

Attachment H6: RESRAD-Offsite 3.1 Inputs Parameters for Area 5 that differ from defaults

Parameter	RESRAD-Offsite Default	Area 5.1	Area 5.2	Area 5.3	Area 5.4	Area 5.5	Area 5.6	Basis
Preliminary Inputs								
Exposure Duration	30	1	1	1	1	1	1	Yearly dose estimates calculated.
Site Layout								
Degrees North is from X-axis	90	90	90	90	90	90	90	The difference between the minimum and maximum latitude and longitude coordinates were used to determine a length-to-width ratio for the contaminated and pasture areas. These ratios were then used to convert the irregular shape areas into representative rectangular area. The center of each of the rectangular areas was placed at the average of the minimum and maximum latitude and longitude coordinates.
X dimension of Primary Contamination	100	46	66	25	47	20	33	
Y dimension of Primary Contamination	100	29	100	23	38	16	27	
Non-Leafy Plot (Smaller / Larger)	X: 34.375 / 65.625	X: -609 / 391	X: -645 / 355	X: -475 / 526	X: -345 / 656	X: -296 / 704	X: -263 / 738	
	Y: 234 / 266	Y: -694 / 386	Y: -261 / 819	Y: -198 / 883	Y: -386 / 694	Y: -626 / 454	Y: -795 / 286	
Leafy Plot (Smaller / Larger)	X: 34.375 / 65.625	X: -609 / 391	X: -645 / 355	X: -475 / 526	X: -345 / 656	X: -296 / 704	X: -263 / 738	
	Y: 234 / 266	Y: -694 / 386	Y: -261 / 819	Y: -198 / 883	Y: -386 / 694	Y: -626 / 454	Y: -795 / 286	
Pasture (Smaller / Larger)	X: 0 / 100	X: -609 / 391	X: -645 / 355	X: -475 / 526	X: -345 / 656	X: -296 / 704	X: -263 / 738	
	Y: 450 / 550	Y: -694 / 386	Y: -261 / 819	Y: -198 / 883	Y: -386 / 694	Y: -626 / 454	Y: -795 / 286	
Grain (Smaller / Larger)	X: 0 / 100	X: -609 / 391	X: -645 / 355	X: -475 / 526	X: -345 / 656	X: -296 / 704	X: -263 / 738	
	Y: 300 / 400	Y: -694 / 386	Y: -261 / 819	Y: -198 / 883	Y: -386 / 694	Y: -626 / 454	Y: -795 / 286	
Dwelling (Smaller / Larger)	X: 34.375 / 65.625	X: 0/1						
	Y: 134 / 166	Y: 0/1						
Surface-water Body (Smaller / Larger)	X: -100 / 200	X: 0/1						
	Y: 550 / 850	Y: 0/1						
Distribution Coefficients								
Ac-227	20	1740	1740	1740	1740	1740	1740	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Am-241	20	Sediment: 4000						
		All others: 1900						
Cs-137	4600	Sediment: 480						
		All others: 280						
Np-237	257	Sediment: 3						

Attachment H6: RESRAD-Offsite 3.1 Inputs Parameters for Area 5 that differ from defaults

Parameter	RESRAD-Offsite Default	Area 5.1	Area 5.2	Area 5.3	Area 5.4	Area 5.5	Area 5.6	Basis
		All others: 2.3						
Pa-231	50	2040	2040	2040	2040	2040	2040	
Pu-239	2000	Sediment: 3000	Sediment: 3000	Sediment: 3000	Sediment: 3000	Sediment: 3000	Sediment: 3000	
		All others: 2600						
Sr-90	30	Sediment: 15	Sediment: 15	Sediment: 15	Sediment: 15	Sediment: 15	Sediment: 15	
		All others: 5						
Th-229	60000	5890	5890	5890	5890	5890	5890	
U-233	50	Sediment: 10	Sediment: 10	Sediment: 10	Sediment: 10	Sediment: 10	Sediment: 10	
		All others: 35						
U-235	50	Sediment: 10	Sediment: 10	Sediment: 10	Sediment: 10	Sediment: 10	Sediment: 10	
		All others: 35						
Pathways								
Include	External, Inhalation, Plant Ingestion, Meat Ingestion, Milk Ingestion, Aquatic Foods, Drinking Water, Soil Ingestion	External, Inhalation, Plant Ingestion, Meat Ingestion, Aquatic Foods, Soil Ingestion	External, Inhalation, Plant Ingestion, Meat Ingestion, Aquatic Foods, Soil Ingestion	External, Inhalation, Plant Ingestion, Meat Ingestion, Aquatic Foods, Soil Ingestion	External, Inhalation, Plant Ingestion, Meat Ingestion, Aquatic Foods, Soil Ingestion	External, Inhalation, Plant Ingestion, Meat Ingestion, Aquatic Foods, Soil Ingestion	External, Inhalation, Plant Ingestion, Meat Ingestion, Aquatic Foods, Soil Ingestion	Based on land use survey.
Physical and Hydrological								
Precipitation	1	1.16	1.16	1.16	1.16	1.16	1.16	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Wind Speed	0.89 (calculated)	Wind Rose	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Table 3-10: Wind Speed and Direction Frequency Distributions at 10 Meters.					
Primary Contamination								
Length of contamination parallel to aquifer flow	100	37	81	24	42	18	30	Square root of the area.
Irrigation	0.2	0	0	0	0	0	0	No irrigation is used per land use survey.

Attachment H6: RESRAD-Offsite 3.1 Inputs Parameters for Area 5 that differ from defaults

Parameter	RESRAD-Offsite Default	Area 5.1	Area 5.2	Area 5.3	Area 5.4	Area 5.5	Area 5.6	Basis
Evapotranspiration coefficient	0.5	0.62	0.62	0.62	0.62	0.62	0.62	Based on the Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C; Evapotranspiration and runoff coefficients selected to achieve infiltration rate of 0.26 m/y.
Runoff	0.2	0.41	0.41	0.41	0.41	0.41	0.41	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C; Evapotranspiration and runoff coefficients selected to achieve infiltration rate of 0.26 m/y.
Thickness	2	1	1	1	1	1	1	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Total Porosity	0.5	0.36	0.36	0.36	0.36	0.36	0.36	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Dry bulk density	1.5	1.7	1.7	1.7	1.7	1.7	1.7	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Soil erodibility factor	0.4	0	0	0	0	0	0	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Field Capacity	0.3	0.2	0.2	0.2	0.2	0.2	0.2	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
B parameter	5.3	1.4	1.4	1.4	1.4	1.4	1.4	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Hydraulic conductivity	10	140	140	140	140	140	140	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Effective Porosity	0.4	0.25	0.25	0.25	0.25	0.25	0.25	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Agricultural Areas								
Irrigation	Non-Leafy: 0.2	Non-Leafy: 0	Based on land use survey.					
	Leafy: 0.2	Leafy: 0						

Attachment H6: RESRAD-Offsite 3.1 Inputs Parameters for Area 5 that differ from defaults

Parameter	RESRAD-Offsite Default	Area 5.1	Area 5.2	Area 5.3	Area 5.4	Area 5.5	Area 5.6	Basis
	Pasture: 0.2	Pasture: 0						
	Grain: 0.2	Grain: 0						
	Dwelling: 0.2	Dwelling: 0						
Evapotranspiration coefficient	Non-Leafy: 0.5	Non-Leafy: 0.62	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C. Evapotranspiration and runoff coefficients selected to achieve infiltration rate of 0.26 m/y.					
	Leafy: 0.5	Leafy: 0.62						
	Pasture: 0.5	Pasture: 0.62						
	Grain: 0.5	Grain: 0.62						
	Dwelling: 0.5	Dwelling: 0.62						
Runoff	Non-Leafy: 0.2	Non-Leafy: 0.41	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C. Evapotranspiration and runoff coefficients selected to achieve infiltration rate of 0.26 m/y.					
	Leafy: 0.2	Leafy: 0.41						
	Pasture: 0.2	Pasture: 0.41						
	Grain: 0.2	Grain: 0.41						
	Dwelling: 0.2	Dwelling: 0.41						
Dry bulk density	Non-Leafy: 1.5	Non-Leafy: 1.7	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.					
	Leafy: 1.5	Leafy: 1.7						
	Pasture: 1.5	Pasture: 1.7						
	Grain: 1.5	Grain: 1.7						
	Dwelling: 1.5	Dwelling: 1.7						
Soil erodibility factor	Non-Leafy: 0.4	Non-Leafy: 0	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.					
	Leafy: 0.4	Leafy: 0						
	Pasture: 0.4	Pasture: 0						
	Grain: 0.4	Grain: 0						
	Dwelling: 0	Dwelling: 0	Dwelling: 0	Dwelling: 0	Dwelling: 0	Dwelling: 0	Dwelling: 0	
Atmospheric Transport								
Joint Metrological Data (Wind Speed/ Stability class frequency)	n/a	Wind Rose	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Table 3-10: Wind Speed and Direction Frequency Distributions at 10 Meters					
Unsaturated Zone Hydrology								

Attachment H6: RESRAD-Offsite 3.1 Inputs Parameters for Area 5 that differ from defaults

Parameter	RESRAD-Offsite Default	Area 5.1	Area 5.2	Area 5.3	Area 5.4	Area 5.5	Area 5.6	Basis
Thickness	4	2	2	2	2	2	2	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Dry bulk density	1.5	1.7	1.7	1.7	1.7	1.7	1.7	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Total Porosity	0.4	0.36	0.36	0.36	0.36	0.36	0.36	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Effective Porosity	0.2	0.25	0.25	0.25	0.25	0.25	0.25	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Field Capacity	0.3	0.2	0.2	0.2	0.2	0.2	0.2	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Hydraulic conductivity	10	140	140	140	140	140	140	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
B parameter	5.3	1.4	1.4	1.4	1.4	1.4	1.4	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
<b>Saturated Zone Hydrology</b>								
Dry bulk density	1.5	1.7	1.7	1.7	1.7	1.7	1.7	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Total Porosity	0.4	0.36	0.36	0.36	0.36	0.36	0.36	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Effective Porosity	0.2	0.25	0.25	0.25	0.25	0.25	0.25	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Hydraulic conductivity	100	1400	1400	1400	1400	1400	1400	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Hydraulic Gradient	0.02	0.03	0.03	0.03	0.03	0.03	0.03	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.

Attachment H6: RESRAD-Offsite 3.1 Inputs Parameters for Area 5 that differ from defaults

Parameter	RESRAD-Offsite Default	Area 5.1	Area 5.2	Area 5.3	Area 5.4	Area 5.5	Area 5.6	Basis
Depth of aquifer contributing	10	5	5	5	5	5	5	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Water Usage								
Consumption	510	0	0	0	0	0	0	Based on land use survey.
Number of Humans	4	0	0	0	0	0	0	n/a
Dwelling	225	0	0	0	0	0	0	Based on land use survey.
Beef Cattle	50	50	50	50	50	50	50	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C. Beef cattle represent wild game.
Number of Beef Cattle	2	5	5	5	5	5	5	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C. Beef cattle represent wild game.
Surface/Well	0/1	1/0	1/0	1/0	1/0	1/0	1/0	Based on land use survey.
Dairy Cattle	160	0	0	0	0	0	0	Based on land use survey.
Number of Dairy Cattle	2	0	0	0	0	0	0	n/a
Irrigation Non-Leafy	0.2	0	0	0	0	0	0	Based on land use survey.
Irrigation Leafy	0.2	0	0	0	0	0	0	Based on land use survey.
Irrigation Pasture	0.2	0	0	0	0	0	0	Based on land use survey.
Irrigation Grain	0.2	0	0	0	0	0	0	Based on land use survey.
Irrigation Dwelling	0.2	0	0	0	0	0	0	Based on land use survey.
Well Pump Rate	5100	0	0	0	0	0	0	Based on 50% irrigation coming from well.
Surface Water Body								
Volume	150000	1	1	1	1	1	1	Based on Surface-water Body layout and an average water depth of 1 meter.
Ingestion Rates								
Drinking Water Consumption Rate/Fraction Affected	510/1	0/1	0/1	0/1	0/1	0/1	0/1	Based on land use survey.
Fish Consumption Rate/Fraction Affected	5.4/0.9	0/1	0/1	0/1	0/1	0/1	0/1	Based on land use survey.
Crustacea Consumption Rate/Fraction Affected	0.9/0.5	0/1	0/1	0/1	0/1	0/1	0/1	Based on land use survey.

Attachment H6: RESRAD-Offsite 3.1 Inputs Parameters for Area 5 that differ from defaults

Parameter	RESRAD-Offsite Default	Area 5.1	Area 5.2	Area 5.3	Area 5.4	Area 5.5	Area 5.6	Basis
Non-Leafy Consumption Rate/Fraction Affected	160/0.5	165.2/1	165.2/1	165.2/1	165.2/1	165.2/1	165.2/1	Based on land use survey.
Leafy Consumption Rate/Fraction Affected	14/0.5	118/1	118/1	118/1	118/1	118/1	118/1	Based on land use survey.
Meat Consumption Rate/Fraction Affected	63/1	52.2/1	52.2/1	52.2/1	52.2/1	52.2/1	52.2/1	Based on land use survey.
Milk Consumption Rate/Fraction Affected	92/1	0/1	0/1	0/1	0/1	0/1	0/1	Based on land use survey.
Soil Consumption Rate	36.5	18.3	18.3	18.3	18.3	18.3	18.3	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Livestock Intakes								
Water	Beef: 50	Beef: 50	Beef: 50	Beef: 50	Beef: 50	Beef: 50	Beef: 50	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C. There are no dairy cattle. Beef cattle represent wild game.
	Dairy: 160	Dairy: 0						
Pasture	Beef: 14	Beef: 2.25	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C. There are no dairy cattle. Beef cattle represent wild game.					
	Dairy: 44	Dairy: 0						
Grain	Beef: 54	Beef: 0	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C. There are no grain crops grown.					
	Dairy: 11	Dairy: 0						
Soil from Pasture	Beef: 0.1	Beef: 0.5	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C. There are no dairy cattle. Beef cattle represent wild game.					
	Dairy: 0.4	Dairy: 0						
Soil from Grain	Beef: 0.4	Beef: 0	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C. There are no grain crops grown.					
	Dairy: 0.1	Dairy: 0						
Livestock Feed Factors								
Wet weight crop yield	Pasture: 1.1	Pasture: 1.1	Pasture: 1.1	Pasture: 1.1	Pasture: 1.1	Pasture: 1.1	Pasture: 1.1	Phase 1 Decommissioning Plan for the West Valley Demonstration Project
	Grain: 0.7	Grain: 0.7	Grain: 0.7	Grain: 0.7	Grain: 0.7	Grain: 0.7	Grain: 0.7	

Attachment H6: RESRAD-Offsite 3.1 Inputs Parameters for Area 5 that differ from defaults

Parameter	RESRAD-Offsite Default	Area 5.1	Area 5.2	Area 5.3	Area 5.4	Area 5.5	Area 5.6	Basis
	Non-leafy: 0.1	Non-leafy: 1.75	Rev 2 Attachment C.					
	Leafy: 1.5	Leafy: 1.5	Leafy: 1.5	Leafy: 1.5	Leafy: 1.5	Leafy: 1.5	Leafy: 1.5	
Weathering removal constant	Pasture: 20	Pasture: 18	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.					
	Grain: 20	Grain: 18						
	Non-leafy: 20	Non-leafy: 18						
	Leafy: 20	Leafy: 18						
Foliar interception factor for irrigation	Pasture: 0.25	Pasture: 0.25	Pasture: 0.25	Pasture: 0.25	Pasture: 0.25	Pasture: 0.25	Pasture: 0.25	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
	Grain: 0.25	Grain: 0.25	Grain: 0.25	Grain: 0.25	Grain: 0.25	Grain: 0.25	Grain: 0.25	
	Non-leafy: 0.25	Non-leafy: 0.25	Non-leafy: 0.25	Non-leafy: 0.25	Non-leafy: 0.25	Non-leafy: 0.25	Non-leafy: 0.25	
	Leafy: 0.25	Leafy: 0.67						
Root depth	Pasture: 0.9	Pasture: 0.9	Pasture: 0.9	Pasture: 0.9	Pasture: 0.9	Pasture: 0.9	Pasture: 0.9	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
	Grain: 1.2	Grain: 0.9						
	Non-leafy: 1.2	Non-leafy: 0.9						
	Leafy: 0.9	Leafy: 0.9	Leafy: 0.9	Leafy: 0.9	Leafy: 0.9	Leafy: 0.9	Leafy: 0.9	
Inhalation and External Gamma								
Mass loading	0.0001	0.0000148	0.0000148	0.0000148	0.0000148	0.0000148	0.0000148	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Indoor to outdoor	0.4	1	1	1	1	1	1	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
External gamma penetrating factor	0.7	0.273	0.273	0.273	0.273	0.273	0.273	Phase 1 Decommissioning Plan for the West Valley Demonstration Project Rev 2 Attachment C.
Occupancy								
Primary contamination indoor	0	0	0	0	0	0	0	Based on land use survey.
Primary contamination outdoor	0	Collector: 0.1256 Hunter: 0.2917						
Offsite dwelling indoor	0.5	0	0	0	0	0	0	
Offsite dwelling outdoor	0.1	0	0	0	0	0	0	
Non-leafy vegetable fields	0.1	Collector: 0.0942 Hunter: 0.0417						
Leafy vegetable fields	0.1	Collector: 0.0628 Hunter: 0.0417						
Pasture and silage fields	0.1	0	0	0	0	0	0	

Attachment H6: RESRAD-Offsite 3.1 Inputs Parameters for Area 5 that differ from defaults

Parameter	RESRAD-Offsite Default	Area 5.1	Area 5.2	Area 5.3	Area 5.4	Area 5.5	Area 5.6	Basis
Livestock grain fields	0.1	0	0	0	0	0	0	