

NOTE: a) Values developed by Savannah River National Laboratory for SRS in Stone and Jannik, 2013

NOTE: b) The effective river flow rate was based on tritium concentration measurements. The 2014 measured river flow rate was 9,440 cfs. See Data Table 6-6 for details.

Data Table 6-1 Parameters Used for Liquid Pathway Dose Calculations
2014 Parameters Used for Liquid Pathway Dose Calculations

Reference and Typical Person Consumption and Usage Rates ^(a)

Pathway	Reference Person 95th percentile	Typical Person 50th percentile	Units
Fish consumption	24	3.7	kg/y
Marine invertebrates	Not applicable	1.5	kg/y
Boating	44	3,110,000	h/y (person-h/y)
Swimming	14	295,000	h/y (person-h/y)
Shoreline recreation	20	822,000	h/y (person-h/y)
Water consumption	800	300	L/y

Population Served by Downriver Water Treatment Plants

Beaufort-Jasper Purrysburg Plant	64,200	persons
Beaufort-Jasper Chelsea Plant	82,900	persons
City of Savannah Industrial & Domestic Water Supply	35,000	persons

50-mile Population

2010 US Census	781,060	persons
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Site-Specific Parameters Used in Liquid Dose Calculations

	Value	Units
Savannah River <i>effective</i> flow rate at Hwy 301 for 2014 ^(b)	8,525	ft ³ /s
River dilution in estuary	3	
Transport Time		
Recreation	1	d
Drinking Water	1.5	d
Fish	2	d
Treatment Plant Drinking Water	4	d
Sport Fish	10	d
Commercial Fish	13	d
Salt Water Invertebrate	13	d
Edible aquatic food harvest		
Fish - sport	8,220	person-kg/y
Fish - commercial	57,000	person-kg/y
Invertebrates - salt water	380,000	person-kg/y
Shoreline width factor	0.2	
Fish bioaccumulation factor for cesium	3,000	

2014 Parameters Used for Liquid Pathway Dose Calculations

Irrigation Parameter Values:			
Parameter	Value	Units	Comments
Irrigated land area:	1000	acres	
Pop dose determined by:	area		POP or AREA
Savannah River flow rate:	8,525	cu.ft/sec	equals LT flow rate
River transit time:	2	d	
Irrigation rate:	3.6	L/sq.m/d	102 L/sq.m/mo
Weathering removal constant:	0.0495	1/d	14 d half-life
Crop exposure time:	70	d	
Grass exposure time:	30	d	
Buildup time in soil:	21,900	d	SRS lifetime
Vegetable crop yield:	2.2	kg/sq.m	
Pasture grass yield:	0.7	kg/sq.m	
Surface density of soil:	240	kg/sq.m	
Pasture grass hold-up time:	0	d	
Veg transport time (individual):	1	d	
Veg transport time (population):	6	d	
Milk transport time:	3	d	
Meat transport time:	6	d	
Fraction of fodder from irrigated field:	1		
Cattle consumption rate of fodder:	36	kg/d	beef
	52	kg/d	milk
Fraction of water from Savannah River:	1		
Cattle consumption rate of water:	28	L/d	beef
	50	L/d	milk
Reference Person (95th percentile)	289	kg/yr	veg
	31	kg/yr	leafy
	81	kg/yr	meat
	260	L/yr	milk
Typical Person (50th percentile)	89	kg/yr	veg
	11	kg/yr	leafy
	32	kg/yr	meat
	69	L/yr	milk
Total Production:	4.25E+06	kg/yr	veg
	1.06E+06	kg/yr	leafy
	4.05E+04	kg/yr	meat
	1.38E+06	L/yr	milk
Fractional retention on leaves:	0.25		all nuclides