined as consisting of nine years (average number for years at the same dwelling). It is the default position to assume that for 2 of the nine years, intake will be at the child's rate and for the remaining 7 years, intake will be at the adult rate. This is consistent with the proportion of time one is assumed to be a young child that is utilized for RME residential calculations. Thus residential exposure for the central tendency should generally be evaluated as follows:

$$\frac{2 \text{ years} \times 100 \text{ mg/day}}{15 \text{ kg}} + \frac{7 \text{ years} \times 50 \text{ mg/day}}{70 \text{ kg}}$$

16.3 $\frac{\text{yr} \cdot \text{mg/day}}{\text{kg}}$

7.1.5 Exposure Frequency and Duration: Central Tendency

The default value for the duration of exposure for the central tendency scenario is 9 years for a residential exposure based on the average length of stay in a home as reported in the EPH (U.S.EPA 1990). It should be noted that generally the intake over the 9 year exposure period is to be computed as described in section 7.1.4. The default exposure frequency for the central tendency is 350 days/year due to the nature in which the soil ingestion rates have been computed (average daily exposure).

A default exposure frequency and duration has not been specified for the central tendency occupational scenario at this time as it has not been discussed by the workgroup.

7.2 Reasonable Maximum Exposure

7.2.1 ~~Soil Ingestion~~ Ingestion Rate

The default RME ingestion rate for a young child age 1-6 years of age of 200 mg/day represents the consensus opinion of the workgroup based on review of available data and is believed to correspond to a conservative estimate of an average ingestion rate for this age group over a chronic period of exposure.

Unfortunately, the available data did not support identification of the 90 or 95 percentile value. It was the consensus among workgroup participants that over the 6 year period of concern for this receptor category, the value of 200 mg/day was reasonable to

assume. It should be noted that this value was not necessarily deemed relevant for acute exposures when a child may engage in intensive contact with soils and dusts for a brief period of time. In these situations, ingestion rates greater than this value may be warranted.

7.2.2 Adult's Ingestion Rate: Non-Contact Intensive

The RME default soil and dust ingestion rate of 100 mg/day, is based a study of Sedman (1989). This value is presumed suitable for non-contact intensive scenarios (apartment dweller, typical homeowner, office worker, teacher, professional, etc.).

7.2.3 Adult's Ingestion Rate: Contact Intensive

The RME default soil and dust ingestion rate of 400 mg/day is deemed appropriate for acute exposures (those less than a year in duration). This value is based on estimates made by Hawley (1985) in which he estimated deposition rates, exposed surface areas of the hands, and the fraction inadvertently consumed.

7.2.4 Residential: Child + Adult

In evaluating a residential RME exposure scenario, the exposure duration for the RME has been defined as consisting of 30 years (90 percentile for years at the same dwelling U.S. EPA 1990). It shall generally assumed when evaluating the RME residential exposure for the ingestion of soil and dusts that ~~24~~ of the 30 years, intake will be at the child's rate and for the remaining 24 years, intake will be at the adult rate. Thus residential RME exposure for this pathway should generally be evaluated as follows:

$$\frac{6 \text{ years} \times 200 \text{ mg/day}}{15 \text{ kg}} + \frac{24 \text{ years} \times 100 \text{ mg/day}}{70 \text{ kg}}$$

114.9 yr. mg/kg
kg

7.2.5 Exposure Frequency and Duration: RME

The default value for the duration of exposure for the RME scenario is 30 years for a residential exposure based on the 90th percentile for the length of stay in a home as reported in the EFH (U.S.EPA 1990). It should be noted that generally the intake over the 30 year exposure period is to be computed as described in section 7.2.4. The default exposure frequency for the RME is 350 days/year due to the nature in which the soil ingestion rates have been computed (average daily exposure) and assuming a two week period away from home each year.

The default value for the duration of exposure for the RME occupational scenario is 25 years based on the 95th percentile for the number of years worked at the same

location (Bureau of Labor Statistics 1990). The exposure frequency of 250 days/year corresponds to a five day work week.

- 7.3 General Exposure Frequency and Duration Considerations**
Owing to the strong age and behavioral dependent nature of this exposure, exposure durations and frequencies other than the default values may be warranted for this exposure pathway. For example, a situation may arise in which a child-care facility is of concern and the residential default values for exposure frequency and duration may not be appropriate. Similarly, certain occupations may lead to intensive exposure but for brief periods of time (i.e. construction workers, field laborers, seasonal workers, etc.) rendering use of the occupational default values for exposure frequency and duration inappropriate.

Additionally, there may be situations in which a Region believes it necessary to adjust the exposure frequency to account for meteorological conditions which may be presumed to drastically reduce or eliminate exposure to potential contaminants via soil ingestion. In these situations, any adjustments to the exposure frequency to reflect local weather patterns should first be approved by the Regional Office.

For these reasons, the default exposure durations and exposure frequencies may not always be relevant for the exposure at hand. Extra care should be taken when identifying suitable exposure frequencies and durations for this exposure pathway.

- 7.4 Fraction Ingested From the Contaminated Source**
The fraction ingested from the contaminated source is an important variable that often gets overlooked when evaluating scenarios that are largely dependent on the receptor coming to the source of contamination rather than the contamination migrating to the receptor. Due to variations in the proximity of the receptor to the contaminated source, size of the contaminated source, receptors of concern, mobility of receptors, and the nature of exposure, default values for the fraction ingested from the contaminated source are not possible. However, ~~this~~ it is advocated that this factor be given extra careful consideration when evaluating this exposure pathway.

- 7.5 Matrix Effect**
A parameter unique to all combinations of compounds and soil types- the matrix effect - accounts for the tendency of a compound to bind to soils. The more "soil loving" a compound is, the less likely it is to

desorb and become bioavailable in the gastrointestinal tract once ingested. Chemical and physical properties of contaminants and the soil can thus have a profound effect on the bioavailability of a compound. Unfortunately the data do not exist to support default desorption values for all compounds at this time though work is currently underway to develop some guidance in this area. At present, any adjustments for this phenomenon are left open to the discretion of the Regional Office.

8.0 INHALATION OF CONTAMINANTS

It is anticipated that at some time in the future, inhalation exposures will be evaluated using inhalation reference concentrations. However, at this time, the methodology is not yet available and consequently, inhalation rates and resulting dose (mg/kg/day) are the approach that is advocated for this exposure pathway. Inhalation rates are dependent on age, sex, and activity level to name just a few factors and can be found in the Exposure Factors Handbook (U.S. EPA 1990).

The same default inhalation rate has been identified for both the central tendency and the RME exposure scenarios. This is in keeping with the assumption regarding inhalation rate used in the derivation of cancer potency estimates and inhalation reference concentrations. The default value of $20 \text{ m}^3/\text{day}$ corresponds to a reference man's inhalation rate who is at rest 8 hours/day and at a light activity level (i.e. domestic work, personal care, hobbies, minor indoor home improvements) for the remaining 16 hours/day.

9.0 INGESTION OF LOCALLY CAUGHT FISH

The evaluation of this exposure pathway will not always be relevant to every site. The receptor of concern for this pathway is apt to include both the recreational fisherman and a subsistence fisherman and their family. The preferred approach to the evaluation of this exposure pathway is to obtain site-specific data regarding consumption rates and fishing habits. This is due to the strong influence of local habits, populations, and conditions on the resulting exposure.

When site-specific data are not feasible to obtain, the default approach suggested for this exposure pathway is based on an estimate of the average size of a fish meal and merely varies the exposure frequency, duration, and fraction ingested from the contaminated source between the central tendency and the RME estimates. With this approach, recreational and subsistence fishermen can be assumed to consume the same amount of fish per eating occasion yet differ in the frequency or number of fish meals actually consumed and the fraction of fish meals consumed that originated from the contaminated source. This change in approach was adopted because it was believed to better characterize exposure resulting from an intermittent and often

infrequent exposure pathway than the default approach previously advocated which relied on an intake rate averaged over a year of exposure.

The average amount of fish consumed per eating occasion was observed to be 145 g/meal or about 5 ounces as reported in the study of Pac et al. (1982). The range reported for the size of the fish meal was from 43 g/meal (5th percentile) to 565 g/meal (99th percentile). The study was based on the results of a self-administered USDA nationwide consumption survey from 1977-78 of individuals in 48 states. The amount of fish corresponds to consumption habits for fin-fish as reported on a wet weight basis. It does not include shellfish. Although fish consumption habits have likely increased over the past 15 years, the Pac study was believed to be the best study available upon which to base a default value.

Owing to the very site-specific nature of the frequency of this exposure, no defaults are given at this time for exposure frequency (fish meals/year). However, estimates of the average and 90th - 95th percentile for the frequency of exposure should be used for the central tendency and RME respectively. Default values for exposure duration are those which are consistent with residential default values previously identified of 2 years for the central tendency and 30 years for the RME. Additionally, it was believed that a site-specific value for the fraction of fish consumed from the contaminated source was appropriate rather than establishing a default value for this factor. The average and the 90th - 95th percentile values are suggested for the central tendency and RME for this parameter respectively.

10.0 INGESTION OF PRODUCE

The following approach has been suggested for this exposure pathway provided it is relevant to the risk evaluation:

- a. Strongly consider evaluating consumption of homegrown produce if it constitutes a current exposure pathway and if produce is available for analysis. If produce is not available for analysis, evaluation of this exposure pathway is open to the discretion of the Regional Office (recognizing that this decision is apt to depend on the level of confidence in available plant uptake models).
- b. If the decision is made to employ an uptake model, the Region is strongly encouraged to seek the assistance and/or review of the proposed approach by ECAO-Cincinnati.
- c. When evaluating this exposure pathway, preference should be given for site specific consumption rates (obtainable via door to door surveys) if feasible. When site specific consumption rates are not feasible, either generic defaults regarding total consumption rates for all fruits combined or all vegetables combined (USDA 1980) or defaults based on the

average amount of a fruit or vegetable consumed on a given eating occasion (Pao et al. 1982) together with site specific exposure frequencies is suggested.

d. The fraction ingested assumed to originate from a contaminated source will always be a site specific determination.

The choice of which of the approaches described below should be utilized for the identification of default ingestion rate values is left up to the risk assessor based on their understanding of the site. The USDA (1980) results are based on the average consumption rate as self-reported over a three day period and included non-consumers as well as consumers in the calculation. In contrast, the data of interest from Pao et al. (1982) focused on the amount consumed of various food crops for a given eating occasion. ~~It is suggested that when default values are used, the same ingestion rate utilized for the central tendency is advocated for use in evaluating the RME scenario.~~ It is suggested that in these instances, merely the exposure frequency, duration, and the fraction ingested from the contaminated source vary between the central tendency and the RME evaluations.

10.1 Total Produce Consumption Rates (USDA 1980, U.S. EPA 1990)

As summarized in the EFR (U.S. EPA 1990), the USDA estimated the average intake on any one day of ~~all~~ fruits combined as 142 g/day per person and approximately 1/5 of this (28 g/day) could be assumed to be homegrown on average or as much as 3/10 of this (43 g/day) could be assumed to be homegrown as a reasonable maximum exposure case.

The average intake on any one day for ~~all~~ vegetables combined was estimated as 201 g/day. Furthermore, approximately 1/4 (50 g/day) of this amount could be assumed to be homegrown on average and as much as 2/5 (80 g/day) could be assumed to be homegrown as a reasonable maximum exposure case.

Due to the nature of the study, (a daily average intake over a three day exposure period), it can be assumed that the contact rates represent a chronic value. If this approach is selected, then the exposure frequency for the central tendency and RME should be 350 days/year. The default exposure duration reflects the residential central tendency value of ~~30 years~~ or 30 years for the RME scenario. Assumptions regarding the fraction ingested from the contaminated source are not specified though national averages for the fraction that can be assumed to be homegrown have been suggested as a described above.

10.2 Crop Specific Consumption Habits (Pao et al. 1982)
As summarized in the attached table, average values for the amount of a particular fruit or vegetable consumed on a given eating occasion can be identified based on the results of a nationwide survey conducted by the USDA as summarized in Pao et al. (1982). Additionally, the authors' reported the distribution of consumption values observed for each fruit or vegetable included in the survey. The Pao et al. data was based on the USDA nationwide food consumption survey conducted in 1977-78.

Default values for the frequency of exposure have not been identified and are subject to site-specific determinations reflecting local consumption habits. The default exposure duration reflects the residential central tendency value of 9 years or 30 years for the R₁₀ scenario. The fraction ingested originating from the contaminated source has not been specified but is open to consideration of site-specific factors.

**SUMMARY OF STANDARD DEFAULT EXPOSURE FACTORS
PRELIMINARY REVIEW DRAFT (5/5/93)**

CENTRAL TENDENCY

Exposure Pathway	Contact Rate	Frequency	Duration	Body Weight
1. Ingestion of Drinking Water				
1a. Residential	1.4 l/day	350 ^(a)	9 years	70 kg
1b. Occupational?	12 ^(b)	250 ^(b)	15 ^(b)	70 kg
2. Ingestion of Soil and Dusts²				
2a. Child - residential	100 mg/day	350 days/yr ¹	2 years	15 kg
2b. Adult - Non-contact residential	50 mg/day	350 days/yr ¹	7 years	70 kg
2c. Adult - Non-contact occupational	50 mg/day	?	?	70 kg
2d. Adult - Contact Intensive	data insufficient (100)			
3. Inhalation				
3a. Residential	20 m ³ /day	234 days/yr	9 years	70 kg
3b. Occupational?	?	?	?	70 kg
4. Fish Ingestion²	145 g/meal	site specific average	9 years	70 kg
5. Ingestion of Produce²	142 g/day (fruit) 201 g/day (veg.) or produce specific value for amount per meal (see attachment)	350 days/yr for values indicated or site-specific average if use amt./meal	9 years	70 kg

REASONABLE MAXIMUM EXPOSURE

Exposure Pathway	Contact Rate	Frequency	Duration	Body Weight
1. Ingestion of Drinking Water				
1a. Residential	2 l/day	350 days/yr	30 years	70 kg
1b. Occupational?	12 ^(a)	250 ^(a)	12.5 ^(a)	70 kg
2. Ingestion of Soil and Dusts²				
2a. Child - residential	200 mg/day	350 days/yr ¹	6 years	15 kg
2b. Adult - Non-contact residential	100 mg/day	350 days/yr ¹	24 years	70 kg
2c. Adult - Non-contact occupational	100 mg/day	250 days/yr ¹	25 years	70 kg
2d. Adult - Contact Intensive	480 mg/day	site-specific	site-specific	70 kg
3. Inhalation				
3a. Residential	20 m ³ /day	350 days/yr	30 years	70 kg
3b. Occupational?	?	250 days/yr	25 years	70 kg
4. Fish Ingestion²	145 g/meal	site-specific 90-95th %	30 years	70 kg
5. Ingestion of Produce²	142 g/day (fruit) 201 g/day (veg.) or produce specific value for amount per meal (see attachment)	350 days/yr for values indicated or site-specific 90-95th % if use amt./meal	30 years	70 kg

¹ Adjustments based on behavioral or physiological conditions may be warranted based on site-specific conditions and Regional policies.

² Though not specified, exposure pathway should include a site-specific value for the fraction ingested originating from the contaminated source.

(a) CSWR Directive 728E-4-02
(b) Chemical Lab State 17

Attachment 2

Quantity Consumed Per Eating Occasion of Various Fruits and Vegetables (grams)
 Pau et. al. 1982

Food category	avg.	std. dev.	Percentile							
			5th	25th	50th	75th	90th	95th	99th	Max.
Fruit										
fresh grapefruit	159	58	106	134	134	165	268	268	330	660
fresh oranges	146	57	79	145	145	145	180	228	360	1160
raw apples	141	49	69	139	139	139	212	212	270	638
bananas	106	37	60	95	119	119	136	136	238	478
cantaloup	171	91	61	136	136	272	272	272	529	896
raw pears	163	69	82	164	164	164	164	328	328	2132
raw peaches	180	76	70	152	152	152	304	304	456	760
raisins	35	26	9	14	28	43	73	73	145	290
raw strawberries	100	58	37	75	75	149	149	180	298	447
Raw Vegetables										
white potatoes	125	90	29	63	105	170	235	280	426	1260
cabbage /cole slaw	68	45	18	40	60	90	120	120	240	1020
raw carrots	43	40	4	13	31	55	100	122	163	600
raw celery	33	24	8	17	28	40	60	80	120	204
raw cucumbers	80	76	8	24	70	110	158	220	318	840
lettuces/leafed salads	65	59	10	20	55	93	140	185	270	1080
raw onions	31	33	3	17	18	36	57	72	180	360
raw tomatoes	81	55	30	46	62	113	123	162	246	728
Cooked Vegetables										
cooked broccoli	112	68	30	78	90	165	185	190	350	680
cooked cabbage	128	83	28	75	145	180	225	300	450	610
cooked carrots	79	60	18	46	75	92	180	185	276	738
corn on/off cob	95	56	21	65	83	123	170	170	330	650
lima beans	110	75	21	67	88	170	175	219	350	875
cow peas, field peas and blackeye peas	131	88	32	68	88	175	185	350	350	700
cooked green peas	90	57	20	48	55	85	170	170	330	660
cooked spinach	121	70	24	78	103	185	205	205	360	454
string beans	86	64	18	67	70	135	140	140	280	640
cooked summer squash	145	98	27	105	108	215	215	362	490	860
cooked sweet potatoes	136	87	36	86	114	185	225	235	450	1020
cucumber pickles	45	45	7	18	30	65	90	130	222	455

¹ Cooked vegetables includes canned.

REFERENCES

Calabrese, E.J., Barnes, R., Stanek, E.J., Pastides, H., Gilbert, C.E., Veneman, P., Wang, X., Lasztity, A., and P.T. Kosteck. 1989. How Much soil Do Young Children Ingest: an Epidemiologic Study. Reg. Tox. and Pharmac. 10:123-137.

Davis, S., Waller, P., Buschbom, R., Ballou, J. and P. White. 1990. Quantitative Estimates of Soil Ingestion in Normal Children between the Ages of 2 and 7 Years: Population-based Estimates Using Aluminum, Silicon, and Titanium as Soil Tracer Elements. Arc. Environ. Health. 45(2):112-122.

Hawley, J.K. 1985. Assessment of health risk from exposure to contaminated soil. Risk Analysis 5(4): 289-302.

Pao, E.M., Fleming, K.H., Guenther, P.M. et al. 1982. Foods commonly eaten by individuals: amount per day and per eating occasion. U.S. Department of Agriculture. Home Economics Report No. 44.

Sedman, R. 1989. Development of Applied Action Levels for Soil Contact: A Scenario for the Exposure of Humans to Soils in a Residential Setting. Environmental Health Perspectives. Vol 79, pg 291-313.

U.S. Bureau of Labor Statistics. 1990. Statistical summary: tenure with current employer as of January 1987. (transmitted via facsimile, Sept. 7, 1990).

USDA., 1980. U.S. Department of Agriculture. Food and nutrient intakes of individuals in one day in the United States, Spring 1977. Nationwide Food Consumption Survey 1977-1978. Preliminary Report No.2.

U.S. EPA 1989. Risk Assessment Guidance for Superfund: Human Health Evaluation Manual (Part A). EPA/540/1-89-002. December 1989.

U.S. EPA 1989b. Review of the National Ambient Air Quality Standards for Lead: Exposure Analysis Methodology and Validation. USEPA Office of Air Quality Planning and Standards. EPA 450/2-89/011.

U.S. EPA 1990. Exposure Factors Handbook. EPA/600/8-89-043. March 1990.

U.S. EPA 1991. "Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors". OSWER Directive 9285.6-83. March 25, 1991.

U.S. EPA 1992. "Guidance on Risk Characterization for Risk Managers and Risk Assessors. Memorandum from Henry Habicht to Assistant Administrators. Feb. 26, 1992