

APPENDIX E: RADIOLOGICAL ENVIRONMENTAL PROGRAM SUPPLEMENTAL INFORMATION

Appendix Table E-1. Summary of Radioactive Atmospheric Releases by Source

All values under the "Calculated" column through "Totals" column are reported in Curies.

Radionuclide	Half-Life	Calculated (b)	Reactors	Separations (c)	SRNL ^(d)	Total	Percentage of Sum
Gases and Vapors							
H-3 (oxide)	12.35 y	2.08E+03	9.20E+02	1.36E+04		1.66E+04	
H-3 (elemental)	12.35 y			2.47E+03		2.47E+03	
H-3 Total	12.35 y	2.08E+03	9.20E+02	1.61E+04		1.91E+04	87.26
C-14	5730 y	1.30E-06		1.37E-02		1.37E-02	0.00
Kr-85	10.72 y			2.78E+03		2.78E+03	12.74
I-129	1.57E+07 y	5.38E-05		1.87E-03	1.15E-06	1.93E-03	0.00
Particles							
Ag-110m	249.9 d	1.48E-11				1.48E-11	0.00
Am-241	432.2 y	1.12E-05	8.06E-11	2.07E-06		1.33E-05	0.00
Am-243	7380 y	5.26E-09				5.26E-09	0.00
Ce-141	32.501 d	4.94E-11				4.94E-11	0.00
Ce-144	284.3 d	2.00E-08				2.00E-08	0.00
Cm-242	162.8 d	1.89E-16				1.89E-16	0.00
Cm-244	18.11 y	2.79E-07	0.00E+00	1.82E-08		2.97E-07	0.00
Co-60	5.271 y	4.37E-07	0.00E+00	0.00E+00	0.00E+00	4.37E-07	0.00
Cs-134	2.062 y	4.31E-07				4.31E-07	0.00
Cs-137	30 y	1.16E-03	0.00E+00	1.42E-05	4.53E-07	1.18E-03	0.00
Eu-152	13.33 y	5.01E-08				5.01E-08	0.00
Eu-154	8.8 y	3.55E-07				3.55E-07	0.00
Eu-155	4.96 y	1.18E-07				1.18E-07	0.00
F-18	109.77 m	4.00E-02				4.00E-02	0.00
Nb-94	2.03E+04 y	2.42E-07				2.42E-07	0.00
Nb-95	35.15 d	3.63E-07				3.63E-07	0.00

Radionuclide	Half-Life	Calculated (b)	Reactors	Separations (c)	SRNL ^(d)	Total	Percentage of Sum
Ni-59	7.50E+04 y	5.76E-11				5.76E-11	0.00
Ni-63	96 y	5.62E-09				5.62E-09	0.00
Np-237	2.14E+06 y	1.61E-06	0.00E+00	0.00E+00		1.61E-06	0.00
Pa-233	27 d	1.42E-06				1.42E-06	0.00
Pb-212	10.64 h	8.43E-07				8.43E-07	0.00
Pm-147	2.6234 y	2.89E-06				2.89E-06	0.00
Pm-148m	41.3 d	1.90E-12				1.90E-12	0.00
Pr-144	17.28 m	2.00E-08				2.00E-08	0.00
Pu-236	2.851 y	5.75E-10				5.75E-10	0.00
Pu-238	87.74 y	3.15E-05	4.08E-09	4.06E-06		3.55E-05	0.00
Pu-239	2.41E+04 y	4.32E-05	1.07E-10	3.94E-06		4.72E-05	0.00
Pu-240	6537 y	7.73E-06				7.73E-06	0.00
Particles							
Pu-241	14.4 y	2.07E-04				2.07E-04	0.00
Pu-242	3.76E+05 y	1.78E-08				1.78E-08	0.00
Ra-226	1600 y	2.76E-07				2.76E-07	0.00
Ra-228	5.75 y	2.62E-07				2.62E-07	0.00
Rh-106	29.9 s	1.19E-08				1.19E-08	0.00
Ru-103	39.28 d	5.11E-10				5.11E-10	0.00
Ru-106	368.2 d	3.04E-06				3.04E-06	0.00
Sb-125	2.77 y	1.18E-06				1.18E-06	0.00
Sb-126	12.4 d	1.70E-07				1.70E-07	0.00
Se-79	6.50E+04 y	4.90E-09				4.90E-09	0.00
Sm-151	90 y	2.89E-06				2.89E-06	0.00
Sn-123	129.2 d	6.66E-12				6.66E-12	0.00
Sn-126	1.00E+05 y	1.70E-07				1.70E-07	0.00
Sr-89	50.5 d	6.02E-10				6.02E-10	0.00
Sr-90	29.12 y	3.32E-05	2.26E-09	1.12E-05		4.44E-05	0.00
Tc-99	2.13E+05 y	3.87E-07				3.87E-07	0.00
Te-127	9.35 h	1.04E-11				1.04E-11	0.00
Te-129	69.6 m	1.05E-12				1.05E-12	0.00

Radionuclide	Half-Life	Calculated (b)	Reactors	Separations (c)	SRNL ^(d)	Total	Percentage of Sum
Th-228	1.9131 y	7.26E-10	1.38E-10			8.64E-10	0.00
Th-229	7340 y	1.56E-09				1.56E-09	0.00
Th-230	7.70E+04 y	1.55E-10	9.20E-09			9.36E-09	0.00
Th-231	25.52 h	2.12E-04				2.12E-04	0.00
Th-232	1.41E+10 y	1.07E-11	2.42E-09			2.43E-09	0.00
Tl-208	3.07 m	1.41E-06				1.41E-06	0.00
U-232	72 y	6.56E-09				6.56E-09	0.00
U-233	1.59E+05 y	5.78E-09				5.78E-09	0.00
U-234	2.45E+05 y	6.08E-07	1.50E-09	6.41E-06		7.02E-06	0.00
U-235	7.04E+08 y	6.99E-09	0.00E+00	8.19E-07		8.26E-07	0.00
U-236	2.34E+07 y	3.01E-08				3.01E-08	0.00
U-238	4.47E+09 y	2.10E-07	1.66E-09	8.48E-06		8.69E-06	0.00
Y-90	64 h	3.32E-05	2.26E-09	1.12E-05		4.44E-05	0.00
Y-91	58.51 d	7.98E-10				7.98E-10	0.00
Zr-95	63.98 d	1.22E-07				1.22E-07	0.00
Unidentified alpha	N/A	1.79E-05	1.27E-05	2.09E-07	0.00E+00	3.08E-05	0.00
Unidentified beta	N/A	1.43E-03	3.57E-05	6.31E-04	2.55E-06	2.09E-03	0.00
SUM =						2.18E+04	100.00

Note: (a) One curie equals 3.7E+10 becquerels

Note: (b) Estimated releases from unmonitored sources

Note: (c) Includes separations, waste management, and tritium facilities

Note: (d) Savannah River National Laboratory

Appendix Table E-2 Summary of Air Effluent DOE DCS Sum of Fractions for 2015

Facility (Sampling Location)	Radionuclides Included in the DCS Sum of Fractions	DCS Sum of Fractions
A-Area (791-A Sandfilter Discharge)	I-129, Cs-137	1.23E-04
C-Area (C-Area Main Stack (148'))	H-3 (oxide)	1.76E+00
F-Area (235-F Sandfilter Discharge)	U-234, U-235, U-238, Pu-238, Am-241	1.01E-03
F-Area (291-F Stack Isokinetic)	Sr-89/90, I-129, U-234, U-235, U-238, Pu-238, Pu-239, Am-241, Cm-244	5.60E-02
F-Area (772-4F Stack)	U-234, U-238, Pu-238, Pu-239, Am-241	1.92E-03
H-Area (291-H Stack Isokinetic)	Sr-89/90, I-129, Cs-137, U-234, U-238, Pu-238, Pu-239, Am-241, C-14, Kr-85, H-3 (oxide)	2.82E-01
K-Area (K-Area Main Stack (148'))	H-3 (oxide)	1.70E+00
K-Area (KIS Facility)	Sr-89/90, Th-228, Th-230, Th-232, U-234, U-238, Pu-238, Pu-239, Am-241	9.87E-03
L-Area (L-Area Disassembly)	H-3 (oxide)	1.72E+00
L-Area (L-Area Main Stack (148'))	H-3 (oxide)	1.79E+00
Tritium (232-H (200ft))	H-3 (elemental), H-3 (oxide)	2.51E+01
Tritium (233-H)	H-3 (elemental), H-3 (oxide)	1.79E+00
Tritium (234-H)	H-3 (elemental), H-3 (oxide)	1.75E+01
Tritium (238-H)	H-3 (oxide)	2.21E+01
Tritium (264-H)	H-3 (elemental), H-3 (oxide)	3.71E+00

Note: *DOE-STD-1196-2011, Derived Concentration Technical Standard

Appendix Table E-3 Summary of Tritium in Environmental Air

All concentrations are in pCi/m³. Bolded values are detected results. Values not bolded indicate the result was less than the analytical method detection limit or the uncertainty (standard deviation) is large.

Location	Number of Samples	Mean Conc. (std. dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	23	1.69E+02 (1.44E+00)	2.59E+01 (4.50E+00)	4.24E+02 (1.03E+01)
Site Perimeter				
Allendale Gate	25	2.82E+00 (6.52E-01)	-8.81E+00 (4.61E+00)	1.74E+01 (3.49E+00)
Barnwell Gate	25	3.47E+00 (6.22E-01)	-2.89E+00 (4.32E+00)	1.38E+01 (2.23E+00)
D-Area	25	7.52E+00 (6.49E-01)	-3.78E+00 (3.13E+00)	3.54E+01 (3.12E+00)
Darkhorse @ Williston Gate	25	3.91E+00 (6.06E-01)	-2.89E+00 (3.19E+00)	1.38E+01 (2.26E+00)
East Talatha	25	4.32E+00 (6.39E-01)	-5.05E+00 (4.23E+00)	1.72E+01 (3.80E+00)
Green Pond	25	4.32E+00 (5.94E-01)	-8.97E-01 (3.24E+00)	2.14E+01 (2.48E+00)
Highway 21/167	25	2.65E+00 (6.51E-01)	-5.27E+00 (3.38E+00)	1.45E+01 (2.28E+00)
Jackson	25	3.48E+00 (6.60E-01)	-5.92E+00 (2.82E+00)	1.26E+01 (3.35E+00)
Patterson Mill Road	25	1.99E+00 (6.37E-01)	-4.89E+00 (3.03E+00)	1.41E+01 (2.01E+00)
Talatha Gate	25	5.70E+00 (7.06E-01)	-6.78E-01 (2.99E+00)	1.81E+01 (2.11E+00)
25-Mile Radius				
Aiken Airport	25	2.13E+00 (6.86E-01)	-4.46E+00 (2.65E+00)	9.46E+00 (2.95E+00)
Augusta Lock and Dam 614	24	2.12E+00 (6.42E-01)	-5.43E+00 (3.61E+00)	1.31E+01 (2.77E+00)
Control Location (Highway 301 @ State Line)	25	3.46E+00 (6.70E-01)	-3.59E+00 (3.02E+00)	1.77E+01 (3.55E+00)

Appendix Table E-4 Summary of Radionuclides in Rain Ion Columns

All concentrations are in pCi/m². Bolded values are detected results. Values not bolded indicate the result was less than the analytical method detection limit or the uncertainty (standard deviation) is large.

Location	Sr-89/90			
	# of Samples (# of detects)	Mean Conc. (std.dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	11 (1)	2.53E+00 (4.60E-01)	-1.77E+00 (1.2E+00)	6.08E+00 (1.77E+00)
Site Perimeter				
D-Area	11 (0)	8.86E-01 (4.19E-01)	-9.16E-01 (1.60E+00)	2.38E+00 (1.52E+00)
Darkhorse @ Williston Gate	11 (0)	3.31E-01 (3.94E-01)	-1.53E+00 (1.21E+00)	1.89E+00 (1.32E+00)
Green Pond	11 (0)	4.55E-01 (3.96E-01)	-3.08E-01 (1.38E+00)	1.42E+00 (1.42E+00)
Patterson Mill Road	11 (1)	6.07E-01 (3.70E-01)	1.82E+00 (1.01E+00)	2.54E+00 (6.38E-01)
25-Mile Radius				
Control Location (Highway 301 @ State Line)	11 (0)	4.97E-01 (3.98E-01)	-5.46E-01 (1.31E+00)	2.05E+00 (1.55E+00)

Location	U-234			
	# of Samples (# of detects)	Mean Conc. (std.dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	11 (5)	6.79E-02 (9.83E-03)	7.14E-03 (1.89E-02)	1.17E-01 (4.26E-02)
Site Perimeter				
D-Area	11 (7)	8.40E-02 (1.06E-02)	7.86E-03 (2.05E-02)	1.73E-01 (4.77E-02)
Darkhorse @ Williston Gate	11 (4)	5.74E-02 (9.06E-03)	1.18E-02 (2.49E-02)	9.32E-02 (3.60E-2)
Green Pond	11 (5)	8.67E-02 (1.02E-02)	1.99E-02 (2.40E-02)	2.35E-01 (5.43E-02)
Patterson Mill Road	11 (5)	6.57E-02 (9.24E-03)	-8.32E-03 (8.17E-03)	1.49E-01 (4.63E-02)
25-Mile Radius				
Control Location (Highway 301 @ State Line)	11 (3)	7.05E-02 (9.94E-03)	1.62E-02 (1.93E-02)	1.70E-01 (4.98E-02)

Location	U-235			
	# of Samples (# of detects)	Mean Conc. (std.dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	11 (0)	1.63E-02 (7.63E-03)	-4.59E-02 (2.66E-02)	6.43E-02 (5.34E-02)
Site Perimeter				
D-Area	11 (0)	2.33E-02 (7.17E-03)	-9.27E-03 (9.28E-03)	7.46E-02 (3.95E-02)
Darkhorse @ Williston Gate	11 (0)	1.77E-02 (6.66E-03)	-4.97E-03 (1.42E-02)	6.54E-02 (3.35E-02)
Green Pond	11 (1)	3.09E-02 (7.13E-03)	-1.96E-02 (1.39E-02)	7.30E-02 (3.35E-03)
Patterson Mill Road	11 (0)	1.63E-02 (5.98E-03)	-9.30E-03 (9.32E-03)	3.32E-02 (2.40E-02)
25-Mile Radius				
Control Location (Highway 301 @ State Line)	11 (0)	2.52E-02 (7.09E-03)	-2.34E-02 (1.64E-02)	6.92E-02 (3.17E-02)

Location	U-238			
	# of Samples (# of detects)	Mean Conc. (std.dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	11 (4)	6.62E-02 (9.54E-03)	3.08E-03 (1.35E-02)	1.54E-01 (4.49E-02)
Site Perimeter				
D-Area	11 (7)	8.55E-02 (1.04E-02)	3.65E-03 (1.44E-02)	1.39E-01 (4.55E-02)
Darkhorse @ Williston Gate	11 (3)	4.37E-02 (8.08E-03)	-8.11E-03 (7.84E-03)	1.19E-01 (4.12E-02)
Green Pond	11 (7)	6.69E-02 (9.45E-03)	1.65E-02 (1.97E-02)	9.19E-02 (3.36E-02)
Patterson Mill Road	11 (1)	4.95E-02 (8.55E-03)	2.11E-02 (2.63E-02)	1.33E-01 (4.01E-02)
25-Mile Radius				
Control Location (Highway 301 @ State Line)	11 (6)	7.05E-02 (9.89E-03)	-4.54E-03 (1.75E-02)	1.65E-01 (4.59E-02)

Location	Pu-238			
	# of Samples (# of detects)	Mean Conc. (std.dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	11 (1)	1.82E-02 (5.65E-03)	-1.16E-02 (1.74E-02)	7.81E-02 (3.02E-02)
Site Perimeter				
D-Area	11 (1)	1.80E-02 (5.41E-03)	-7.76E-03 (7.62E-03)	8.38E-02 (3.23E-02)
Darkhorse @ Williston Gate	11 (0)	1.15E-02 (5.13E-03)	-1.51E-02 (1.07E-02)	5.73E-02 (3.13E-02)
Green Pond	11 (1)	1.38E-02 (4.82E-03)	-8.43E-03 (8.17E-03)	8.62E-02 (3.48E-02)
Patterson Mill Road	11 (0)	6.56E-03 (4.98E-03)	-9.46E-03 (9.28E-03)	2.66E-02 (1.90E-02)
25-Mile Radius				
Control Location (Highway 301 @ State Line)	11 (1)	2.44E-02 (5.75E-03)	-2.32E-02 (1.34E-02)	8.22E-02 (3.17E-02)

Location	Pu-239			
	# of Samples (# of detects)	Mean Conc. (std.dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	11 (0)	1.08E-02 (5.30E-03)	-1.86E-02 (1.82E-02)	4.32E-02 (2.89E-02)
Site Perimeter				
D-Area	11 (0)	1.84E-02 (5.49E-03)	-1.19E-02 (1.82E-02)	4.43E-02 (2.30E-02)
Darkhorse @ Williston Gate	11 (0)	9.59E-03 (4.83E-03)	-1.49E-02 (1.06E-02)	4.38E-02 (2.92E-02)
Green Pond	11 (0)	9.45E-03 (4.76E-03)	-1.90E-02 (1.89E-02)	3.86E-02 (2.52E-02)
Patterson Mill Road	11 (0)	-1.50E-03 (4.88E-03)	-3.97E-02 (1.76E-02)	2.11E-02 (1.51E-03)
25-Mile Radius				
Control Location (Highway 301 @ State Line)	11 (2)	2.01E-02 (5.61E-03)	-4.32E-03 (1.60E-02)	7.05E-02 (2.92E-02)

Location	Am-241			
	# of Samples (# of detects)	Mean Conc. (std.dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	11 (4)	5.84E-02 (8.59E-03)	2.64E-02 (2.24E-02)	1.18E-01 (3.91E-02)
Site Perimeter				
D-Area	11 (4)	5.93E-02 (9.37E-03)	2.38E-02 (1.83E-03)	1.01E-01 (3.74E-02)
Darkhorse @ Williston Gate	11 (5)	6.85E-02 (9.72E-03)	3.27E-02 (2.04E-02)	1.65E-01 (4.81E-02)
Green Pond	11 (5)	5.38E-02 (8.27E-03)	3.78E-03 (1.56E-02)	1.23E-01 (4.02E-02)
Patterson Mill Road	11 (4)	4.81E-02 (8.17E-03)	2.95E-03 (1.44E-02)	7.86E-02 (3.53E-02)
25-Mile Radius				
Control Location (Highway 301 @ State Line)	11 (4)	4.75E-02 (7.77E-03)	3.35E-03 (1.51E-02)	1.09E-01 (4.00E-02)

Location	Cm-244			
	# of Samples (# of detects)	Mean Conc. (std.dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	11 (2)	1.43E-02 (4.88E-03)	-8.41E-03 (8.12E-03)	5.89E-02 (2.66E-02)
Site Perimeter				
D-Area	11 (0)	9.87E-03 (4.63E-03)	-9.68E-03 (9.67E-03)	5.81E-02 (2.64E-02)
Darkhorse @ Williston Gate	11 (0)	1.18E-02 (5.20E-03)	-1.72E-02 (1.18E-02)	3.73E-02 (2.25E-02)
Green Pond	11 (1)	1.57E-02 (4.72E-03)	-1.61E-04 (6.99E-04)	6.32E-02 (2.63E-02)
Patterson Mill Road	11 (1)	7.92E-03 (4.58E-03)	-8.19E-03 (8.19E-03)	5.32E-02 (2.97E-02)
25-Mile Radius				
Control Location (Highway 301 @ State Line)	11 (0)	1.25E-02 (4.96E-03)	-1.61E-04 (7.05E-04)	4.08E-02 (2.38E-02)

Location	Gross B			
	# of Samples (# of detects)	Mean Conc. (std.dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	11 (10)	4.00E+01 (1.49E+00)	7.41E+00 (3.12E+00)	6.32E+01 (6.24E+00)
Site Perimeter				
D-Area	11 (11)	7.68E+01 (1.95E+00)	2.73E+01 (4.50E+00)	1.33E+02 (6.09E+00)
Darkhorse @ Williston Gate	11 (11)	3.37E+01 (1.39E+00)	1.61E+01 (3.63E+00)	5.27E+01 (4.05E+00)
Green Pond	11 (11)	3.33E+01 (1.37E+00)	9.51E+00 (3.14E+00)	6.95E+01 (4.55E+00)
Patterson Mill Road	11 (10)	2.60E+01 (1.29E+00)	-5.97E-01 (2.41E+00)	4.81E+01 (5.48E+00)
25-Mile Radius				
Control Location (Highway 301 @ State Line)	11 (10)	3.01E+01 (1.35E+00)	7.57E+00 (3.17E+00)	6.38E+01 (6.17E+00)

Location	Gross A			
	# of Samples (# of detects)	Mean Conc. (std.dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	11 (1)	1.52E+00 (4.48E-01)	-7.49E-01 (3.78E-01)	5.57E+00 (2.45E+00)
Site Perimeter				
D-Area	11 (1)	1.79E+00 (4.53E-01)	-1.14E-01 (1.04E+00)	6.84E+00 (1.91E+00)
Darkhorse @ Williston Gate	11 (0)	7.70E-01 (3.51E-01)	-7.57E-01 (2.81E-01)	3.05E+00 (1.34E+00)
Green Pond	11 (1)	9.42E-01 (3.60E-01)	-6.65E-01 (4.36E-01)	4.81E+00 (1.61E+00)
Patterson Mill Road	11 (0)	8.72E-01 (3.74E-01)	-6.49E-01 (5.13E-01)	3.08E+00 (1.94E+00)
25-Mile Radius				
Control Location (Highway 301 @ State Line)	11 (0)	5.54E-01 (3.39E-01)	-6.84E-01 (3.53E-01)	2.11E+00 (1.64E+00)

All Co-60 and Cs-137 results were non-significant and thus, not reported on this table.

Appendix Table E-5 Summary of Tritium in Rainwater

Samples were collected approximately every 4 weeks at each of 13 locations. All concentrations are in pCi/L. Bolded values are detected results. Values not bolded indicate the result was less than the analytical method detection limit or the uncertainty (standard deviation) is large.

The results at the following locations were all not detected: Site Perimeter (Allendale Gate, Barnwell Gate, Darkhorse @ Williston Gate, Highway 21/167, Jackson, Patterson Mill Road) and 25-Mile Radius (Aiken Airport, Augusta Lock and Dam 614 and Highway 301 @ State Line). The Highway 301 @ State Line location is the control location.

Location	# of Detected Results	Mean Conc. (std. dev.)	Minimum Conc. (std. dev.)	Maximum Conc. (std. dev.)
Onsite				
Burial Ground North	13	3.43E+03 (6.08E+1)	1.30E+03 (1.59E+02)	5.54E+03 (2.70E+02)
Site Perimeter				
D-Area	2	1.70E+02 (3.82E+01)	-2.43E+02 (1.50E+02)	6.51E+02 (1.41E+02)
East Talatha	1	3.98E+01 (3.71E+01)	-2.97E+02 (1.50E+02)	5.05E+02 (1.40E+02)
Green Pond	1	6.99E+01 (3.72E+01)	-2.86E+02 (1.22E+02)	6.78E+02 (1.40E+02)
Talatha Gate	1	4.82E+01 (3.70E+01)	-1.17E+02 (1.54E+02)	4.16E+02 (1.30E+02)

Appendix Table E-6 Summary of Radionuclides in Soil

Bolded values are detected results. Values not highlighted indicate the result was less than the analytical method detection limit or the uncertainty is large.

The following locations are sampled: F-Area (2000 feet West), H-Area (2000 ft East), Z-Area (#3), Burial Ground Locations (643-26E-2 and Burial Ground North), Plant Perimeter Locations (Allendale Gate, Barnwell Gate, D-Area, Darkhorse @ Williston Gate, East Talatha, Green Pond, Highway 21/167, Jackson, Patterson Mill Road, and Talatha Gate) and 25-Miles Radium Locations (Aiken Airport, August Lock and Dam 614, and Highway 301 @ State Line). The Highway 301 @ State Line is the control Location.

Radionuclide	# of Detected Results	Control - HWY 301 Conc. (pCi/g)	Location of Minimum Conc.	Minimum Conc. (pCi/g)	Location of Maximum Conc.	Maximum Conc. (pCi/g)
Cs-137	17 of 18	1.51E-01	Burial Ground (643-26E-2)	-1.85E-02	Darkhorse @ Williston Gate	3.70E-01
Sr-89/90	1 of 18	1.68E-02	Green Pond	-4.57E-02	D-Area	1.34E-01
U-234	18 of 18	1.79E+00	Aiken Airport	4.81E-01	Burial Ground (643-26E-2)	3.73E+00
U-235	16 of 18	8.38E-02	Barnwell Gate	3.08E-03	Burial Ground (643-26E-2)	1.82E-01
U-238	18 of 18	1.76E+00	Allendale Gate	4.38E-01	Burial Ground (643-26E-2)	3.73E+00
Pu-238	6 of 18	5.03E-04	Darkhorse @ Williston Gate	0.00E+00	F-Area (2000 Feet West)	3.03E-02
Pu-239	18 of 18	5.73E-03	Burial Ground (643-26E-2)	1.29E-03	H-Area (2000 Feet East)	1.04E-01
Am-241	10 of 12	2.76E-03	Burial Ground North	8.22E-04	Burial Ground (643-26E-2)	1.62E-01
Cm-244	1 of 12	0.00E+00	Talatha Gate	-1.65E-04	Burial Ground (643-26E-2)	2.81E-02
Gross Beta	16 of 18	1.04E+01	F-Area	2.57E+00	Burial Ground (643-26E-2)	1.74E+01
Gross Alpha	15 of 18	1.14E+01	Aiken Airport	8.89E-01	Burial Ground (643-26E-2)	2.17E+01

Appendix Table E-7 Summary of Radionuclides in Grassy Vegetation

Bolded values are detected results. Values not bolded indicate the result was less than the analytical method detection limit or the uncertainty is large. All results for Co-60, Np-237, and Cm-244 were not detected; thus, not reported in this table.

The following locations are sampled: Control (Highway 301 at the SC/GA State line), Onsite location (Burial Ground North), Site Perimeter locations (Allendale Gate, Barnwell Gate, D-Area, Darkhorse @ Williston Gate, East Talatha, Green Pond, Highway 21/167, Jackson, Patterson Mill Road, Talatha Gate), and 25-Mile Radius locations (Aiken Airport and the Augusta Lock and Dam 614). Samples are collected annually, except as noted in the table.

Radionuclide	# of Detected Results	Control (Highway 301) Conc. (pCi/g)	Location of Minimum Conc.	Minimum Conc. (pCi/g)	Location of Maximum Conc.	Maximum Conc. (pCi/g)
H-3	4 of 14	4.19E-02	Jackson	-1.09E-02	Patterson Mill Road	1.76E-01
Cs-137	10 of 14	2.56E-01	Burial Ground North	-9.76E-03	Allendale Gate	5.00E-01
Sr-89/90	14 of 14	1.05E-01	Darkhorse @ Williston Gate	1.01E-01	East Talatha	5.11E-01
U-234	14 of 14	4.11E-03	Highway 21/167	6.19E-04	Burial Ground North	1.26E-02
U-235	1 of 14	2.45E-04	East Talatha	0.00E+00	Burial Ground North	1.08E-03
U-238	14 of 14	3.41E-03	Barnwell Gate	6.78E-04	Burial Ground North	1.19E-02
Pu-238	1 of 14	-1.21E-04	Green Pond	-1.62E-04	D-Area	5.57E-04
Pu-239	1 of 14	8.49E-05	Jackson	-1.34E-04	Highway 21/167	2.30E-03
Am-241	1 of 14	-6.19E-06	Aiken Airport	-6.57E-05	Highway 21/167	6.92E-04
Tc-99	14 of 14	1.69E-01	Highway 301	1.69E-01	Green Pond	1.49E+00
Gross Beta	15 of 15	8.59E+00	East Talatha* (December 2015)	6.78E+00	East Talatha* (April 2015)	2.06E+01
Gross Alpha	1 of 15	2.34E-01	Aiken Airport	-1.39E-01	East Talatha* (April 2015)	2.20E+00

NOTE: * Samples were collected from all locations in April 2015. A sample was collected from the East Talatha gate location in December 2015 and analyzed for gross alpha and gross beta, only.

Appendix Table E-8 Summary of Radionuclides in Foodstuffs

Units are in pCi/g. Highlighted concentration boxes were reported as detected. Boxes not highlighted indicate the result was less than the analytical method detection limit or the uncertainty is large.

Food Type	Nuclide	Number of Samples	Number of Results > Detection Limit	Mean Sample Conc.	Minimum Sample Conc.	Maximum Sample Conc.
Beef	U-234	3	3	6.53E-05	5.35E-05	7.57E-05
	U-238	3	3	1.13E-04	8.49E-05	1.45E-04
	Gross Beta	3	3	2.14E+00	1.42E+00	2.55E+00
H-3, Cs-137, Co-60, Np-237, Pu-238, Pu-239, Am-241, Cm-244, Sr-90, U-235, Tc-99 and Gross Alpha were not detected in Beef						
Greens	H-3	5	1	3.06E-02	-8.05E-03	1.05E-01
	Cs-137	5	1	1.77E-02	3.27E-03	3.97E-02
	Sr-90	5	4	1.14E-01	1.79E-02	1.84E-01
	U-234	5	5	1.36E-02	9.70E-04	3.03E-02
	U-235	5	2	6.46E-04	1.14E-04	1.25E-03
	U-238	5	5	1.28E-02	1.09E-03	2.84E-02
	Tc-99	5	5	3.95E-01	1.87E-01	7.43E-01
	Gross Beta	5	5	1.87E+01	9.00E+00	2.64E+01
	Gross Alpha	5	2	4.07E-01	6.14E-02	1.15E+00
Co-60, Np-237, Pu-238, Pu-239, Am-241 and Cm-244 were not detected in Greens						
Fruit (watermelon)	Tc-99	5	1	2.49E-02	1.58E-02	3.41E-02
	Gross Beta	5	5	5.99E-01	4.51E-01	8.78E-01
H-3, Cs-137, Co-60, Np-237, Pu-238, Pu-239, Am-241, Cm-244, Sr-90, U-234, U-235, U-238 and Gross Alpha were not detected in Fruit						
Corn	H-3	5	1	-2.40E-01	-3.35E+01	4.35E+01
	Cs-137	5	1	2.12E+00	1.24E+00	5.49E+00
	U-234	5	1	2.89E-01	7.43E-02	8.73E-01
	Gross Beta	5	5	7.67E+03	6.81E+03	9.08E+03
Co-60, Np-237, Pu-238, Pu-239, Am-241, Cm-244, Sr-90, U-235, U-238, Tc-99 and Gross Alpha were not detected in Corn						
Pecans	Cs-137	5	2	7.10E+00	1.23E+00	1.46E+01
	Sr-90	5	1	2.81E+01	2.68E+00	7.03E+01
	U-234	5	1	5.61E-01	2.06E-01	1.22E+00
	U-238	5	1	3.64E-01	1.20E-01	4.95E-01
	Gross Beta	5	5	4.63E+03	3.59E+03	6.89E+03
	Gross Alpha	5	2	1.71E+02	9.19E+01	2.78E+02
H-3, Co-60, Np-237, Pu-238, Pu-239, Am-241, Cm-244, U-235 and Tc-99 were not detected in Pecans						

Appendix Table E-9 Summary of Radionuclides in Cow's Milk

The dairies that are sampled are locations in communities surround SRS. The number listed in parentheses after the state in which the dairies are located, indicates the number of dairies that provide samples to SRS.

Bolded results were reported as detected. Results not highlighted indicate the result was less than the analytical method detection limit or the uncertainty is large. All tritium and Co-60 results were not detected; thus, not reported in this table.

Location	Nuclide	Number of Samples	Number of Results > Detection Limit	Mean Sample Conc. (pCi/L)	Minimum Sample Conc. (pCi/L)	Maximum Sample Conc. (pCi/L)
SC-Dairies (4)	Cs-137	16	1	8.47E-01	-8.00E-01	3.54E+00
GA-Dairies (4)	Cs-137	16	1	9.98E-01	-8.92E-01	3.68E+00
SC-Dairies (4)	Sr-90	16	2	6.77E-01	-6.78E-01	2.81E+00
GA-Dairies (4)	Sr-90	16	0	1.36E-01	-1.01E+00	1.05E+00

Appendix Table E-10 Radiation in Liquid Release Sources

All values under the three Areas columns and the "Totals" column are reported in Curies.

Radionuclide	Half-Life	Reactor Areas C,K,L,P,R	Separations Areas F,H,S,Z, Tritium	SRNL Area A	Totals	Percentage of Sum
H-3 ^a	12.35y	2.39E+02	4.98E+02	1.23E-02	7.37E+02	99.96%
C-14	5730y		2.56E-03	2.04E-03	4.60E-03	0.00%
Sr-90	29.12y	0.00E+00	2.43E-02		2.43E-02	0.00%
Tc-99	2.13E+05y		1.30E-02	0.00E+00	1.30E-02	0.00%
I-129	1.57E+07y		1.44E-02	0.00E+00	1.44E-02	0.00%
Cs-137 ^b	30.0y	0.00E+00	1.08E-02	0.00E+00	1.08E-02	0.00%
U-234	2.45E+05y		6.77E-02	3.88E-05	6.77E-02	0.01%
U-235	7.04E+08y		2.50E-03	1.23E-06	2.50E-03	0.00%
U-238	4.47E+09y		7.55E-02	2.64E-05	7.55E-02	0.01%
Np-237	2.14E+06y		3.21E-07		3.21E-07	0.00%
Pu-238	87.74y		5.11E-04	2.03E-06	5.13E-04	0.00%
Pu-239	2.41E+04y		1.10E-04	0.00E+00	1.10E-04	0.00%
Am-241	432.2y		1.79E-04		1.79E-04	0.00%
Cm-244	18.11y		1.21E-04		1.21E-04	0.00%
Alpha ^c	N/A	6.41E-03	1.79E-03	3.92E-04	8.60E-03	0.00%
Beta-Gamma ^d	N/A	8.81E-02	6.63E-03	5.61E-04	9.53E-02	0.01%
Sum					7.37E+02	100.00%

NOTE: (a) The tritium release total, which includes direct + migration releases, is used in the dose calculations for SRS impacts.

NOTE: (b) Depending on which value is higher, the Cs-137 release total is based on concentrations measured in RM 118.8 fish or on the actual measured effluent release total from the site. Refer to chapter 6 (Dose) for more information.

NOTE: (c,d) For dose calculations, unidentified alpha and beta/gamma releases are assumed to be Pu-239 and Sr-90, respectively.

Appendix Table E-11 Summary of Liquid Effluent DOE DCS Sum of Fractions by Facility for 2015

Facility (sampling location)	Radionuclides Included in the Sum of Fractions	DCS Sum of Fractions
A-Area (TB-2 Outfall at Road 1A)	H-3, C-14, Co-60, I-129, Cs-137, U-234, U-235, U-238, Pu-238, Pu-239, Tc-99	8.70E-04
F-Area (F-013 200-F Cooling Basin)	H-3, Co-60, Sr-89/90, I-129, Cs-137, U-234, U-235, Np-237, U-238, Pu-238, Pu-239, Am-241, Cm-244, Tc-99	3.50E-03
F-Area (F-05)	H-3, C-14, Co-60, Sr-89/90, I-129, Cs-137, U-234, U-235, Np-237, U-238, Pu-238, Pu-239, Am-241, Cm-244, Tc-99	6.54E-03
F-Area (FM-3 F-Area Effluent)	H-3, C-14, Co-60, Sr-89/90, I-129, Cs-137, U-234, U-235, Np-237, U-238, Pu-238, Pu-239, Am-241, Cm-244, Tc-99	3.04E-03
F-Tank Farm (F-012 281-8F Retention Basin)	H-3, Co-60, Sr-89/90, I-129, Cs-137, U-234, U-235, Np-237, U-238, Pu-238, Pu-239, Am-241, Cm-244, Tc-99	6.20E-03
H-Area (FM-1C H-Area Effluent)	H-3, C-14, Co-60, Sr-89/90, Cs-137, U-234, U-235, Np-237, U-238, Pu-238, Pu-239, Am-241, Cm-244	3.13E-03
H-Area (H-004)	H-3, Co-60, Sr-89/90, Cs-137, U-234, U-235, U-238, Pu-238, Pu-239	6.30E-03
H-ETP (U3R-2A ETP Outfall at Road C)	H-3, C-14, Co-60, Sr-89/90, Cs-137, U-234, U-235, Np-237, U-238, Pu-238, Pu-239, Am-241, Cm-244	6.91E-01
H-Tank Farm (H-017 281-8H Retention Basin)	H-3, Co-60, Sr-89/90, I-129, Cs-137, U-234, U-235, Np-237, U-238, Pu-238, Pu-239, Am-241, Cm-244, Tc-99	2.61E-02
H-Tank Farm (HP-52 H-Area Tank Farm)	H-3, Co-60, Sr-89/90, Cs-137, U-234, U-235, U-238, Pu-238, Pu-239, Am-241, Cm-244	2.44E-03
K-Area (K Canal)	H-3, Co-60, Sr-89/90, Cs-137	3.00E-04
L-Area (L-07)	H-3, Co-60, Sr-89/90, Cs-137	3.52E-04
S-Area (S-004)	H-3, Co-60, Sr-89/90, Cs-137, U-234, U-235, U-238, Pu-238, Pu-239	3.51E-03
Tritium (HP-15 Tritium Facility Outfall)	H-3, Co-60, Sr-89/90, Cs-137	4.20E-03

Appendix Table E-12 Summary of Radionuclides in Sediments

This table presents each analysis for the sediment samples collected at the river, stream and basin locations where results were detected. Each table includes the respective control location concentration, whether detected or not, as well as the maximum value of the river, stream, and basin samples. Bolded concentration results were reported as detected. Concentrations not bolded indicate the result was less than the analytical method detection limit or the uncertainty is large. All results for Co-60 were not detectable. Np-237 was not detected in all river and basin samples. Thus, these radionuclides are not reported in the tables below.

The following location are the sampling locations: Controls (River Mile 160.5 and Upper Three Runs Creek (U3R)-1A Treadway Bridge RD 8-1), Savannah River Locations (River Miles 118.7, 129, 134.0, 150.2, 151, 152.1, and 157.2), SRS Basin locations (E-05, E-06, EAV Basin North, EAV Basin South, POND 400, SWDF Basin North, SWDF Basin South, Z-01 Outfall and Z Basin), and SRS Stream locations (FM-2 at Road 4, FM-3A Below F-Area Effluent, Four Mile A-7A (Beaver Pond), Four Mile Creek Swamp Discharge, Four Mile Creek at Road A-7, L3R-1A at Road B, L3R-2 Sediment, McQueens Branch (MCQBR) at Monroe Road, MCQBR downstream of Z-Basin, Pen Branch Swamp Discharge, SC-2A 1 mile above Road B, SC-4 Steel Creek at Road A, TB-5 Near Road C, Tinker Creek 1, U3R-4 Sediment, RM 150.4 Sediment, River Mile 160.0 Sediment, R-Area Sediment, U3R-Road-4, Four Mile Creek (FMC)-Road-A, U3R-3, Meyers-Branch, and Pen Branch at Road A).

River Sediment Results			
Radionuclide	Control Conc. (pCi/g)	Location of Maximum Result	Maximum Conc. (pCi/g)
Cs-137	5.81E-02	RM-129 Lower 3 Runs Mouth	5.78E-01
Sr-89/90	1.16E-01	RM-118.7 Highway 301	2.45E-01
U-234	1.22E+00	RM-152.1 Beaver Dam Creek	1.96E+00
U-235	6.24E-02	RM-129 Lower 3 Runs Mouth	5.78E-01
U-238	1.15E+00	RM-152.1 Beaver Dam Creek	1.92E+00
Pu-238	3.24E-04	RM-157.2 Upper 3 Runs Mouth	3.00E-03
Pu-239	8.81E-04	RM-157.2 Upper 3 Runs Mouth	5.81E-03
Am-241	2.33E-03	RM-129 Lower 3 Runs Mouth	1.04E-02
Cm-244	3.24E-04	RM-129 Lower 3 Runs Mouth	6.24E-03
Gross B	2.07E+01	RM-118.7 Highway 301	2.89E+01
Gross A	3.95E+00	RM-157.2 Upper 3 Runs Mouth	2.14E+01

Stream Sediment Results			
Radionuclide	Control Conc. (pCi/g)	Location of Maximum Result	Maximum Conc. (pCi/g)
Cs-137	5.86E-02	R-Area Sediment	1.62E+01
Sr-89/90	9.92E-02	Four Mile A-7A (Beaver Pond)	2.95E-01
U-234	1.08E+00	TB-5 Near Road C	3.32E+00
U-235	5.68E-02	SC-2A 1 mile above Road B	1.92E-01
Np-237	0.00E+00	FM-2 at Road 4	1.62E-02
U-238	1.14E+00	TB-5 Near Road C	3.65E+00
Pu-238	1.11E-03	FM-2 at Road 4	6.65E-01
Pu-239	3.84E-03	FM-2 at Road 4	6.05E-02
Am-241	1.76E-03	Four Mile Creek at Road A-7	5.84E-02
Cm-244	1.98E-04	Four Mile Creek at Road A-7	5.24E-02
Gross B	2.78E+01	SC-2A 1 mile above Road B	3.54E+01
Gross A	3.51E+01	MCQBR downstream of Z-Basin	3.27E+01

Storm Basin Sediment Results			
Radionuclide	Control Conc. (pCi/g)	Location of Maximum Result	Maximum Conc. (pCi/g)
Cs-137	5.86E-02	Z Basin	8.12E+02
Sr-89/90		POND 400	1.46E-01
U-234		Z-01 Outfall	2.75E+00
U-235		POND 400	1.17E-01
U-238		POND 400	2.48E+00
Pu-238		SWDF Basin South (E-001)	2.17E-01
Pu-239	3.84E-03	POND 400	2.92E-01
Am-241	1.76E-03	EAV Basin South (E-003)	1.02E-01
Cm-244		POND 400	1.18E-02
Gross B	2.78E+01	Z Basin	1.06E+03
Gross A	3.51E+01	Z-01 Outfall	2.54E+01

Appendix Table E-13 Summary of Radionuclides in Drinking Water

Units are in pCi/L. Bolded concentration results were reported as detected. Concentrations not bolded indicate the result was less than the analytical method detection limit or the uncertainty is large.

Samples at the Treatment Plants are collected monthly. One onsite location is collected quarterly. All other onsite locations are collected annually. For the annual and quarterly samples, all results for tritium, Co-60, Cs-137, Sr-89/90, Pu-238, Pu-239 and Cm-244 were below detection limits. The treatment plant samples are analyzed for tritium, Co-60, Cs-137, gross alpha and gross beta.

Treatment Plants – Finished Water Summary

Nuclides		Tritium			Co-60		
Locations	Number of Samples	Mean Conc.	Minimum Conc.	Maximum Conc.	Mean Conc.	Minimum Conc.	Maximum Conc.
BJWSA Purrysburg WTP	12	4.02E+02	1.62E+02	8.11E+02	1.34E+00	-1.63E+00	4.97E+00
N. Augusta Public Water Works	12	9.39E+01	-1.07E+01	3.19E+02	1.01E+00	-3.89E+00	4.19E+00

Nuclides		Cs-137		
Locations	Number of Samples	Mean Conc.	Minimum Conc.	Maximum Conc.
BJWSA Purrysburg WTP	12	-8.90E-01	-3.38E+00	1.63E+00
N. Augusta Public Water Works	12	-8.27E-02	-3.70E+00	3.11E+00

Nuclides		Gross Beta			Gross Alpha		
Locations	Number of Samples	Mean Conc.	Minimum Conc.	Maximum Conc.	Mean Conc.	Minimum Conc.	Maximum Conc.
BJWSA Purrysburg WTP	12	1.78E+00	1.54E+00	2.11E+00	7.99E-02	1.29E-02	1.91E-01
N. Augusta Public Water Works	12	1.99E+00	1.52E+00	2.78E+00	9.90E-02	-7.89E-03	3.05E-01

Onsite Location Summary – Quarterly Samples

Nuclides		Gross Beta			Gross Alpha		
Location	Number of Samples	Mean Conc.	Minimum Conc.	Maximum Conc.	Mean Conc.	Minimum Conc.	Maximum Conc.
782-3A quarterly	4	1.26E+00	9.76E-01	1.60E+00	1.43E+00	7.38E-01	2.02E+00

Onsite Location Summary – Annual Samples

Nuclides		U-234	U-235	U-238	Am-241	Gross Beta	Gross Alpha
Location	Number of Samples	Conc.	Conc.	Conc.	Conc.	Conc.	Conc.
617-G	1	4.86E-03	-6.78E-07	1.62E-03	1.11E-02	1.24E+00	6.27E-02
681-3G Dom. Water Faucet	1	2.13E-03	6.57E-04	3.19E-03	3.97E-03	3.19E+00	7.08E-01
704-16G	1	3.76E-03	5.95E-03	9.62E-03	1.46E-02	1.40E+00	1.03E+00
709-1G	1	4.86E-04	1.81E-03	0.00E+00	1.18E-02	1.50E+00	2.81E-01
737-G	1	6.32E-03	-6.78E-07	1.58E-03	2.40E-03	1.40E+00	3.43E-01
782-3A (annual)	1	1.88E-02	-6.78E-07	2.86E-02	1.79E-03	Quarterly, See above	Quarterly, see above
905-112G Well	1	2.46E-02	2.97E-03	2.89E-02	3.89E-03	1.32E+00	1.08E+00
905-113G Well	1	2.09E-02	4.08E-03	3.62E-02	1.19E-02	1.03E+00	9.59E-01
905-125B	1	4.57E-02	9.97E-03	6.62E-02	1.13E-02	1.92E+00	1.90E+00
905-67B	1	9.86E-03	4.05E-03	1.31E-02	5.19E-03	4.41E-01	5.05E-01

Appendix Table E-14 Summary of Radionuclides in Freshwater Fish

Units are in pCi/g. Bolded concentration results were reported as detected. Concentrations not bolded indicate the result was less than the analytical method detection limit(MDL) or the uncertainty is large.

The analyte mean is set to zero if all composite values per fish species at a single location are less than the MDL or the uncertainty is large. Three composite samples were analyzed for each fish type from each location.

<i>Tritium (H-3) (Edible)</i>									
	Bass			Catfish			Panfish		
Location	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.
Augusta L&D	0.00E+00	-3.14E-02	-8.03E-03	2.72E-02	1.48E-02	4.95E-02	0.00E+00	9.49E-03	6.19E-02
Upper Three Runs Creek River Mouth	1.05E-01	7.43E-02	1.34E-01	0.00E+00	-1.02E-02	6.41E-02	9.57E-02	8.35E-02	1.17E-01
Four Mile Creek River Mouth	5.32E-02	4.38E-02	7.00E-02	0.00E+00	1.14E-02	3.43E-02	3.11E-01	6.62E-02	7.78E-01
Steel Creek River Mouth	0.00E+00	2.38E-02	5.54E-02	9.14E-02	6.16E-02	1.31E-01	0.00E+00	3.51E-02	4.86E-02
Lower Three Runs Creek River Mouth	0.00E+00	-1.29E-02	3.08E-03	0.00E+00	-1.67E-02	3.68E-02	1.29E-01	7.32E-02	1.72E-01
Hwy 301 Bridge Area	9.84E-02	4.73E-02	1.26E-01	2.85E-01	1.90E-01	4.03E-01	1.99E-01	1.64E-01	2.46E-01

<i>Cs-137 (Edible)</i>									
	Bass			Catfish			Panfish		
Location	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.
Augusta L&D	0.00E+00	-3.78E-03	1.88E-02	0.00E+00	5.57E-03	3.62E-02	0.00E+00	-2.45E-03	2.76E-02
Upper Three Runs Creek River Mouth	0.00E+00	2.40E-02	4.89E-02	0.00E+00	4.62E-03	3.73E-02	0.00E+00	1.28E-02	1.67E-02
Four Mile Creek River Mouth	6.32E-02	4.57E-02	9.11E-02	0.00E+00	4.65E-03	3.22E-02	7.52E-02	4.89E-02	1.23E-01
Steel Creek River Mouth	1.54E-01	1.38E-01	1.79E-01	7.31E-02	3.08E-02	1.02E-01	0.00E+00	1.90E-02	5.84E-02
Lower Three Runs Creek River Mouth	1.54E-01	6.95E-02	3.11E-01	4.37E-02	2.63E-02	6.86E-02	0.00E+00	1.59E-02	5.46E-02
Hwy 301 Bridge Area	2.51E-02	1.95E-02	2.95E-02	2.75E-02	1.57E-02	3.89E-02	2.63E-02	2.09E-02	3.57E-02

Sr-89/90 (Edible)									
	Bass			Catfish			Panfish		
Location	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.
Augusta L&D	0.00E+00	1.14E-03	3.49E-03	0.00E+00	4.92E-04	2.11E-03	0.00E+00	3.43E-03	6.00E-03
Upper Three Runs Creek River Mouth	2.72E-03	1.00E-03	3.62E-03	1.91E-03	4.14E-04	4.54E-03	0.00E+00	1.67E-03	4.54E-03
Four Mile Creek River Mouth	2.48E-03	1.45E-03	4.41E-03	0.00E+00	1.73E-03	2.51E-03	3.18E-03	1.66E-03	4.68E-03
Steel Creek River Mouth	0.00E+00	2.56E-04	1.96E-03	0.00E+00	9.14E-04	1.50E-03	5.68E-03	3.76E-03	6.89E-03
Lower Three Runs Creek River Mouth	2.10E-03	1.52E-03	3.19E-03	1.65E-03	9.24E-04	2.84E-03	3.82E-03	1.21E-04	7.24E-03
Hwy 301 Bridge Area	0.00E+00	9.03E-04	1.56E-03	0.00E+00	9.30E-04	1.56E-03	3.87E-03	2.36E-03	5.73E-03

Sr-89/90 (Non-Edible)									
	Bass			Catfish			Panfish		
Location	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.
Augusta L&D	9.51E-01	8.92E-01	1.07E+00	1.01E+00	9.16E-01	1.13E+00	8.26E-01	5.97E-01	9.84E-01
Upper Three Runs Creek River Mouth	8.34E-01	8.05E-01	8.68E-01	7.45E-01	5.76E-01	8.70E-01	9.75E-01	8.14E-01	1.11E+00
Four Mile Creek River Mouth	6.98E-01	4.86E-01	9.38E-01	6.72E-01	6.03E-01	7.49E-01	1.38E+00	1.07E+00	1.88E+00
Steel Creek River Mouth	7.43E-01	5.73E-01	8.38E-01	6.85E-01	5.38E-01	8.49E-01	7.85E-01	6.65E-01	8.86E-01
Lower Three Runs Creek River Mouth	7.54E-01	5.97E-01	8.70E-01	1.16E+00	9.05E-01	1.59E+00	1.01E+00	9.08E-01	1.21E+00
Hwy 301 Bridge Area	6.05E-01	4.51E-01	7.08E-01	9.23E-01	6.59E-01	1.25E+00	9.41E-01	8.81E-01	1.06E+00

I-129 (Edible)									
	Bass			Catfish			Panfish		
Location	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.
Augusta L&D	0.00E+00	-1.42E-02	1.39E-02	0.00E+00	-1.04E-02	9.11E-03	0.00E+00	-1.61E-03	2.44E-02
Upper Three Runs Creek River Mouth	0.00E+00	-1.69E-02	2.62E-02	0.00E+00	-5.68E-04	4.19E-02	0.00E+00	-5.19E-03	-3.59E-03
Four Mile Creek River Mouth	0.00E+00	-1.45E-02	1.12E-02	0.00E+00	-6.86E-03	1.56E-02	0.00E+00	6.84E-04	1.26E-02
Steel Creek River Mouth	0.00E+00	-1.23E-02	2.12E-02	1.77E-02	3.54E-03	4.38E-02	0.00E+00	-3.16E-03	1.57E-02
Lower Three Runs Creek River Mouth	7.78E-03	-1.02E-02	3.81E-02	0.00E+00	-1.23E-02	7.27E-03	0.00E+00	-9.38E-03	1.27E-03
Hwy 301 Bridge Area	0.00E+00	-1.01E-02	2.89E-02	0.00E+00	-1.53E-03	8.05E-03	0.00E+00	-2.55E-02	1.80E-02

Tc-99 (Edible)									
	Bass			Catfish			Panfish		
Location	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.
Augusta L&D	0.00E+00	1.55E-02	3.30E-02	0.00E+00	-3.86E-03	4.32E-02	0.00E+00	7.16E-03	2.31E-02
Upper Three Runs Creek River Mouth	6.70E-02	4.46E-02	1.01E-01	8.18E-02	7.81E-02	8.84E-02	0.00E+00	3.84E-02	4.59E-02
Four Mile Creek River Mouth	0.00E+00	-5.73E-04	5.68E-02	0.00E+00	1.43E-02	5.27E-02	0.00E+00	-1.72E-02	1.09E-02
Steel Creek River Mouth	0.00E+00	-6.86E-03	3.95E-02	0.00E+00	2.28E-03	6.22E-02	0.00E+00	1.96E-02	4.24E-02
Lower Three Runs Creek River Mouth	5.98E-02	3.43E-02	9.76E-02	6.89E-02	6.51E-02	7.11E-02	6.69E-02	5.35E-02	8.27E-02
Hwy 301 Bridge Area	0.00E+00	4.70E-02	6.65E-02	0.00E+00	2.68E-02	4.81E-02	0.00E+00	6.95E-03	6.51E-02

Gross Beta (Edible)									
	Bass			Catfish			Panfish		
Location	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.
Augusta L&D	2.04E+00	1.64E+00	2.27E+00	2.45E+00	2.09E+00	2.76E+00	2.06E+00	1.87E+00	2.18E+00
Upper Three Runs Creek River Mouth	2.19E+00	1.99E+00	2.30E+00	2.63E+00	2.51E+00	2.69E+00	1.82E+00	1.65E+00	1.94E+00
Four Mile Creek River Mouth	2.11E+00	1.94E+00	2.29E+00	2.34E+00	2.25E+00	2.43E+00	2.18E+00	1.88E+00	2.60E+00
Steel Creek River Mouth	2.59E+00	2.41E+00	2.78E+00	2.69E+00	2.35E+00	2.95E+00	1.94E+00	1.78E+00	2.10E+00
Lower Three Runs Creek River Mouth	3.01E+00	2.57E+00	3.57E+00	3.06E+00	2.73E+00	3.46E+00	2.68E+00	2.51E+00	2.84E+00
Hwy 301 Bridge Area	2.90E+00	2.53E+00	3.27E+00	2.33E+00	2.12E+00	2.53E+00	1.72E+00	1.56E+00	1.81E+00

All Co-60 and Gross Alpha results were non-significant and thus, not reported on this table.

Appendix Table E-15 Summary of Radionuclides in Saltwater Fish

Bolded concentration results were reported as detected. Concentrations not bolded indicate the result was less than the analytical method detection limit or the uncertainty is large.

All saltwater fish were collected at the location designated as River Miles 0-8 (mouth of Savannah River).

No sea trout were collected in 2015.

Fish Species	Marine Mullet				Red Drum			
Analyte	Number of Samples	Mean (pCi/g)	Minimum (pCi/g)	Maximum (pCi/g)	Number of Samples	Mean (pCi/g)	Minimum (pCi/g)	Maximum (pCi/g)
H-3	3	6.36E-02	4.78E-02	8.08E-02	3	8.03E-02	7.76E-02	8.54E-02
Sr 89/90 Non-Edible	3	2.11E-01	1.61E-01	2.56E-01	3	2.47E-01	4.97E-02	4.38E-01
Gross Beta	3	2.35E+00	2.02E+00	2.81E+00	3	2.07E+00	1.55E+00	2.62E+00

Results of all samples for Co-60, Cs-137, Tc-99, I-129, Sr-90 (in flesh), and gross alpha were below method detection limits.

Appendix Table E-16 Summary of Radionuclides in Shellfish

Bolded concentration results were reported as detected. Concentrations not bolded indicate the result was less than the analytical method detection limit or the uncertainty is large.

All shellfish are collected at the location designated as River Miles 0-8 (at the mouth of Savannah River).

Nuclide	Number of Samples	Number of Results > Detection Limit	Concentration (pCi/g)
Co-60	1	0	-5.43E-03
Cs-137	1	0	9.49E-03
Sr-89/90	1	0	1.82E-03
I-129	1	0	-1.19E-03
Tc-99	1	0	2.14E-07
Gross B	1	1	1.24E+00
Gross A	1	1	2.03E-01

Appendix Table E-17 Summary of Radionuclides in Wildlife

Bolded concentration results were reported as detected. Concentrations not bolded indicate the result was less than the analytical method detection limit or the uncertainty is large.

Sample Type	Nuclide	Number of Samples	Number of Results > Detection Limit	Mean Sample Conc. (pCi/g)	Minimum Sample Conc. (pCi/g)	Maximum Sample Conc. (pCi/g)
Deer Flesh - Regular Hunts	Co-60	45	0	-7.30E-04	-4.11E-02	3.22E-02
Deer Flesh - Roadside Removal	Co-60	20	0	1.49E-03	-2.68E-02	2.62E-02
Hog Flesh	Co-60	12	0	9.38E-03	-6.11E-03	2.61E-02
Deer Flesh - Regular Hunts	Cs-137	45	45	2.46E+00	3.11E-01	7.70E+00
Deer Flesh - Roadside Removal	Cs-137	20	20	2.12E+00	1.32E-01	1.13E+01
Hog Flesh	Cs-137	12	11	1.60E+00	3.08E-02	9.19E+00
Deer Flesh - Regular Hunts	Sr-89/90	45	7	4.11E-03	-9.57E-04	2.86E-02
Deer Flesh - Roadside Removal	Sr-89/90	7	0	9.69E-02	2.17E-04	7.55E-01
Hog Flesh	Sr-89/90	12	1	2.88E-03	4.89E-04	6.16E-03
Deer Bone - Regular Hunts	Sr-89/90	45	45	3.49E+00	4.73E-01	6.32E+00
Hog Bone	Sr-89/90	12	12	4.17E+00	7.41E-01	1.50E+01