

Appendix G

RESRAD Sensitivity Analysis

Summary Tables

and

Graphical Results

Appendix G1

Residential Gardeners

Sensitivity Analysis

Table G-1

**Westinghouse Blairsville
RESRAD Sensitivity Analysis
Residential Gardener**

							Total Parameters: 147
							Sensitivity analysis performed on: 69
							# of Parameters above:
							Max Dose
							0.00425 0.0041
							>1% Increase 16
							>5% Increase 9
							>10% Increase 8
							13 pCi/g Dose: 2.94E-02
							1 pCi/g Dose: 2.26E-03
RESRAD Menu	Parameter	Base Case Value	Sensitivity Factor	Dose When Factor is Increased	Dose When Factor is Decreased	Governing Sensitivity (increase in dose)	% by which Dose is Increased
Contaminated Zone	Area of contaminated zone (m ²)	1.210E+04	NA				
	Thickness of contaminated zone (meters)	1.524E-01	2	4.25E-03	1.10E-03	Factor Increase	88.14%
	Length parallel to aquifer flow (m)	1.100E+02	2	2.26E-03	2.26E-03	No Change	0.00%
Soil Concentrations	Basic radiation dose limit (mrem/yr)	2.500E+01	NA				
	Time since placement of material (yr)	0.000E+00	NA				
		0.000E+00	NA				
Calculation Times	Times for calculations (yr)	1.000E+00	NA				
	Times for calculations (yr)	3.000E+00	NA				
	Times for calculations (yr)	1.000E+01	NA				
	Times for calculations (yr)	3.000E+01	NA				
	Times for calculations (yr)	1.000E+02	NA				
	Times for calculations (yr)	3.000E+02	NA				
	Times for calculations (yr)	1.000E+03	NA				
		0.000E+00	NA				
Soil Concentrations	Initial principal radionuclides (pCi/g): U-234	7.500E-01	NA				
	Initial principal radionuclides (pCi/g): U-235	4.000E-02	NA				
	Initial principal radionuclides (pCi/g): U-238	2.100E-01	NA				
Cover/Hydrology	Cover depth (m)	3.048E-01	2	1.90E-03	4.10E-03	Factor Decrease	81.50%
	Density of cover material (g/cm ³)	1.440E+00	1.2	2.05E-03	2.40E-03	Factor Decrease	6.24%
	Cover erosion rate (m/yr)	1.000E-03	5	2.50E-03	2.26E-03	Factor Increase	10.67%
	Density of contaminated zone (g/cm ³)	1.440E+00	1.2	2.30E-03	2.20E-03	Factor Increase	1.81%
	Contaminated zone erosion rate (m/yr)	1.000E-03	2	2.26E-03	2.26E-03	No Change	0.00%
	Contaminated zone total porosity	4.000E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Contaminated zone field capacity	2.000E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	2	2.26E-03	2.26E-03	No Change	0.00%
	Contaminated zone b parameter	5.300E+00	2	2.26E-03	2.26E-03	No Change	0.00%
	Average annual wind speed (m/sec)	2.000E+00	1.5	2.26E-03	2.26E-03	No Change	0.00%
	Humidity in air (g/cm ³)	NA	NA				
	Evapotranspiration coefficient	5.000E-01	1.5	2.30E-03	2.20E-03	Factor Increase	1.81%
	Precipitation (m/yr)	1.016E+00	1.5	2.30E-03	2.20E-03	Factor Increase	1.81%
	Irrigation (m/yr)	2.000E-01	1.5	2.26E-03	2.26E-03	No Change	0.00%
	Irrigation mode	overhead	NA				
	Runoff coefficient	2.000E-01	1.5	2.26E-03	2.26E-03	No Change	0.00%
	Watershed area for nearby stream or pond (m ²)	1.190E+05	2	2.26E-03	2.26E-03	No Change	0.00%
	Accuracy for water/soil computations	1.000E-03	NA				
Saturated Zone	Density of saturated zone (g/cm ³)	2.400E+00	1.5	2.26E-03	2.26E-03	No Change	0.00%
	Saturated zone total porosity	4.000E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Saturated zone effective porosity	2.000E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Saturated zone field capacity	2.000E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	2	2.26E-03	2.26E-03	No Change	0.00%
	Saturated zone hydraulic gradient	2.000E-02	2	2.26E-03	2.26E-03	No Change	0.00%
	Saturated zone b parameter	5.300E+00	2	2.26E-03	2.26E-03	No Change	0.00%
	Water table drop rate (m/yr)	1.000E-03	3	2.26E-03	2.26E-03	No Change	0.00%
	Well pump intake depth (m below water table)	1.000E+01	3	2.26E-03	2.26E-03	No Change	0.00%
	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	NA				
	Well pumping rate (m ³ /yr)	1.990E+04	2	2.26E-03	2.26E-03	No Change	0.00%
Unsaturated Zone	Number of unsaturated zone strata	1.000E+00	NA				

Table G-1

**Westinghouse Blairsville
RESRAD Sensitivity Analysis
Residential Gardener**

RESRAD Menu	Parameter	Base Case Value	Sensitivity Factor	Dose When Factor is Increased	Dose When Factor is Decreased	Governing Sensitivity (increase in dose)	% by which Dose is Increased
	Unsat. zone 1, thickness (m)	2.590E+00	3	2.26E-03	2.26E-03	No Change	0.00%
	Unsat. zone 1, soil density (g/cm ³)	1.440E+00	1.2	2.26E-03	2.26E-03	No Change	0.00%
	Unsat. zone 1, total porosity	4.000E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Unsat. zone 1, effective porosity	2.000E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Unsat. zone 1, field capacity	2.000E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Unsat. zone 1, soil-specific b parameter	5.300E+00	2	2.26E-03	2.26E-03	No Change	0.00%
	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	2	2.26E-03	2.26E-03	No Change	0.00%
Soil Concentrations - Transport	Distribution coefficients for U-234						
	Contaminated zone (cm ³ /g)	5.000E+01	10	3.75E-03	1.50E-03	Factor Increase	66.00%
	Unsat. zone (cm ³ /g)	5.000E+01	10	2.26E-03	2.26E-03	No Change	0.00%
	Saturated zone (cm ³ /g)	5.000E+01	10	2.26E-03	2.26E-03	No Change	0.00%
	Leach rate (yr)	0.000E+00	NA				
	Solubility constant	0.000E+00	NA				
	Distribution coefficients for U-235						
	Contaminated zone (cm ³ /g)	5.000E+01	10	3.50E-03	2.20E-03	Factor Increase	54.94%
	Unsat. zone (cm ³ /g)	5.000E+01	10	2.26E-03	2.26E-03	No Change	0.00%
	Saturated zone (cm ³ /g)	5.000E+01	10	2.26E-03	2.26E-03	No Change	0.00%
	Leach rate (yr)	0.000E+00	NA				
	Solubility constant	0.000E+00	NA				
	Distribution coefficients for U-238						
	Contaminated zone (cm ³ /g)	5.000E+01	10	4.10E-03	1.90E-03	Factor Increase	81.50%
	Unsat. zone (cm ³ /g)	5.000E+01	10	2.26E-03	2.26E-03	No Change	0.00%
	Saturated zone (cm ³ /g)	5.000E+01	10	2.26E-03	2.26E-03	No Change	0.00%
	Leach rate (yr)	0.000E+00	NA				
	Solubility constant	0.000E+00	NA				
Occupancy	Inhalation rate (m ³ /yr)	1.226E+04	1.5	2.26E-03	2.26E-03	No Change	0.00%
	Mass loading for inhalation (g/m ³)	1.000E-04	5	2.26E-03	2.26E-03	No Change	0.00%
	Exposure duration (year)	3.000E+01	NA				
	Indoor Dust Filtration Factor (Shielding Factor, Inhalation)	5.000E-01	1.5	2.26E-03	2.26E-03	No Change	0.00%
	Shielding factor, external gamma	5.512E-01	1.5	2.30E-03	2.20E-03	Factor Increase	1.81%
	Fraction of time spent indoors (on site)	5.500E-01	1.5	2.30E-03	2.20E-03	Factor Increase	1.81%
	Fraction of time spent outdoors (on site)	2.100E-01	1.5	2.30E-03	2.20E-03	Factor Increase	1.81%
	Shape of Contaminated Zone	Circular	NA				
Ingestion, Dietary	Fruits, vegetables and grain consumption (kg/yr)	1.600E+02	1.5	3.00E-03	1.60E-03	Factor Increase	32.80%
	Leafy vegetable consumption (kg/yr)	1.400E+01	1.5	2.30E-03	2.20E-03	Factor Increase	1.81%
	Milk consumption (L/yr)	NA	NA				
	Meat and poultry consumption (kg/yr)	NA	NA				
	Fish consumption (kg/yr)	NA	NA				
	Other seafood consumption (kg/yr)	NA	NA				
	Soil ingestion rate (g/yr)	1.825E+01	2	2.26E-03	2.26E-03	No Change	0.00%
	Drinking water intake (L/yr)	NA	NA				
	Contamination fraction of drinking water	NA	NA				
	Contamination fraction of household water	NA	NA				
	Contamination fraction of livestock water	NA	NA				
	Contamination fraction of irrigation water	1.000E+00	NA				
	Contamination fraction of aquatic food	NA	NA				
	Contamination fraction of plant food	1.000E-01	NA				
	Contamination fraction of meat	NA	NA				
	Contamination fraction of milk	NA	NA				
Ingestion, Non-Dietary	Livestock fodder intake for meat (kg/day)	NA	NA				

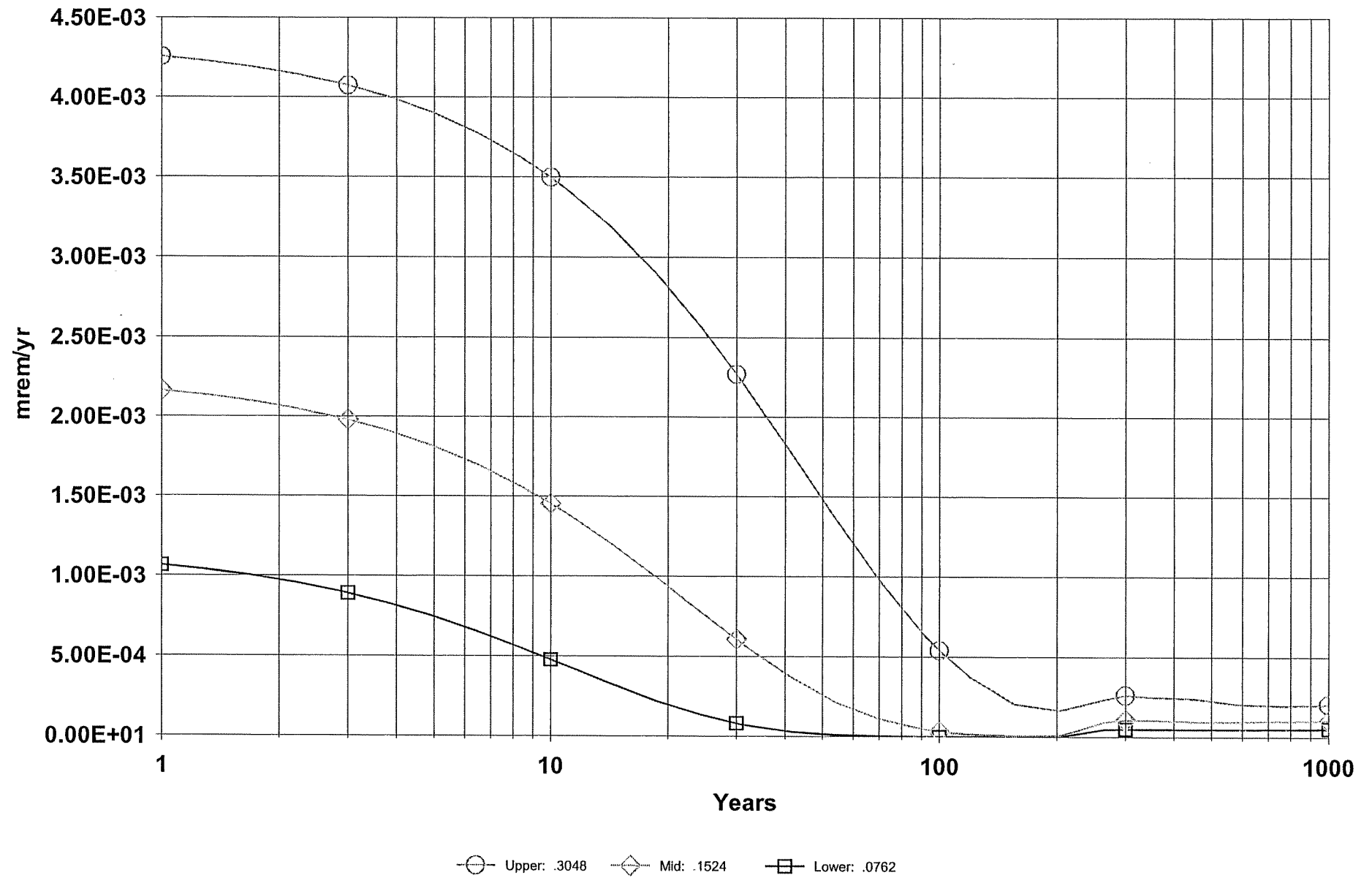
Table G-1

**Westinghouse Blairsville
RESRAD Sensitivity Analysis
Residential Gardener**

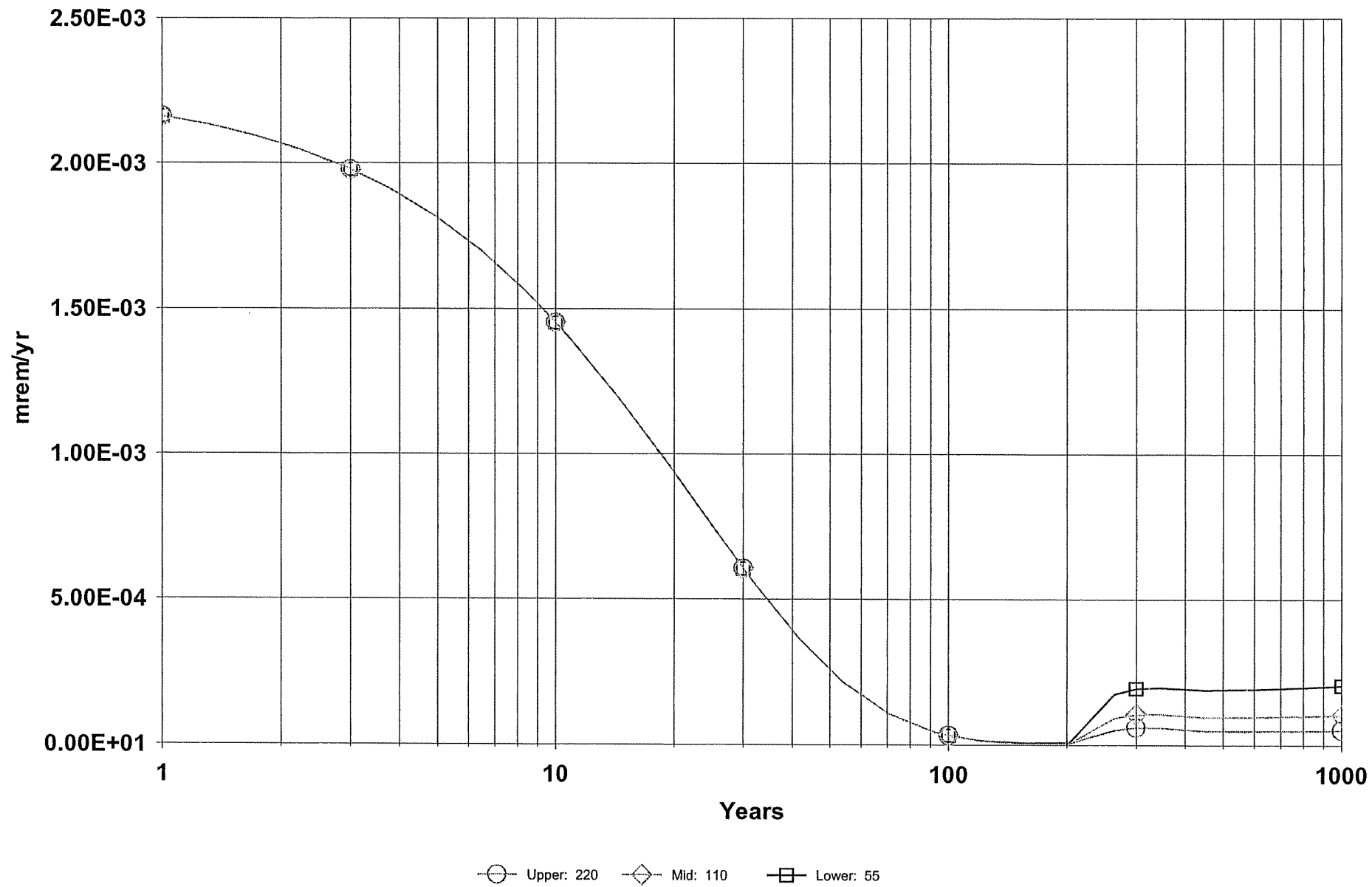
RESRAD Menu	Parameter	Base Case Value	Sensitivity Factor	Dose When Factor is Increased	Dose When Factor is Decreased	Governing Sensitivity (increase in dose)	% by which Dose is Increased
	Livestock fodder intake for milk (kg/day)	NA	NA				
	Livestock water intake for meat (L/day)	NA	NA				
	Livestock water intake for milk (L/day)	NA	NA				
	Livestock soil intake (kg/day)	NA	NA				
	Mass loading for foliar deposition (g/m ²)	1.000E-04	2	2.26E-03	2.26E-03	No Change	0.00%
	Depth of soil mixing layer (m)	1.500E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Depth of roots (m)	9.000E-01	2	1.20E-03	3.95E-03	Factor Decrease	74.86%
	Drinking water fraction from ground water	NA	NA				
	Household water fraction from ground water	NA	NA				
	Livestock water fraction from ground water	NA	NA				
	Irrigation fraction from ground water	1.000E+00	NA				
Ingestion, Non-Dietary - Plant Factors	Wet weight crop yield for Non-Leafy (kg/m ²)	7.000E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Wet weight crop yield for Leafy (kg/m ²)	1.500E+00	2	2.26E-03	2.26E-03	No Change	0.00%
	Wet weight crop yield for Fodder (kg/m ²)	NA	NA				
	Growing Season for Non-Leafy (years)	1.700E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Growing Season for Leafy (years)	2.500E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Growing Season for Fodder (years)	NA	NA				
	Translocation Factor for Non-Leafy	1.000E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Translocation Factor for Leafy	1.000E+00	NA				
	Translocation Factor for Fodder	NA	NA				
	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Dry Foliar Interception Fraction for Leafy	2.500E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Dry Foliar Interception Fraction for Fodder	NA	NA				
	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Wet Foliar Interception Fraction for Leafy	2.500E-01	2	2.26E-03	2.26E-03	No Change	0.00%
	Wet Foliar Interception Fraction for Fodder	NA	NA				
	Weathering Removal Constant for Vegetation	2.000E+01	2	2.26E-03	2.26E-03	No Change	0.00%
Storage Times	Storage times of contaminated foodstuffs (days):						
	Fruits, non-leafy vegetables, and grain	1.400E+01	2	2.26E-03	2.26E-03	No Change	0.00%
	Leafy vegetables	1.000E+00	5	2.26E-03	2.26E-03	No Change	0.00%
	Milk	NA	NA				
	Meat and poultry	NA	NA				
	Fish	NA	NA				
	Crustacea and mollusks	NA	NA				
	Well water	1.000E+00	5	2.26E-03	2.26E-03	No Change	0.00%
	Surface water	1.000E+00	5	2.26E-03	2.26E-03	No Change	0.00%
	Livestock fodder	NA	NA				
Radon	Thickness of building foundation (m)	NA	NA				
	Bulk density of building foundation (g/cm ³)	NA	NA				
	Total porosity of the cover material	NA	NA				
	Total porosity of the building foundation	NA	NA				
	Volumetric water content of the cover material	NA	NA				
	Volumetric water content of the foundation	NA	NA				
	Diffusion coefficient for radon gas (m/sec):	NA	NA				
	in cover material	NA	NA				
	in foundation material	NA	NA				
	in contaminated zone soil	NA	NA				
	Radon vertical dimension of mixing (m)	NA	NA				
	Average building air exchange rate (1/hr)	NA	NA				
	Height of the building (room) (m)	NA	NA				
	Building interior area factor	NA	NA				
	Building depth below ground surface (m)	NA	NA				
	Emanating power of Rn-222 gas	NA	NA				
	Emanating power of Rn-220 gas	NA	NA				

NA = Not applicable to the current model because the pathway utilizing the parameter was turned off.

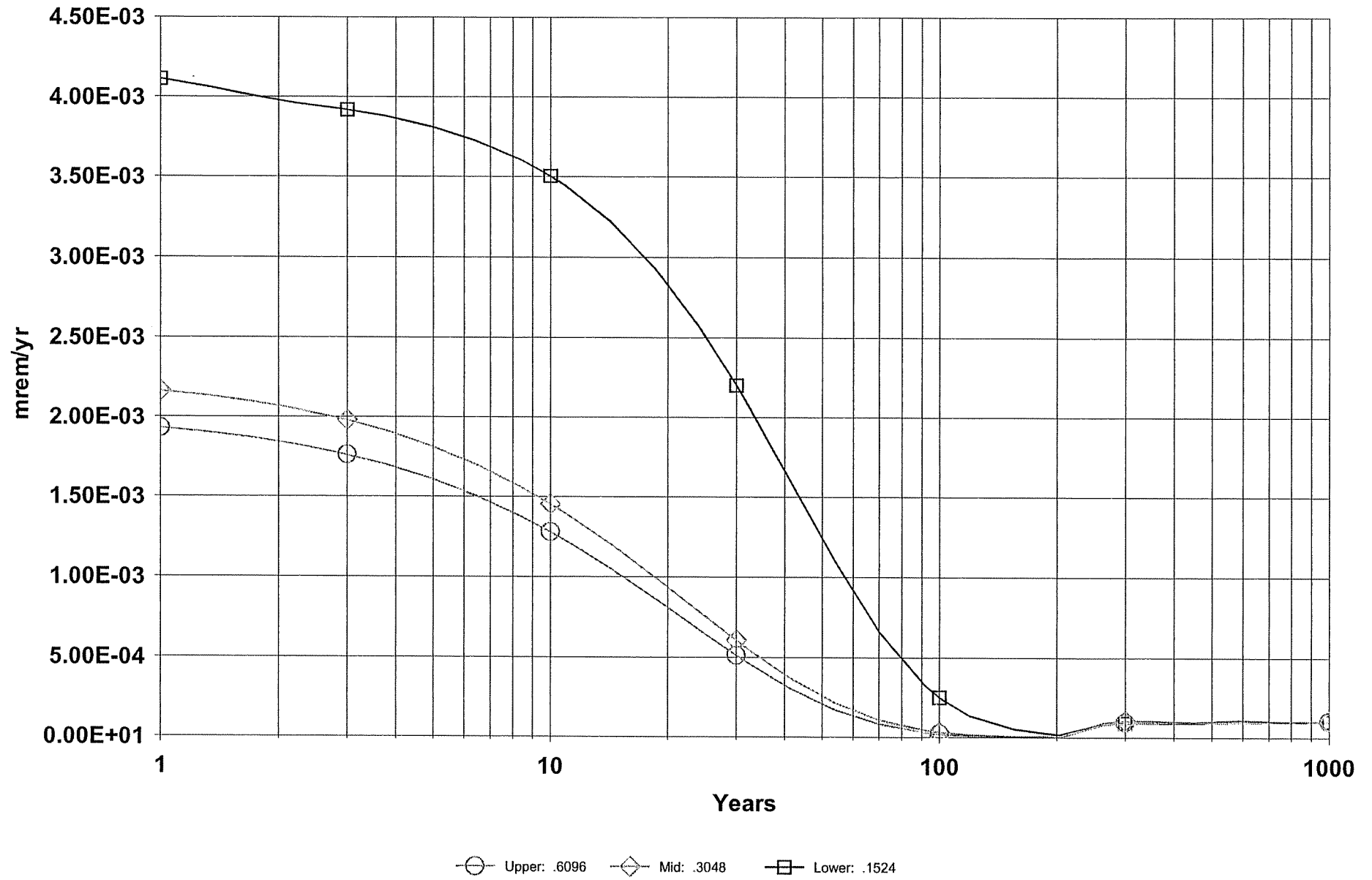
DOSE: All Nuclides Summed, All Pathways Summed With SA on Thickness of contaminated zone



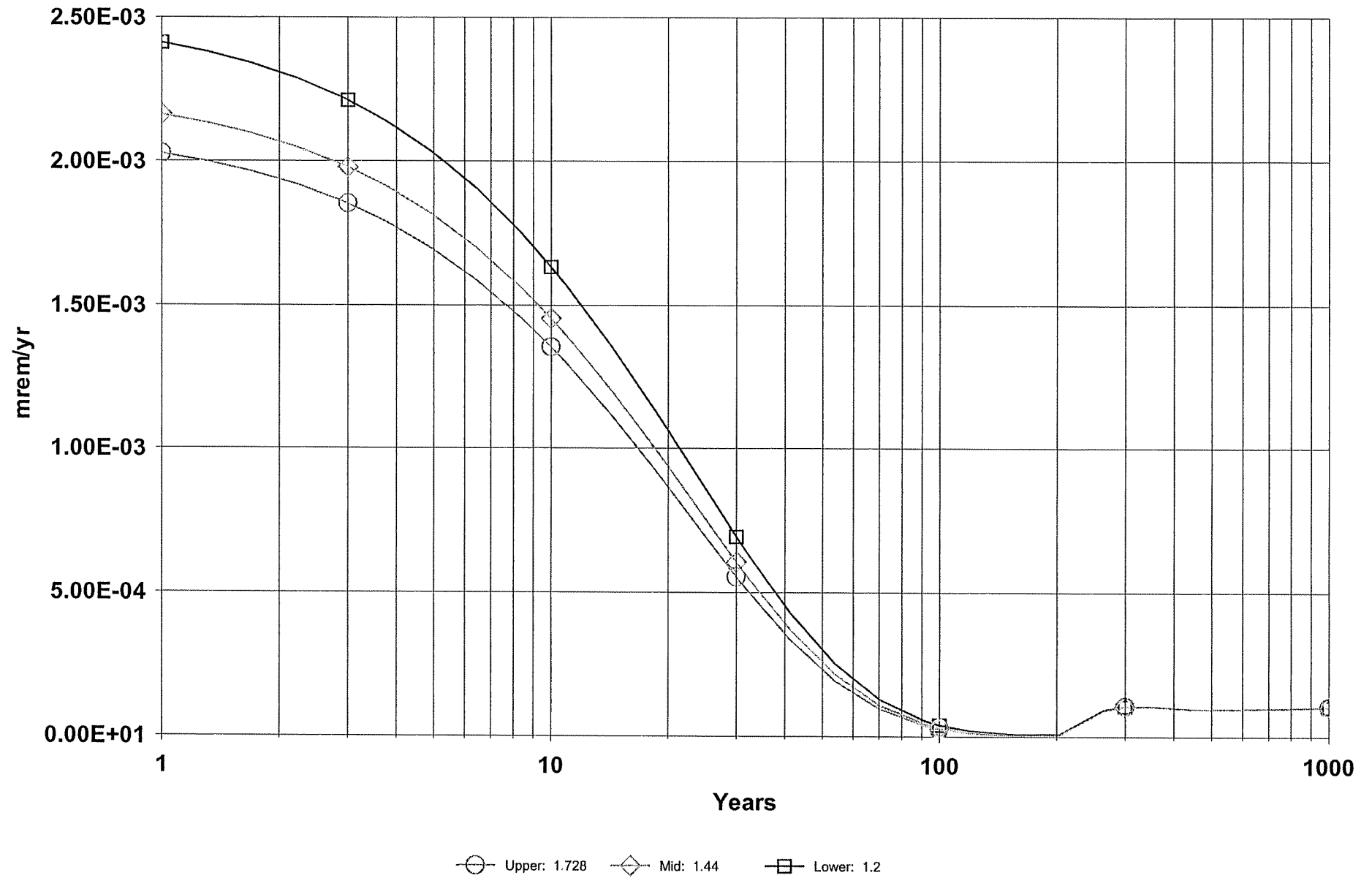
DOSE: All Nuclides Summed, All Pathways Summed With SA on Length parallel to aquifer flow



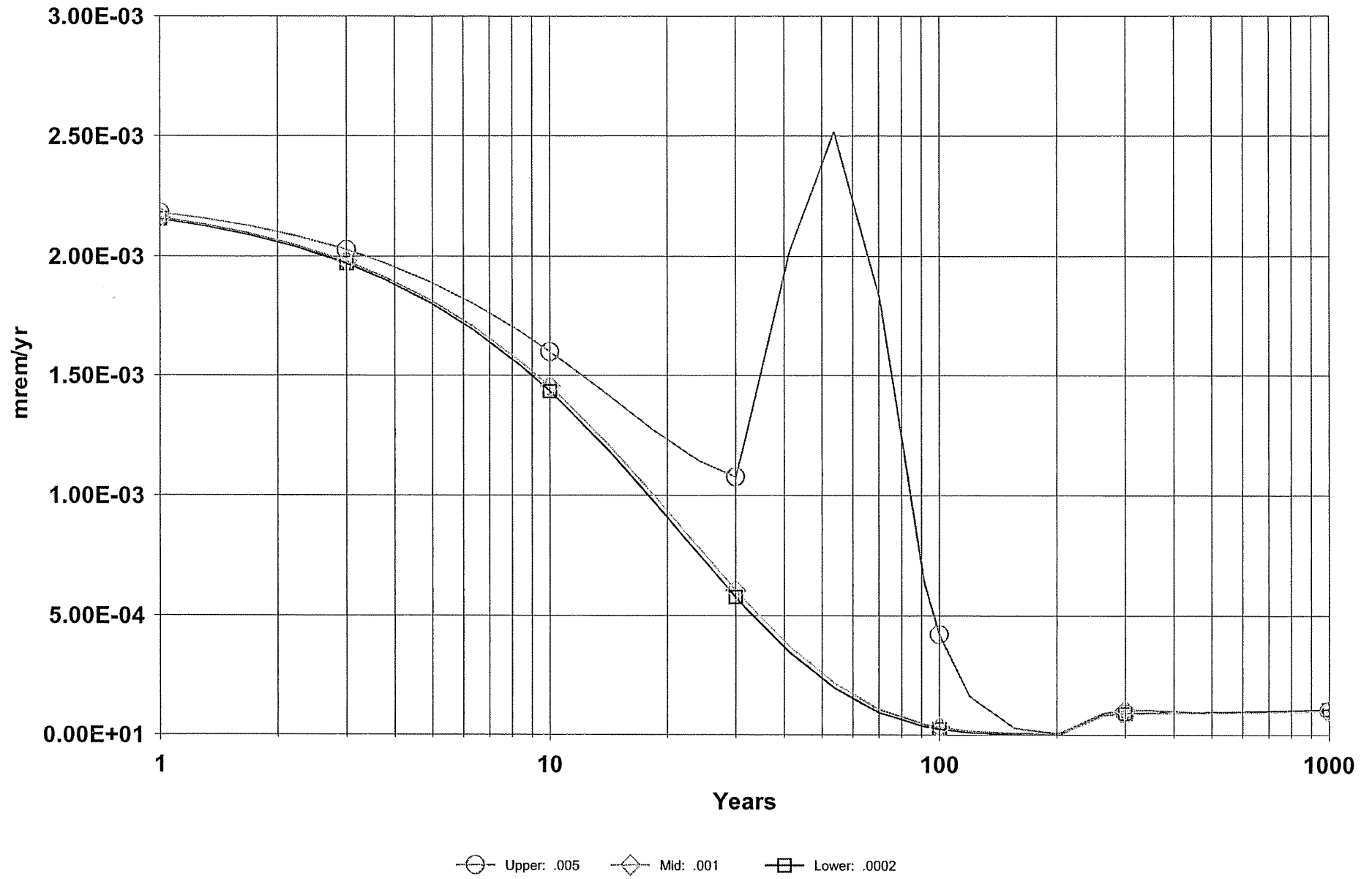
DOSE: All Nuclides Summed, All Pathways Summed With SA on Cover depth



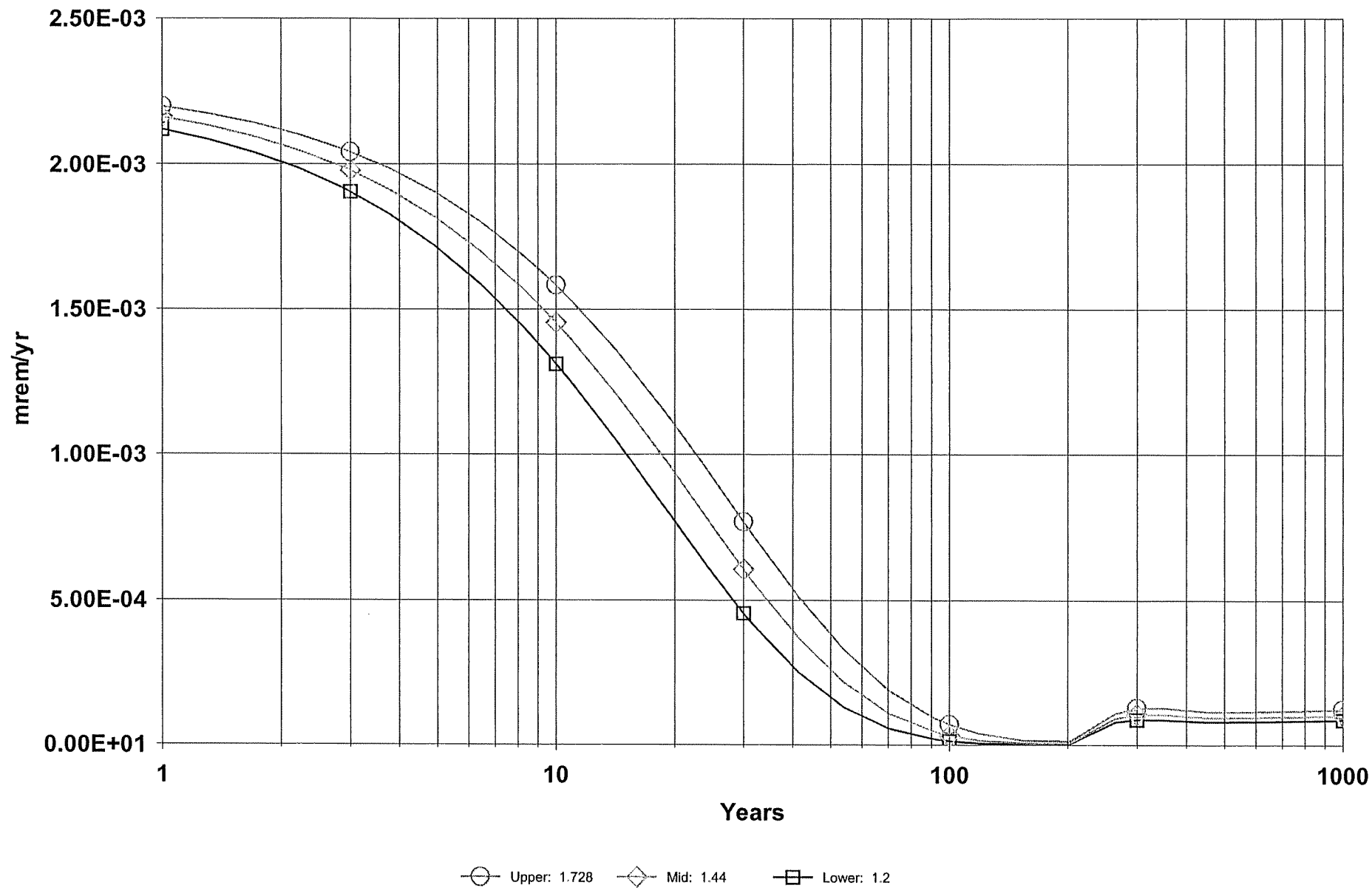
DOSE: All Nuclides Summed, All Pathways Summed With SA on Density of cover material



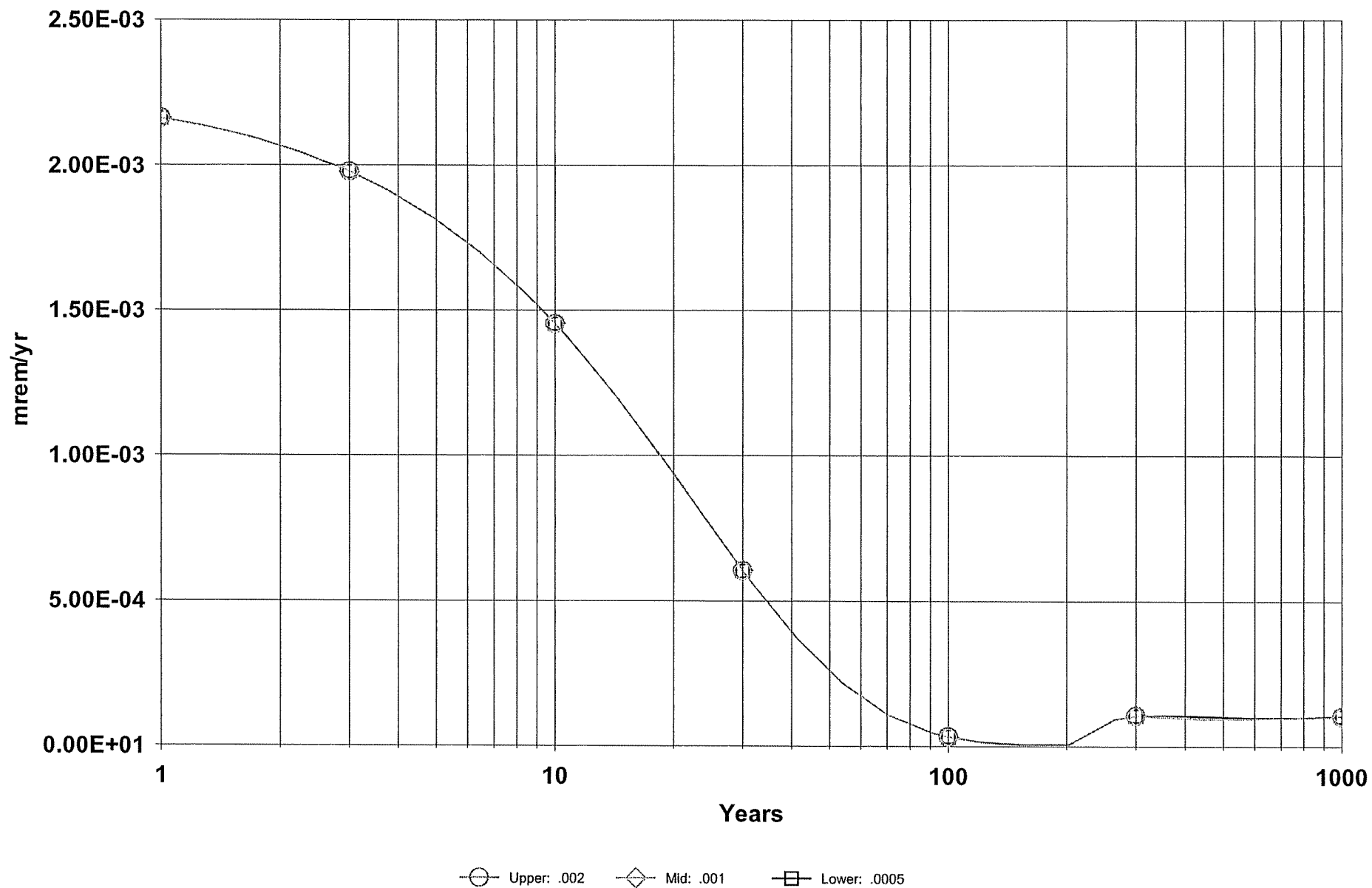
DOSE: All Nuclides Summed, All Pathways Summed With SA on Cover erosion rate



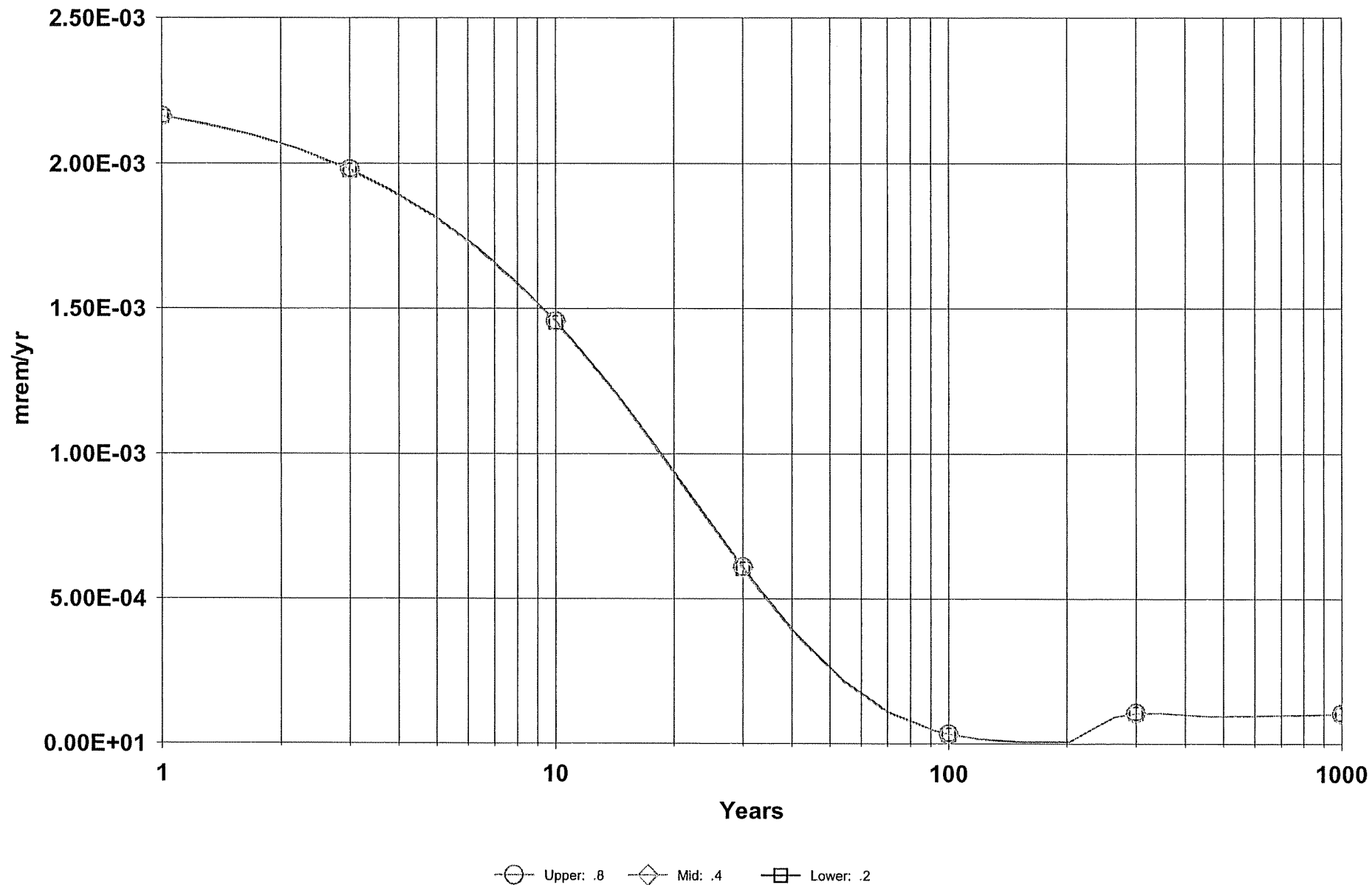
DOSE: All Nuclides Summed, All Pathways Summed With SA on Density of contaminated zone



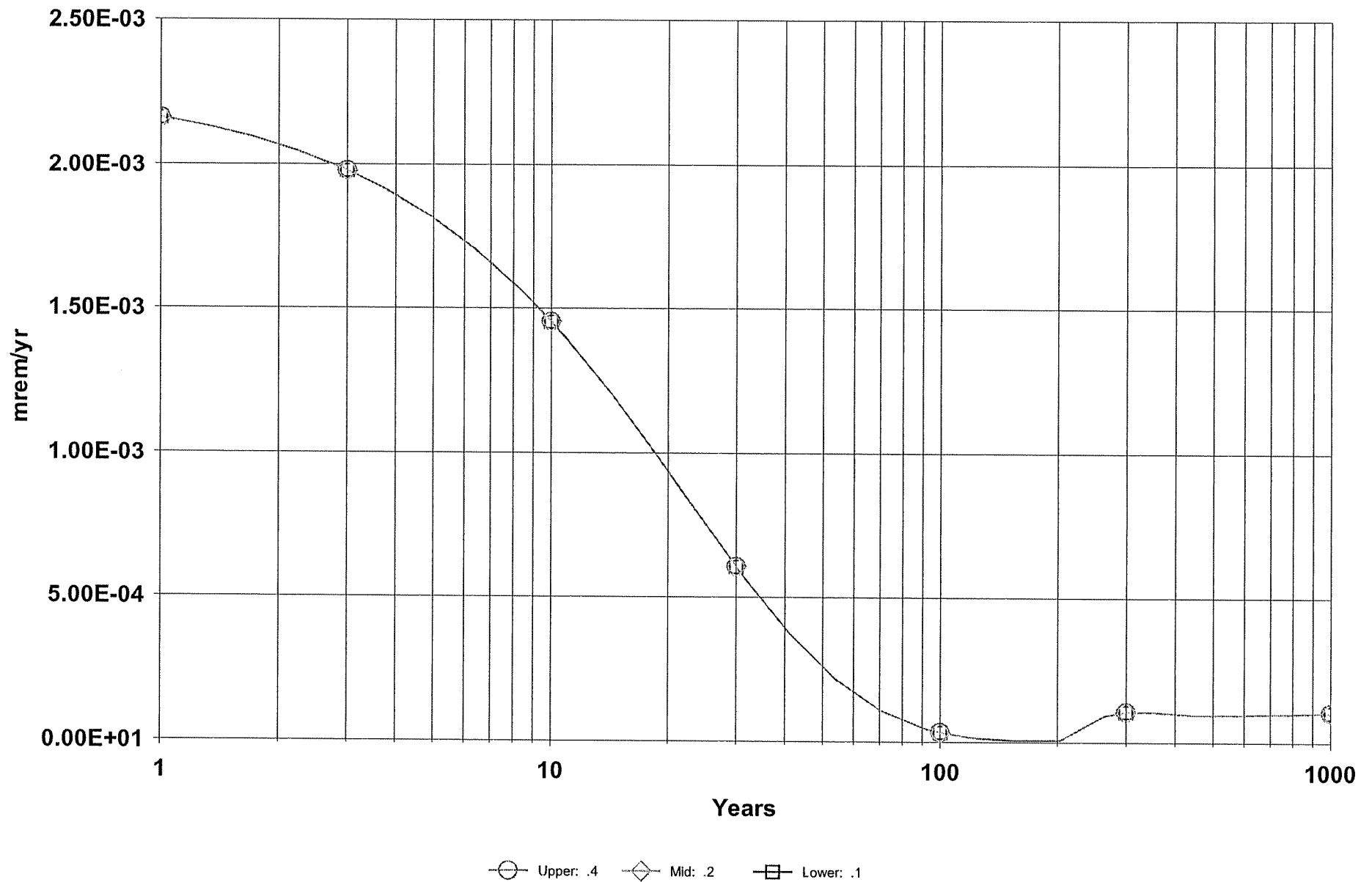
DOSE: All Nuclides Summed, All Pathways Summed With SA on Contaminated zone erosion rate



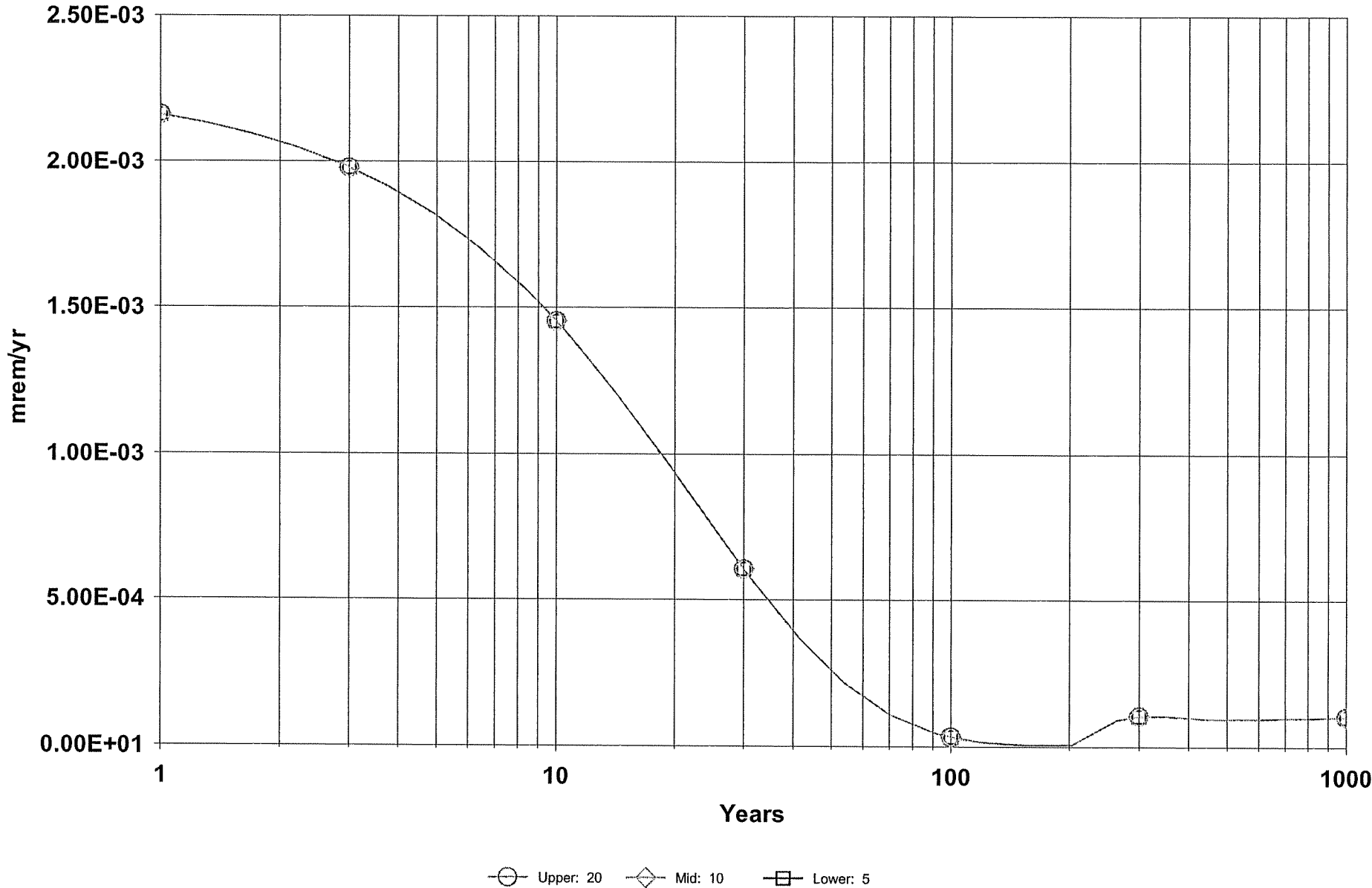
DOSE: All Nuclides Summed, All Pathways Summed With SA on Contaminated zone total porosity



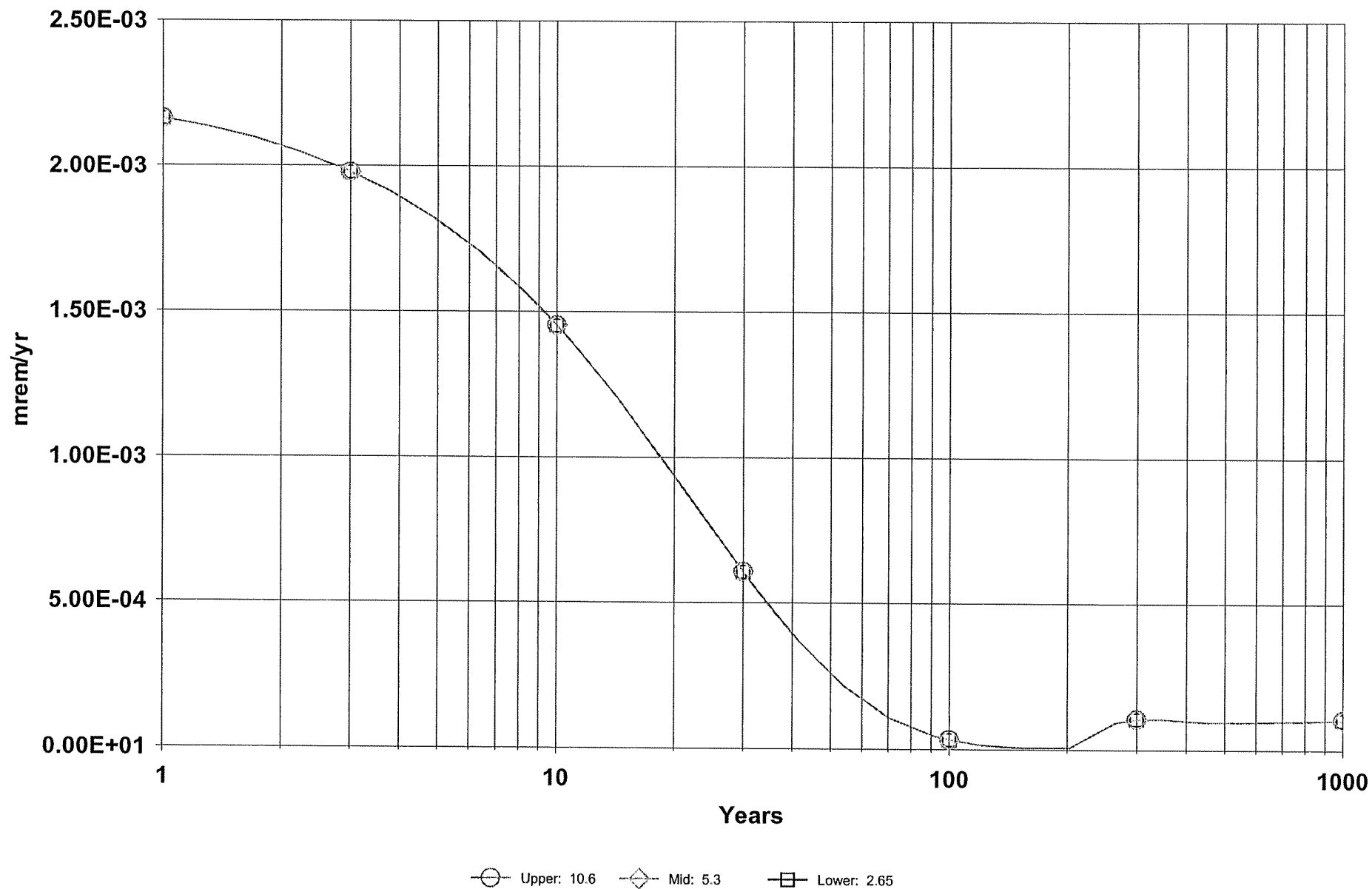
DOSE: All Nuclides Summed, All Pathways Summed With SA on Contaminated zone field capacity



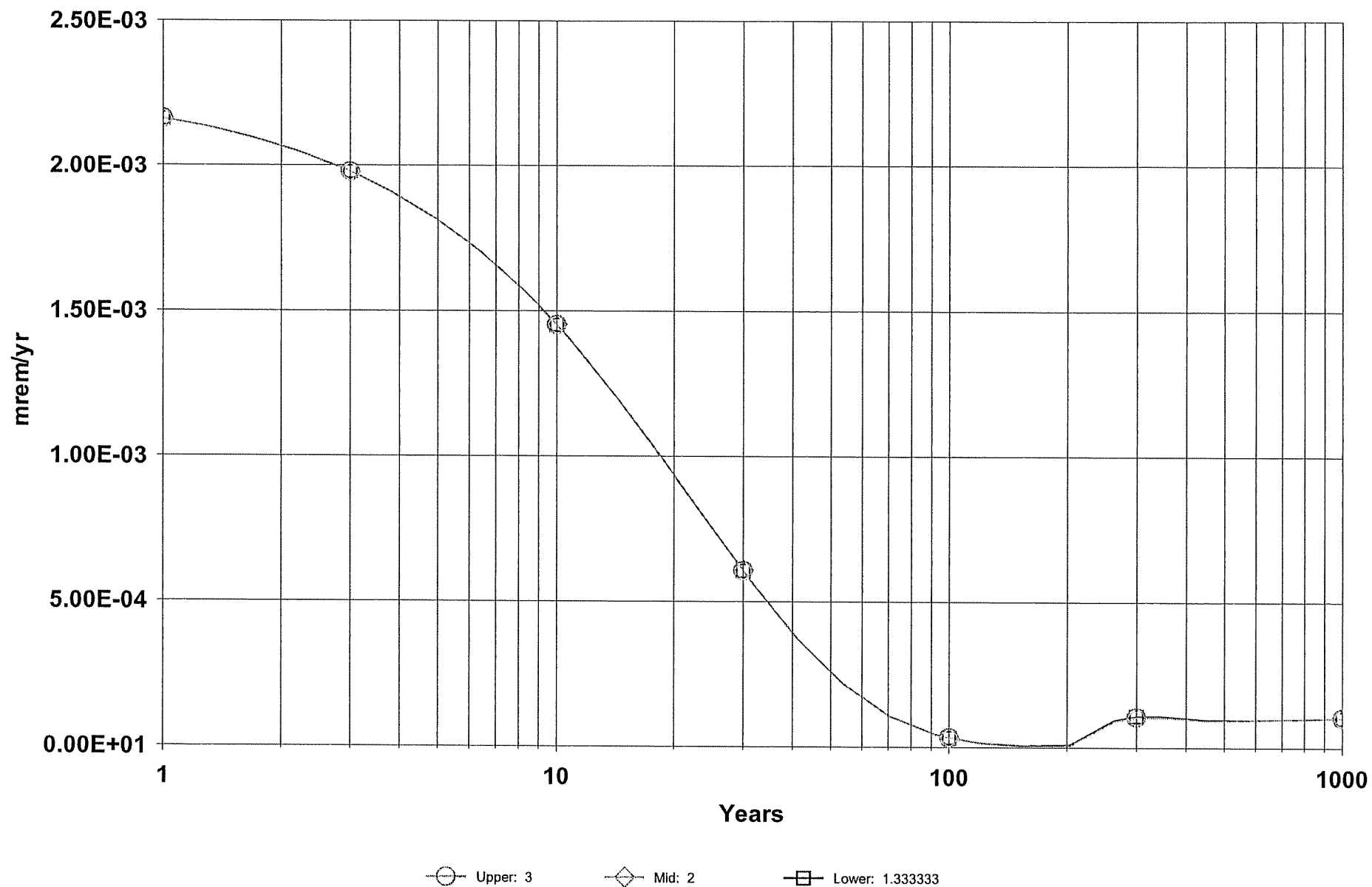
DOSE: All Nuclides Summed, All Pathways Summed With SA on Contaminated zone hydraulic conductivity



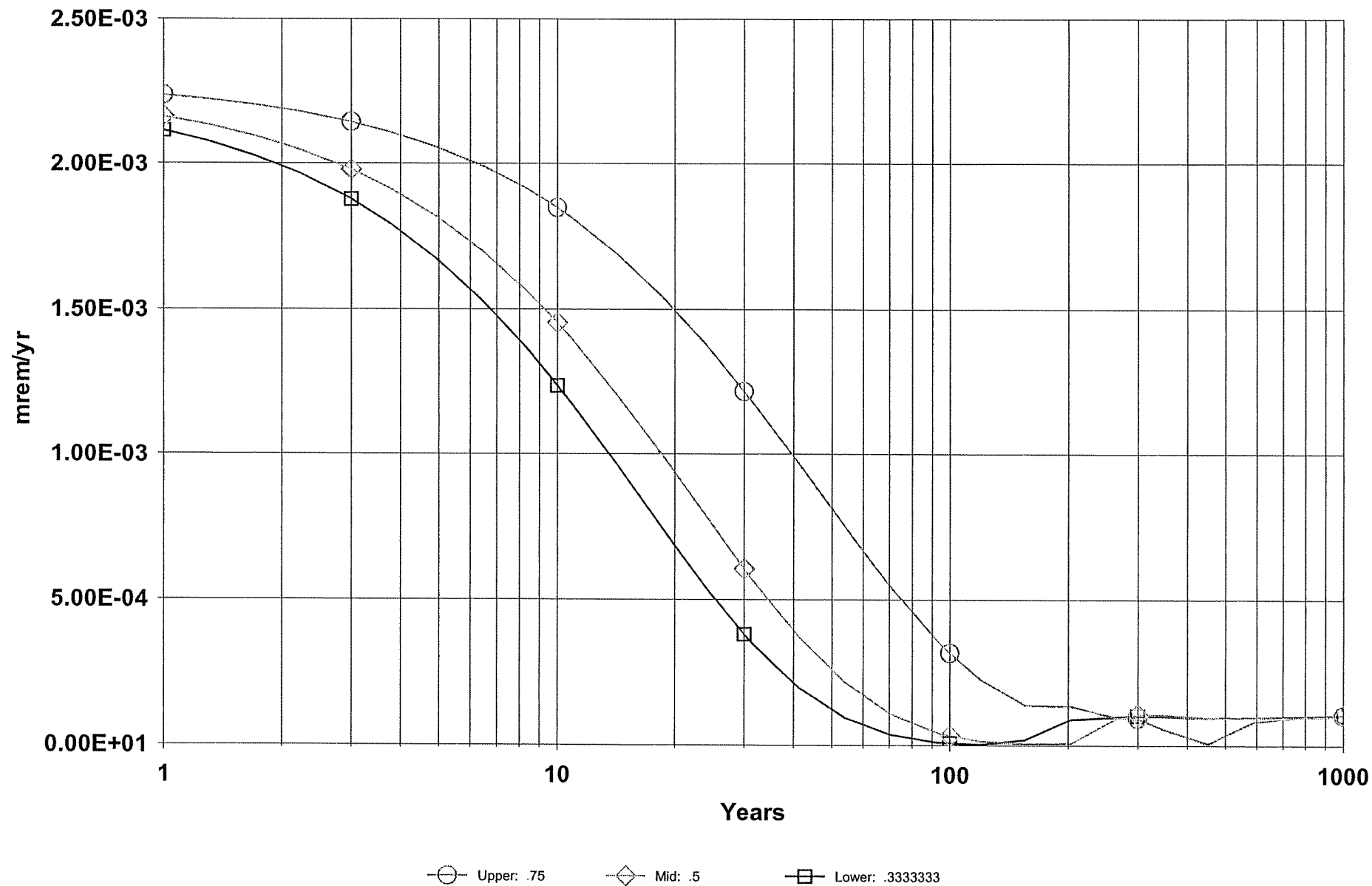
DOSE: All Nuclides Summed, All Pathways Summed With SA on Contaminated zone b parameter



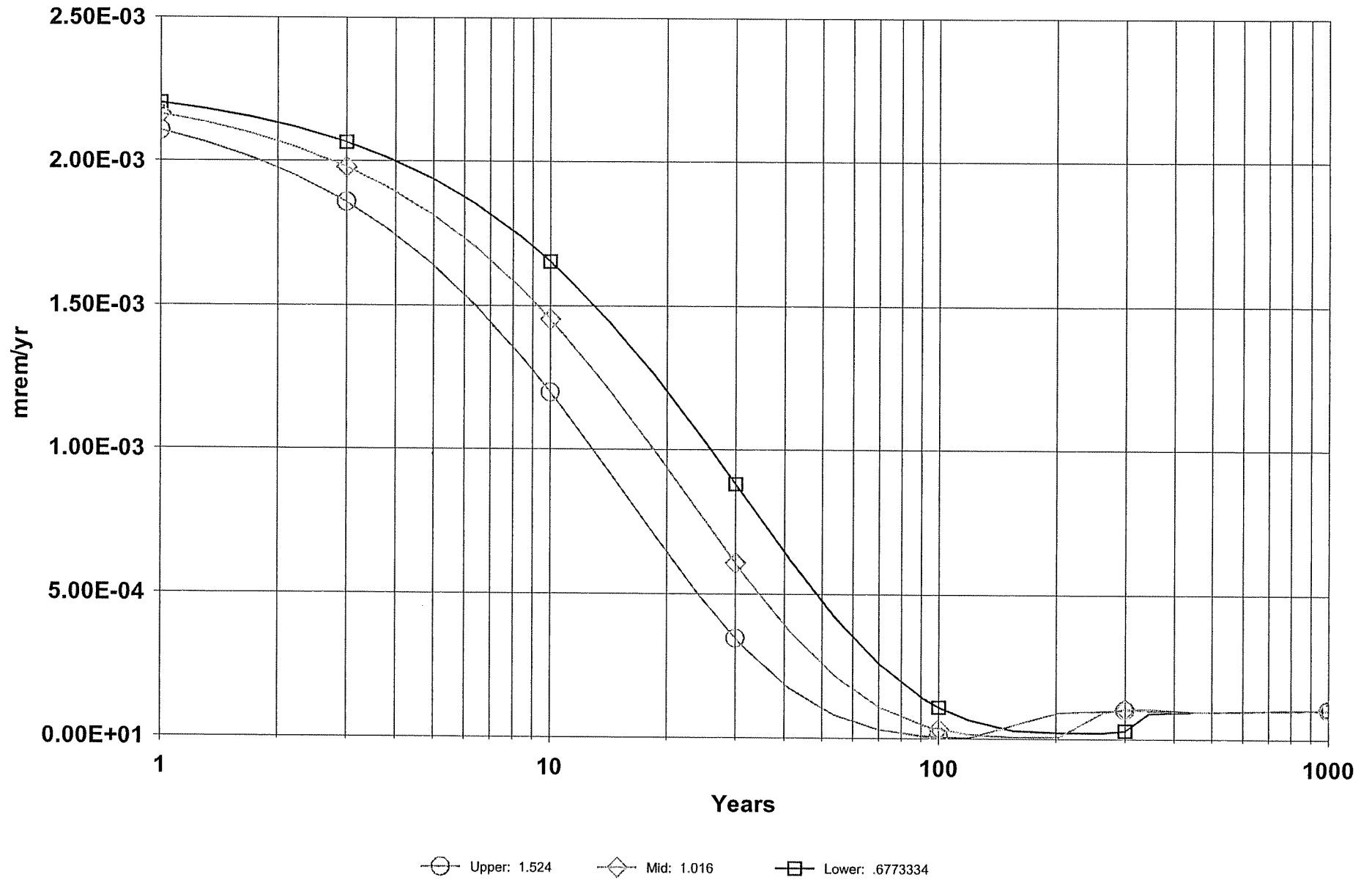
DOSE: All Nuclides Summed, All Pathways Summed With SA on Average annual wind speed



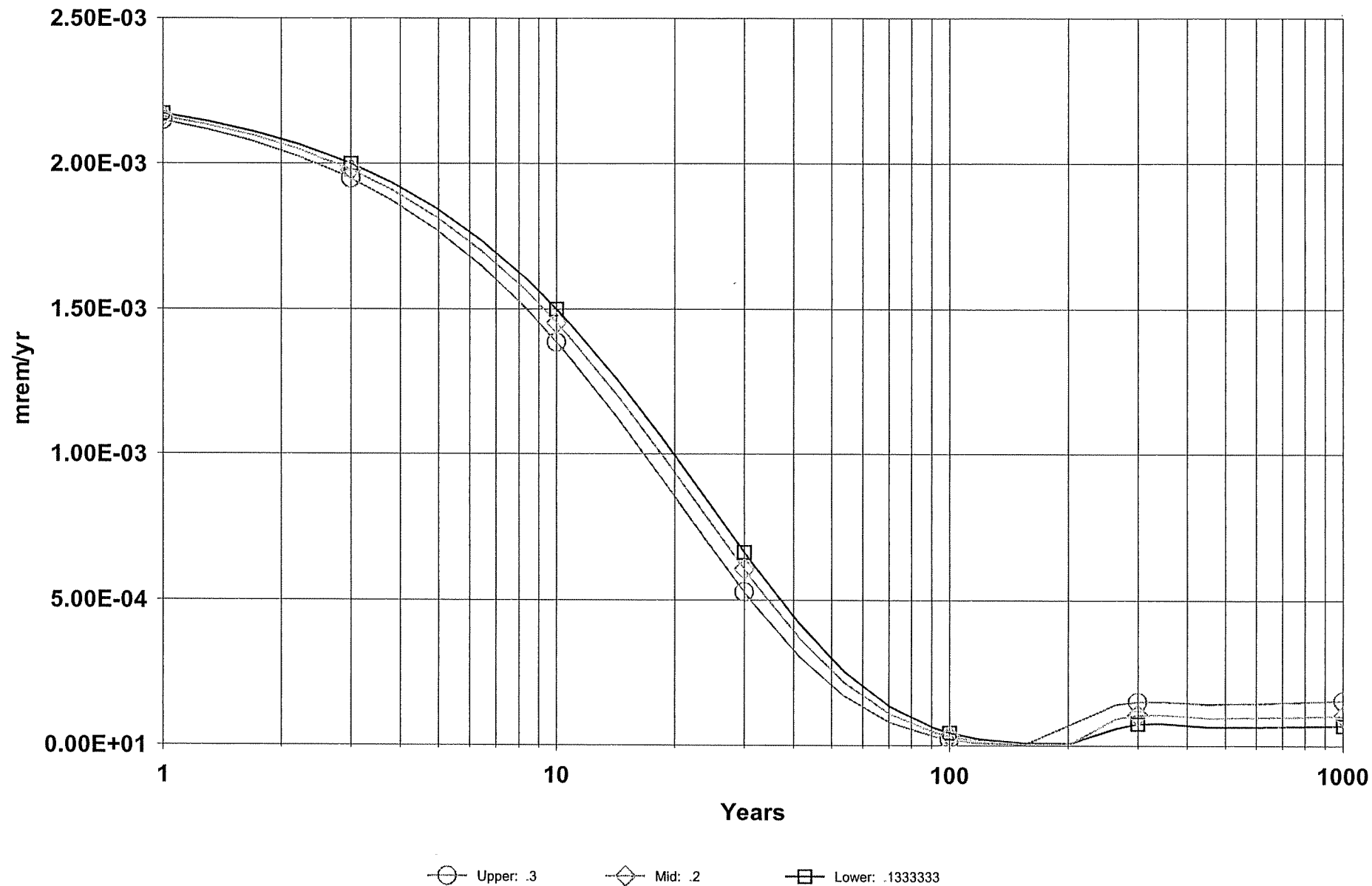
DOSE: All Nuclides Summed, All Pathways Summed With SA on Evapotranspiration coefficient



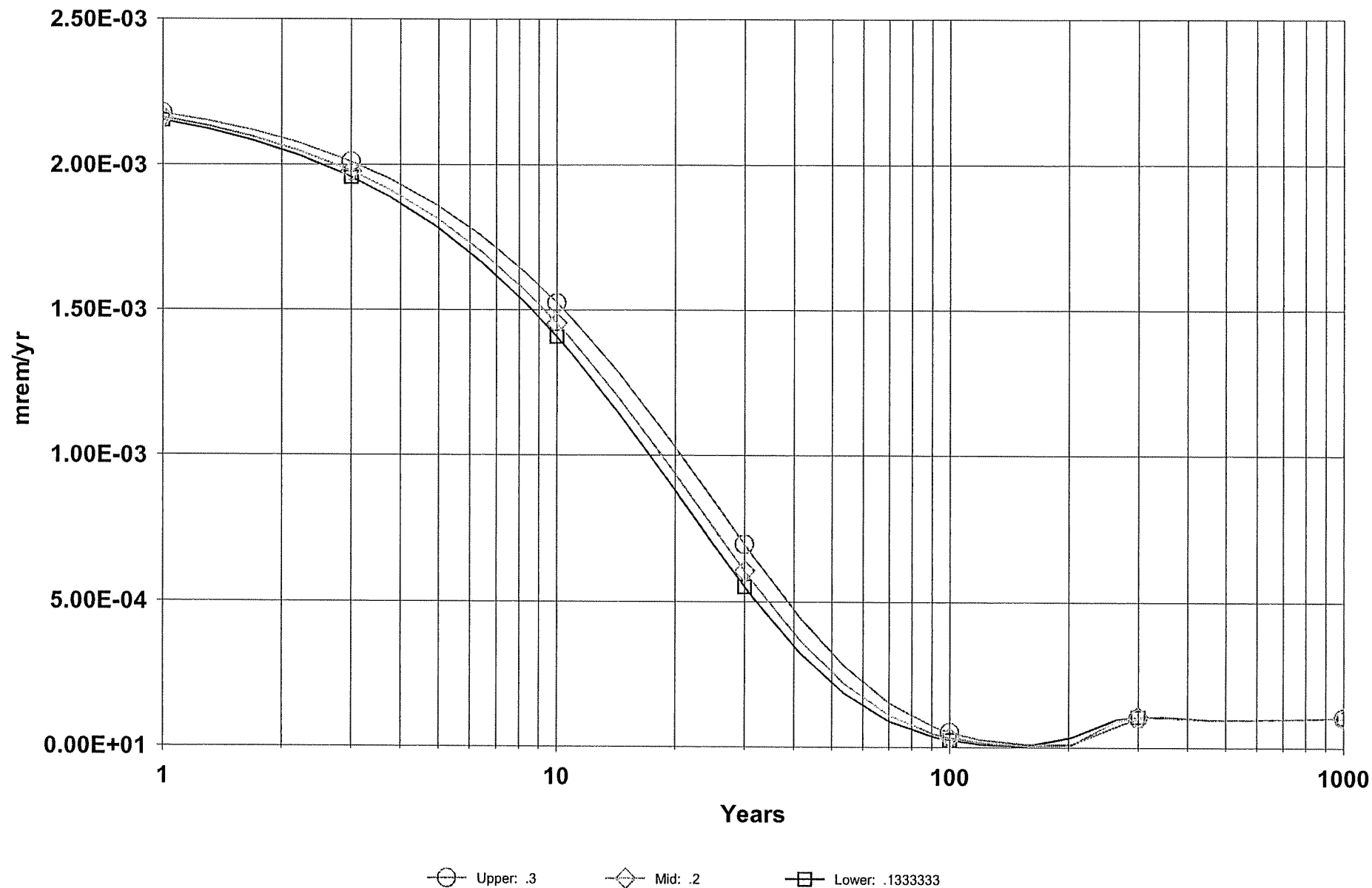
DOSE: All Nuclides Summed, All Pathways Summed With SA on Precipitation



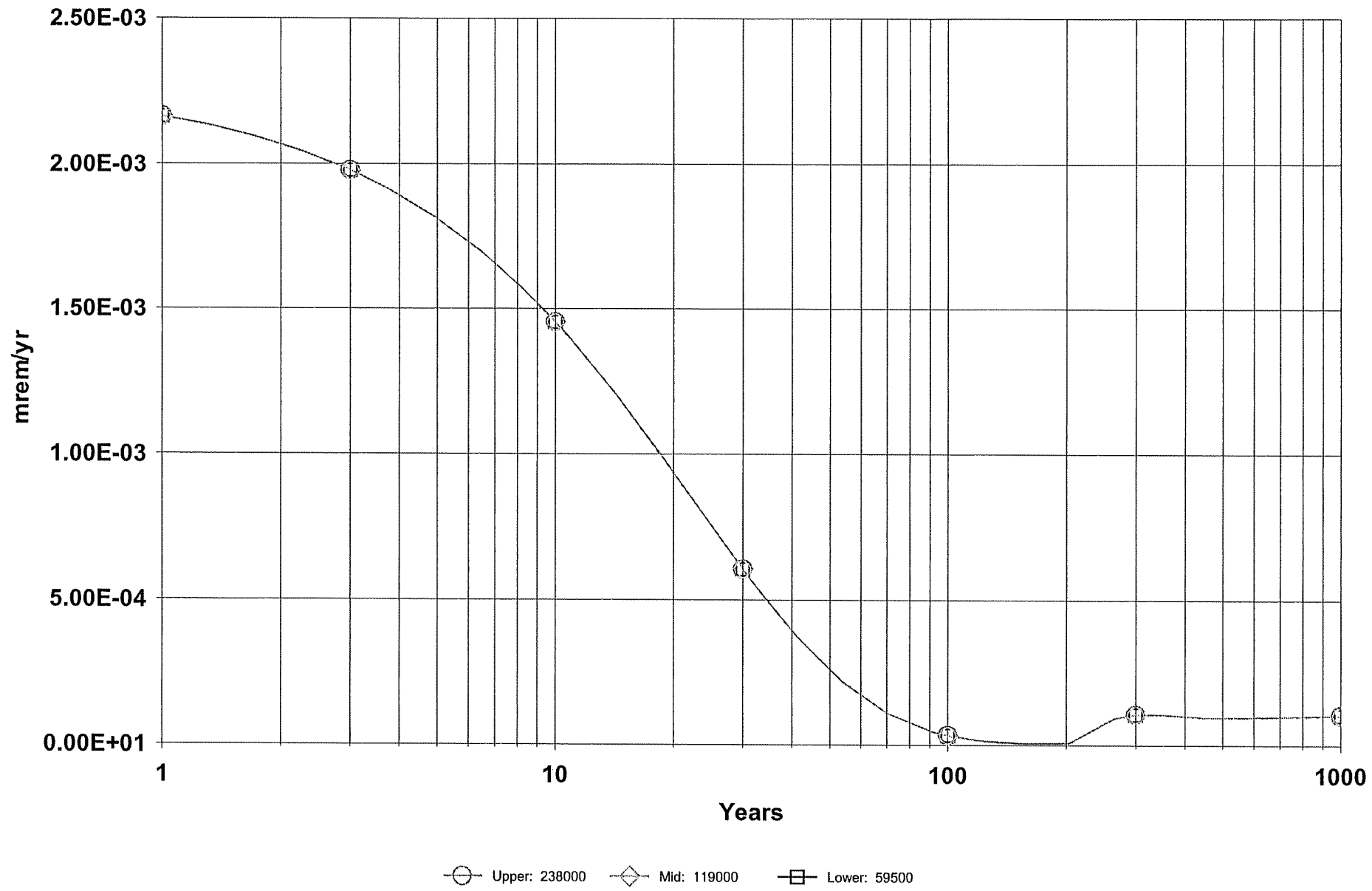
DOSE: All Nuclides Summed, All Pathways Summed With SA on Irrigation



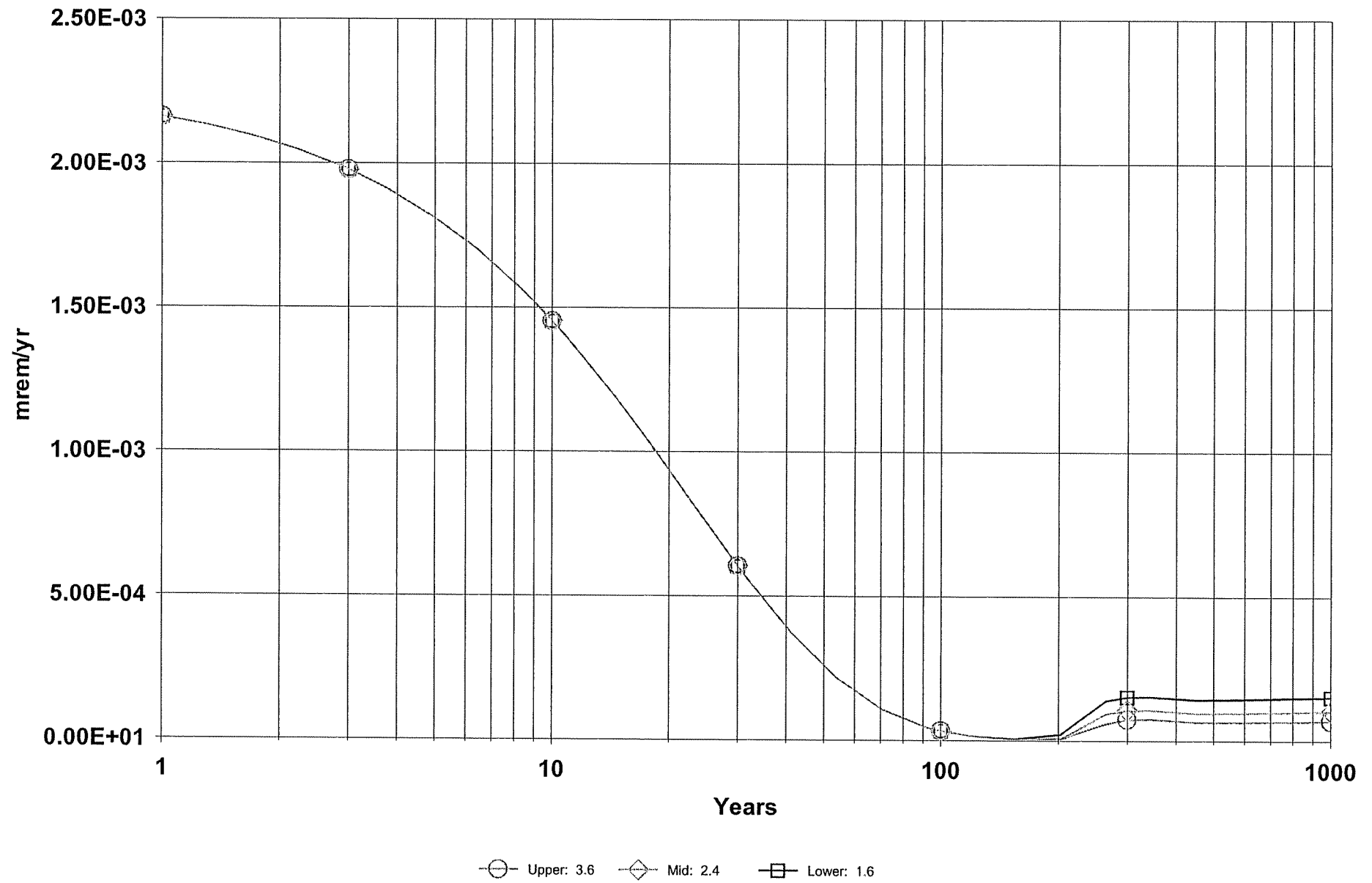
DOSE: All Nuclides Summed, All Pathways Summed With SA on Runoff coefficient



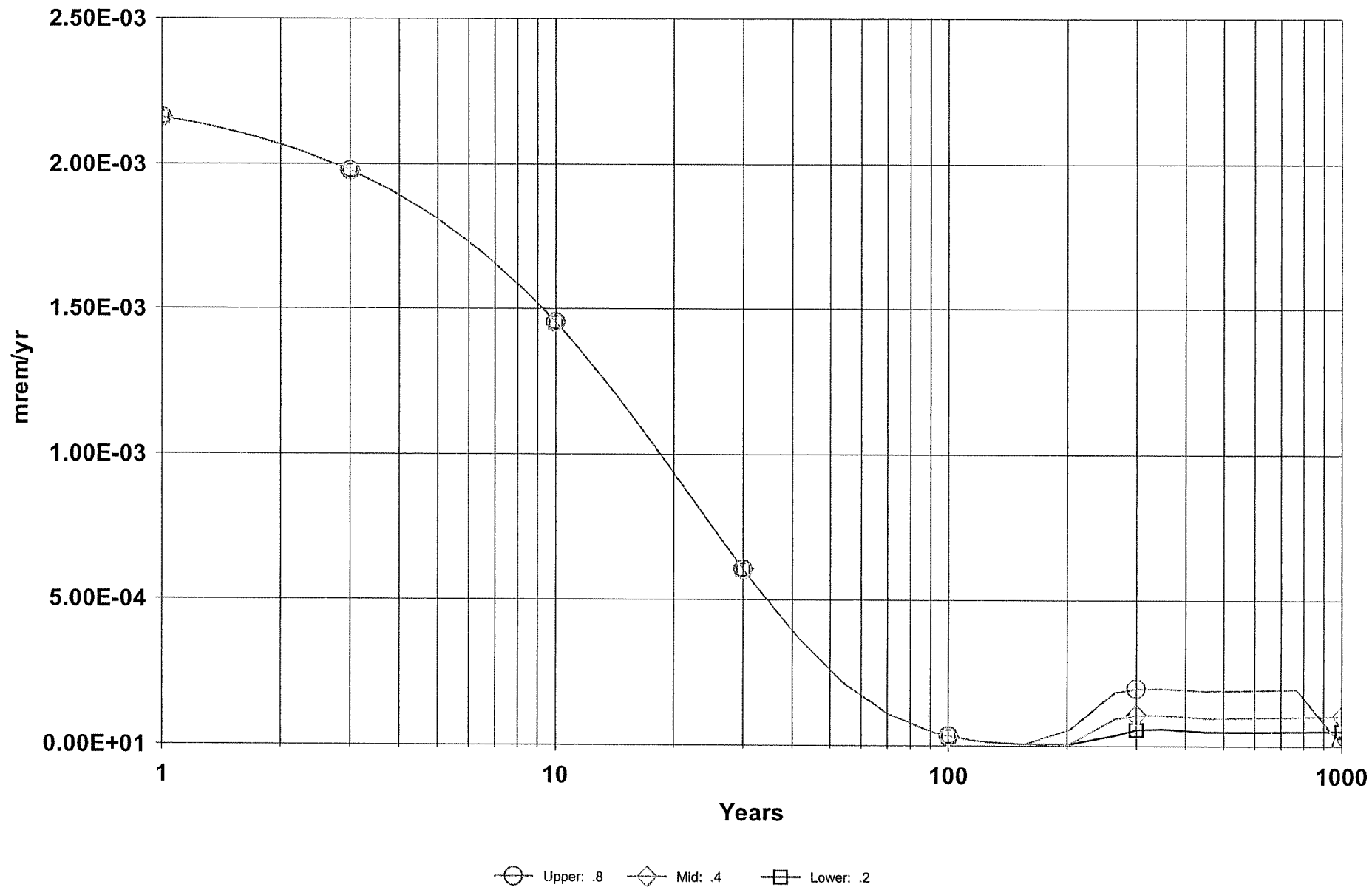
DOSE: All Nuclides Summed, All Pathways Summed With SA on Watershed area for nearby stream or pond



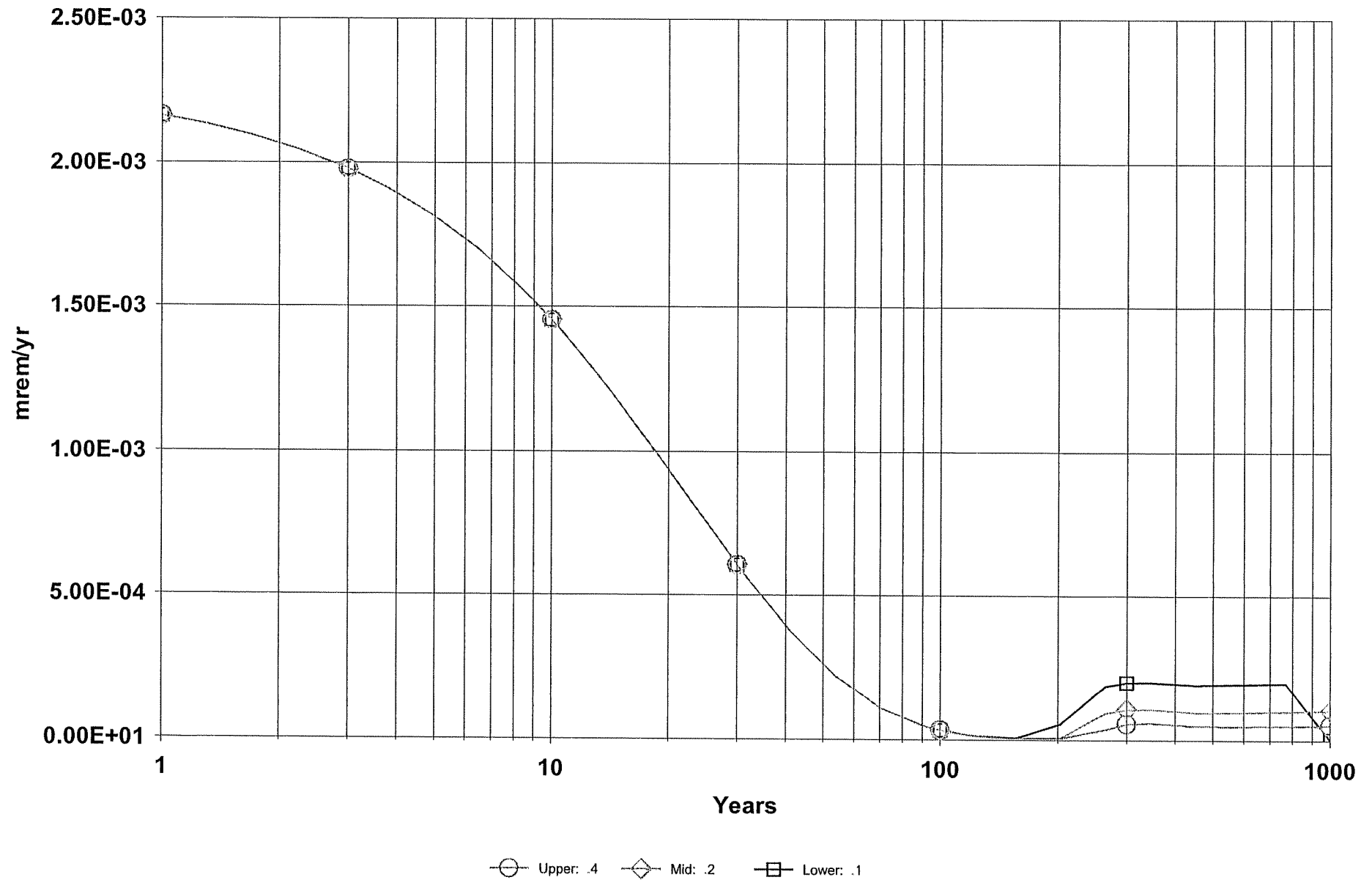
DOSE: All Nuclides Summed, All Pathways Summed With SA on Density of saturated zone



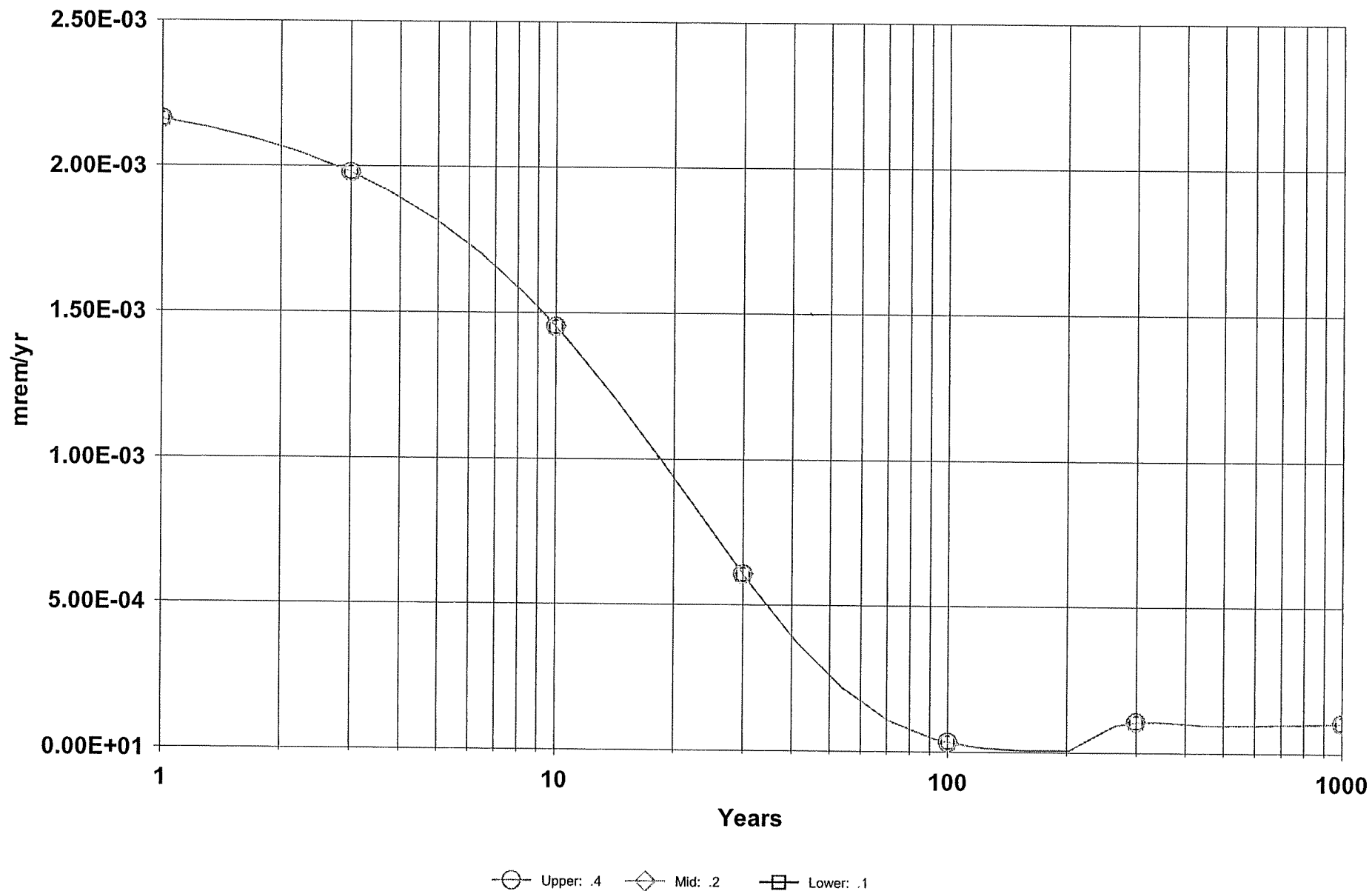
DOSE: All Nuclides Summed, All Pathways Summed With SA on Saturated zone total porosity



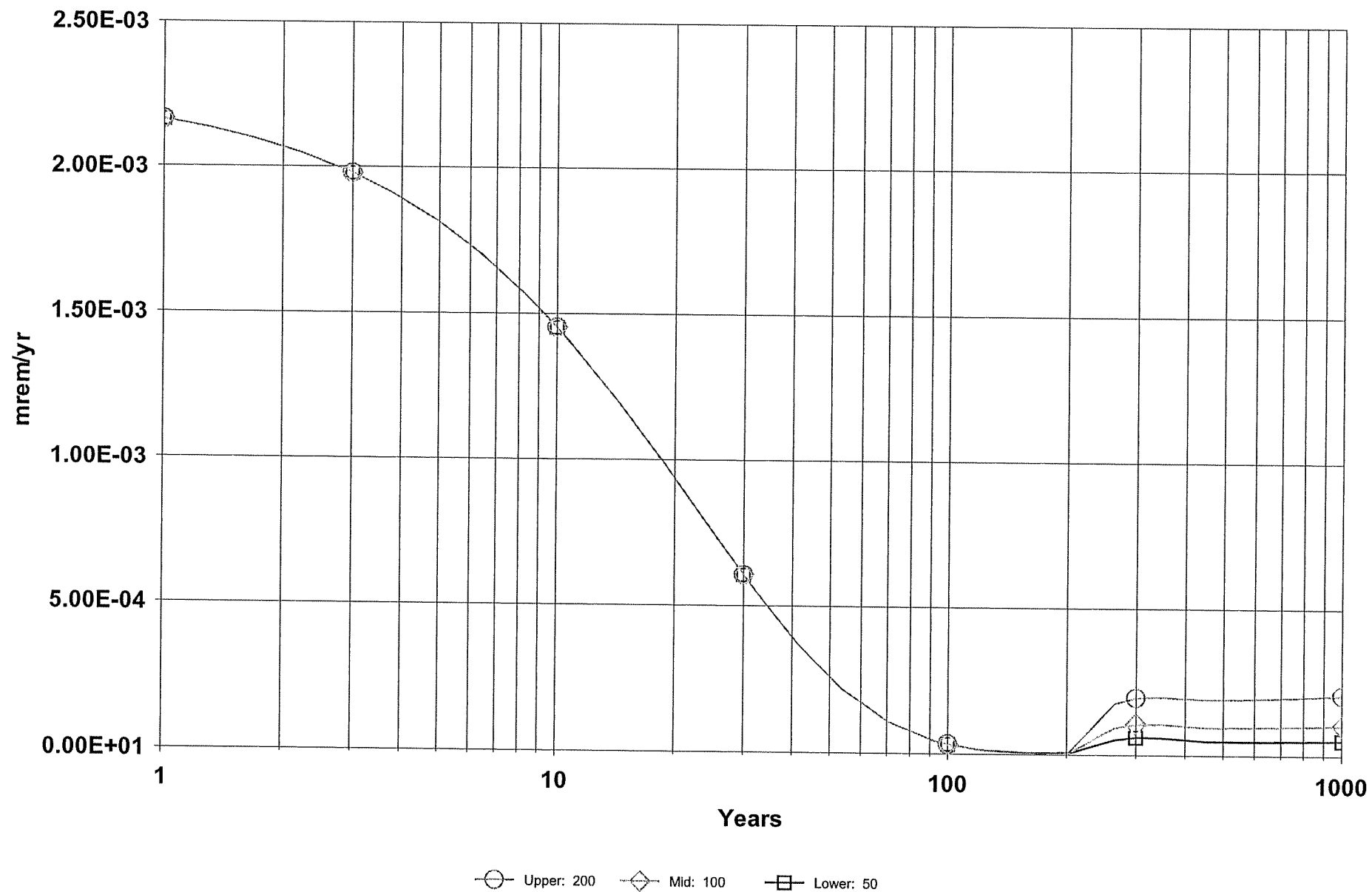
DOSE: All Nuclides Summed, All Pathways Summed With SA on Saturated zone effective porosity



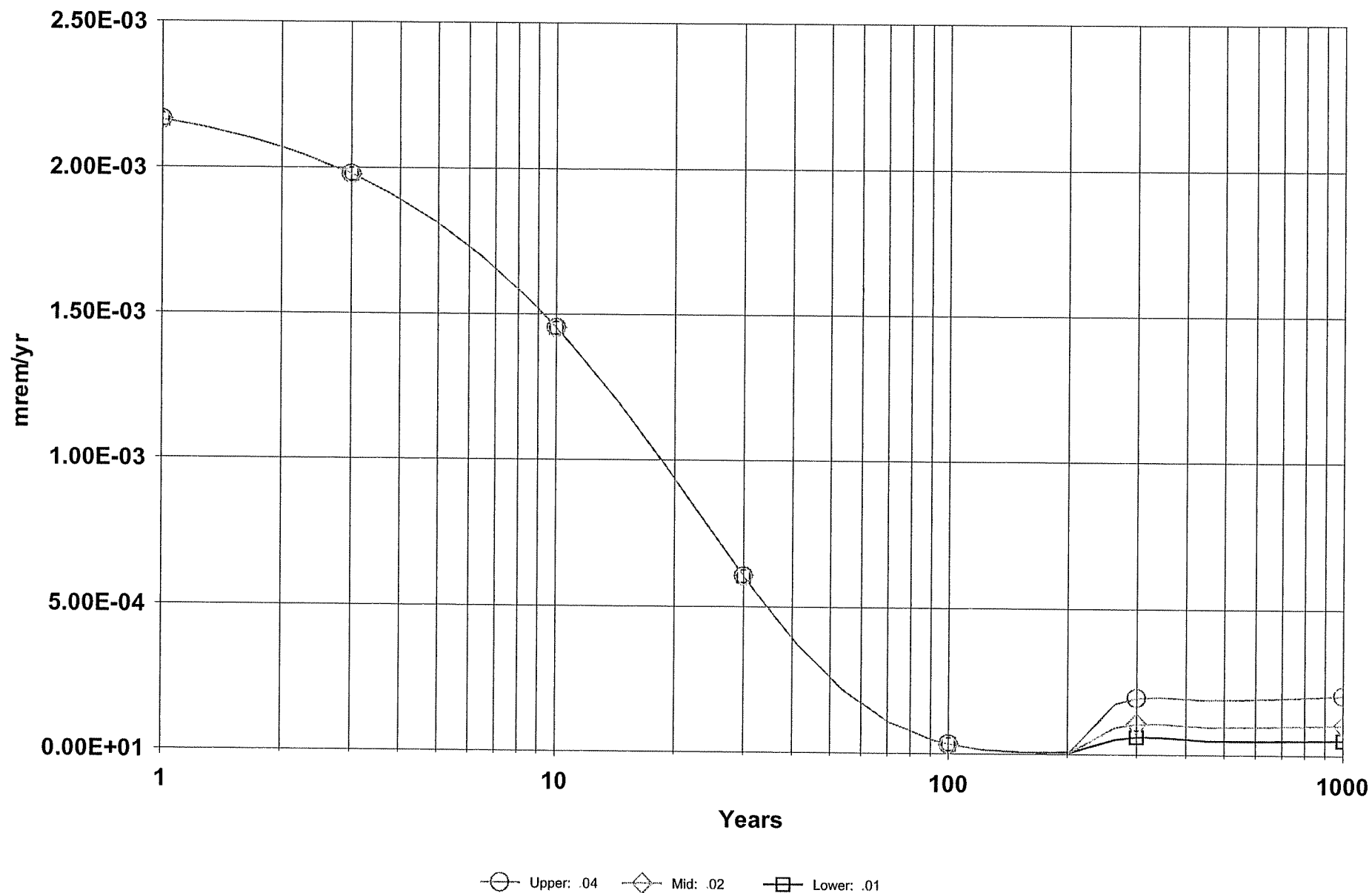
DOSE: All Nuclides Summed, All Pathways Summed With SA on Saturated zone field capacity



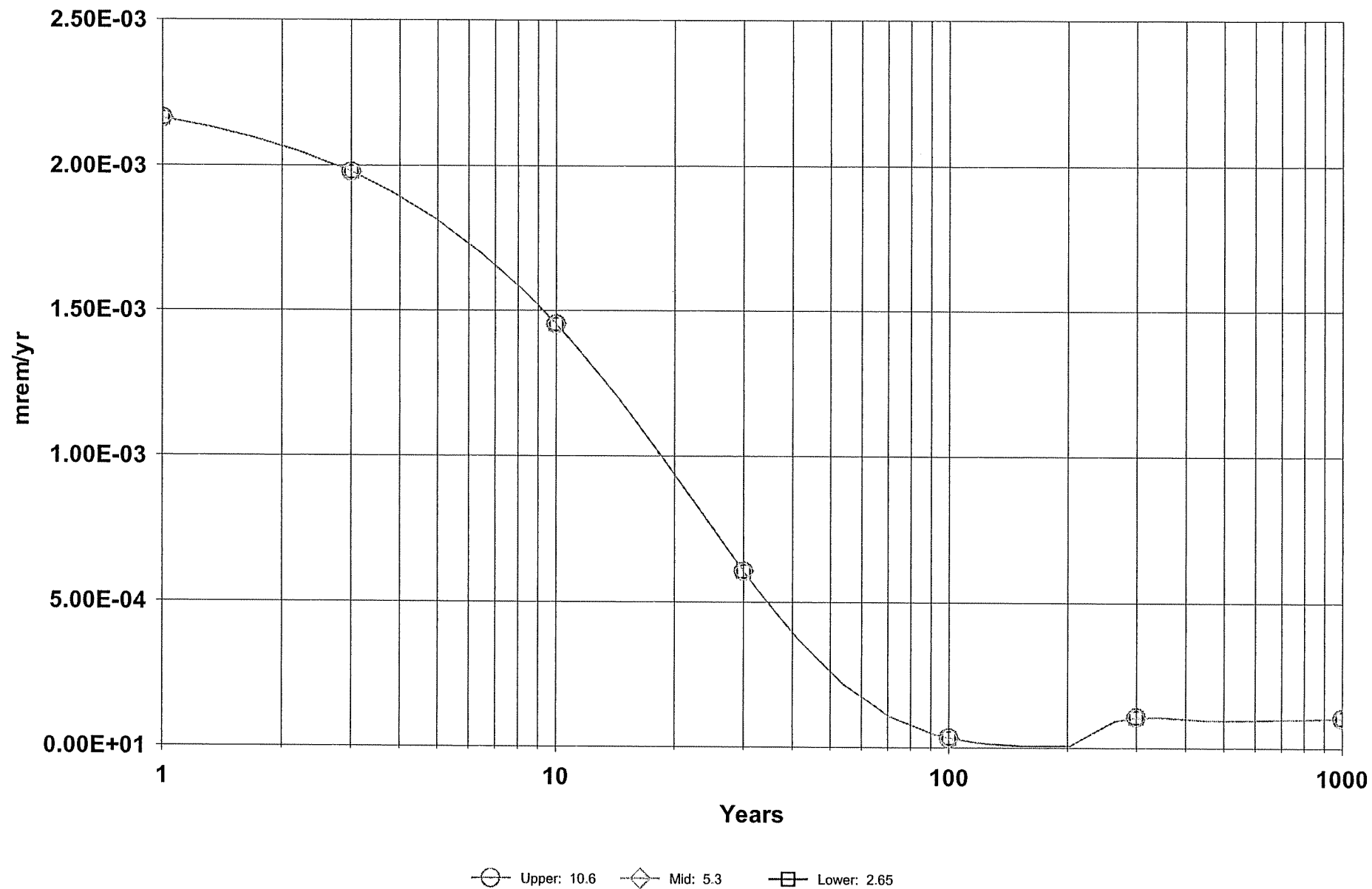
DOSE: All Nuclides Summed, All Pathways Summed With SA on Saturated zone hydraulic conductivity



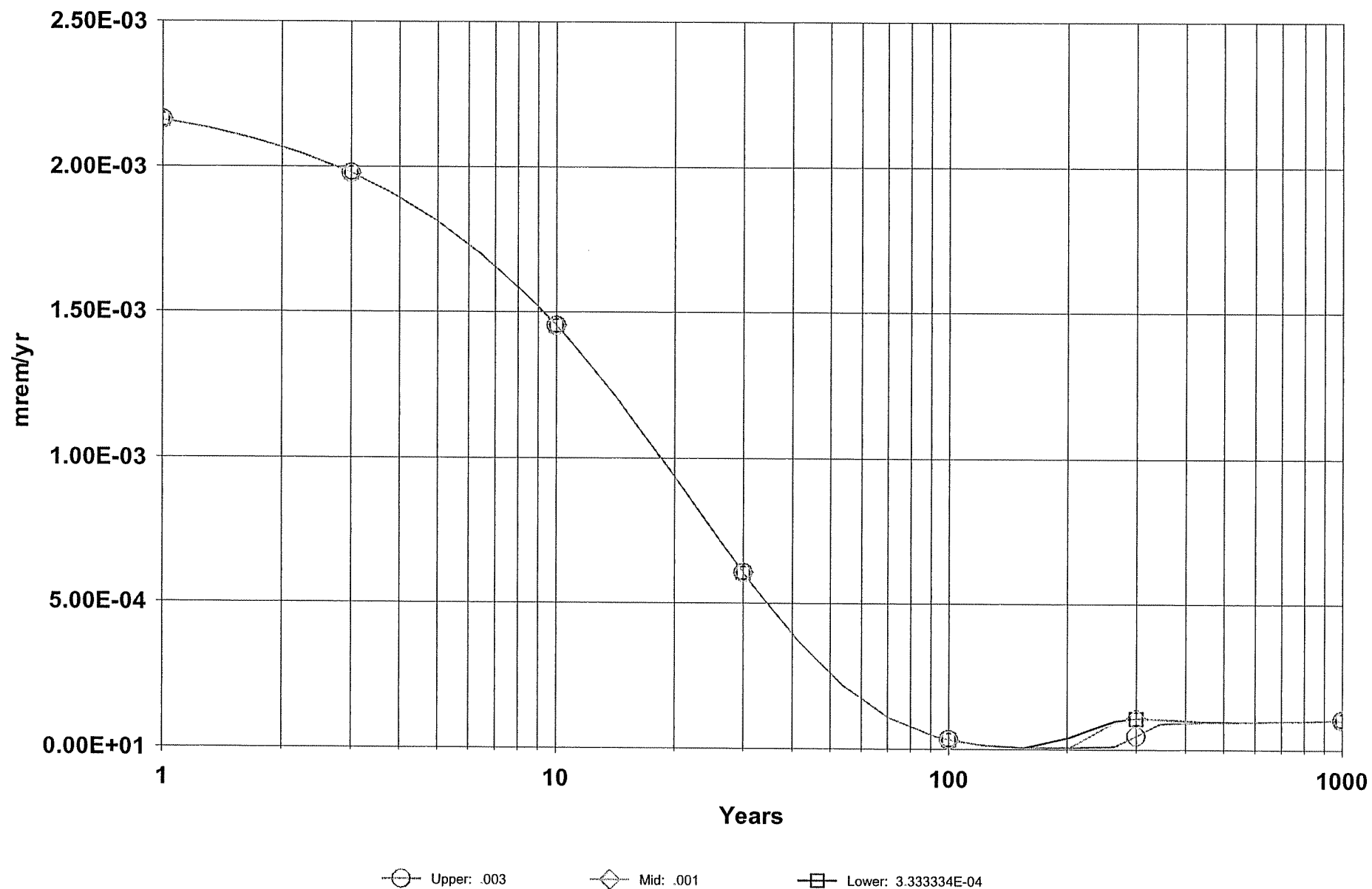
DOSE: All Nuclides Summed, All Pathways Summed With SA on Saturated zone hydraulic gradient



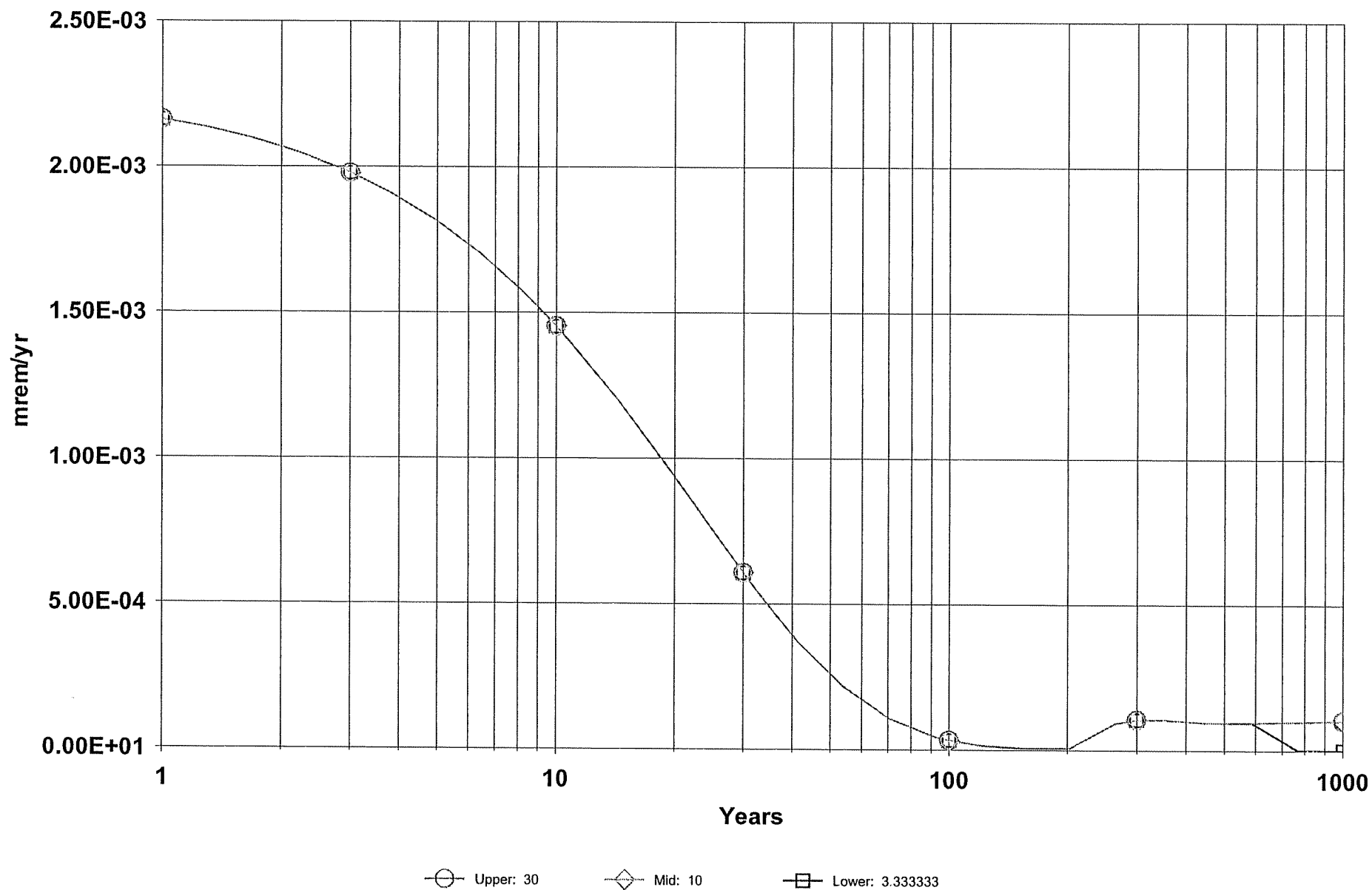
DOSE: All Nuclides Summed, All Pathways Summed With SA on Saturated zone b parameter



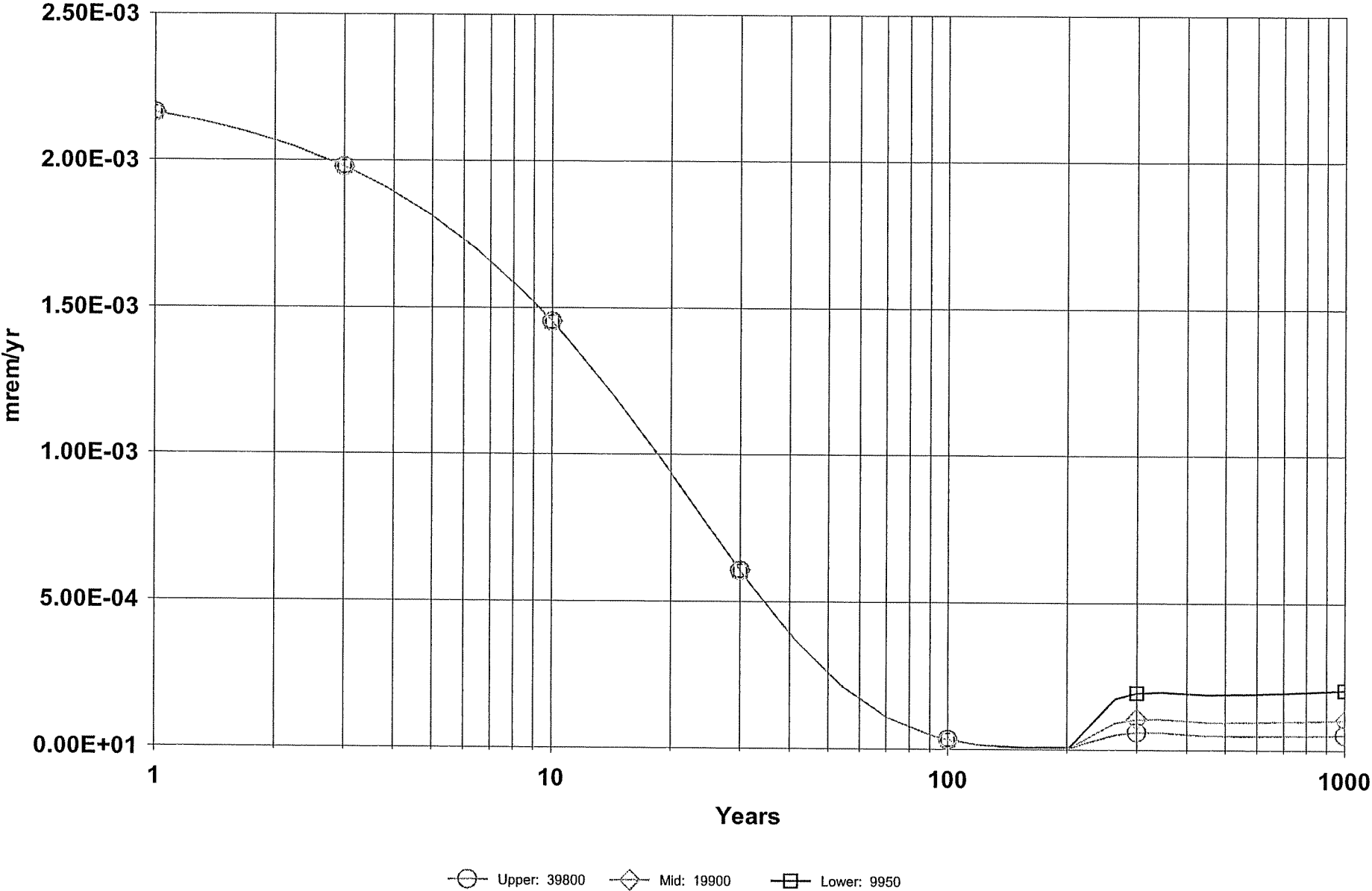
DOSE: All Nuclides Summed, All Pathways Summed With SA on Water table drop rate



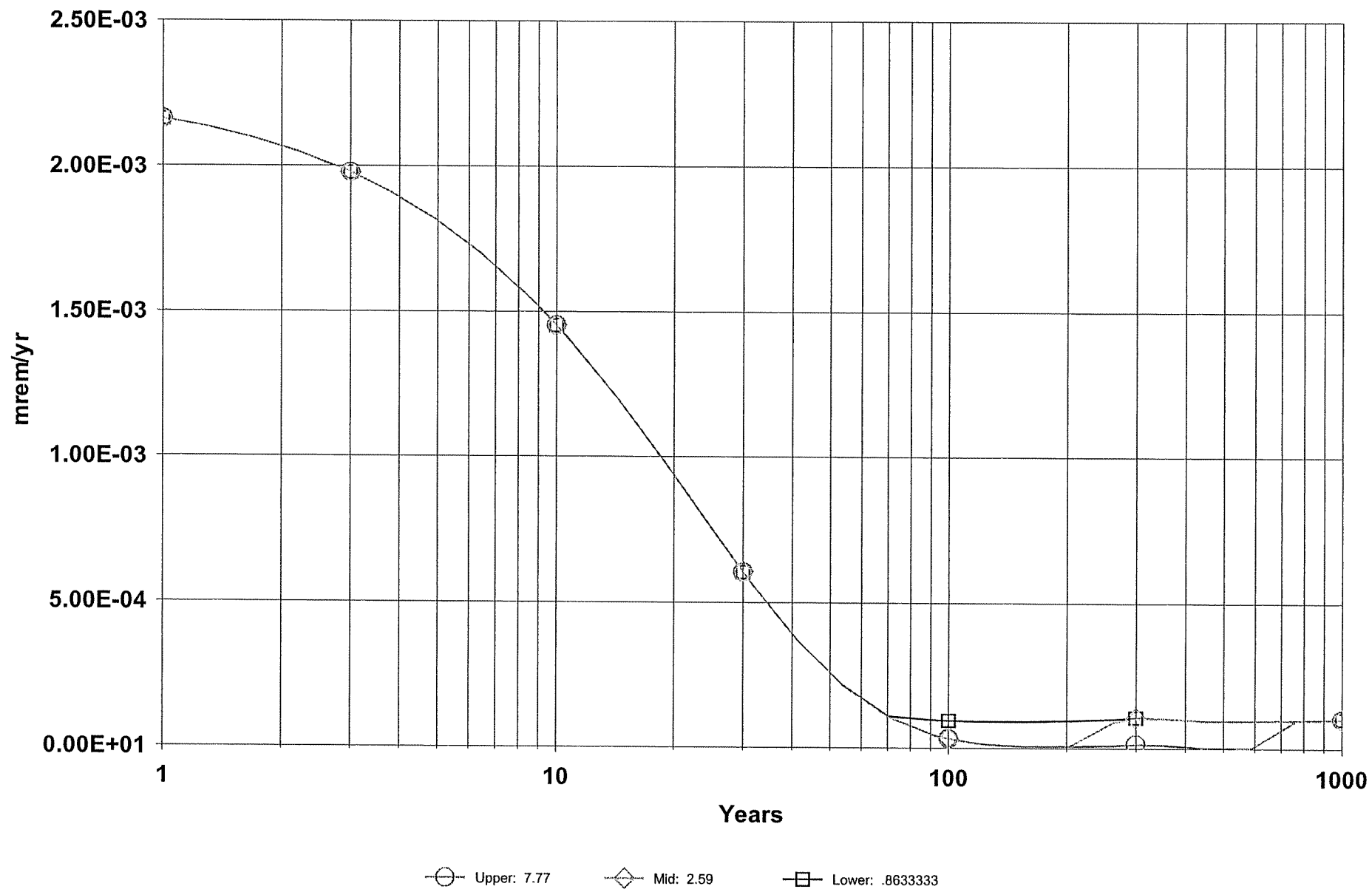
DOSE: All Nuclides Summed, All Pathways Summed With SA on Well pump intake depth



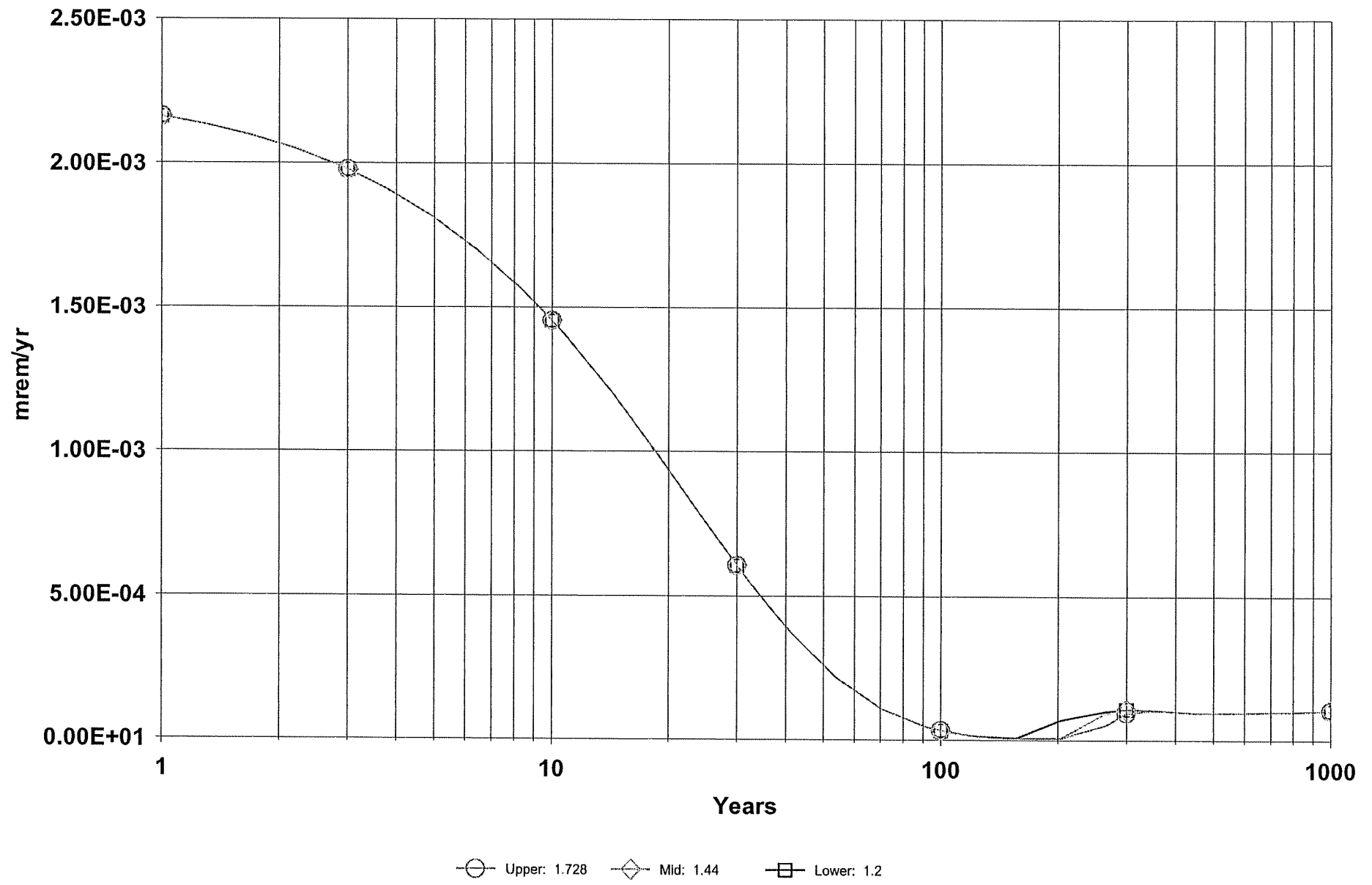
DOSE: All Nuclides Summed, All Pathways Summed With SA on Well pumping rate



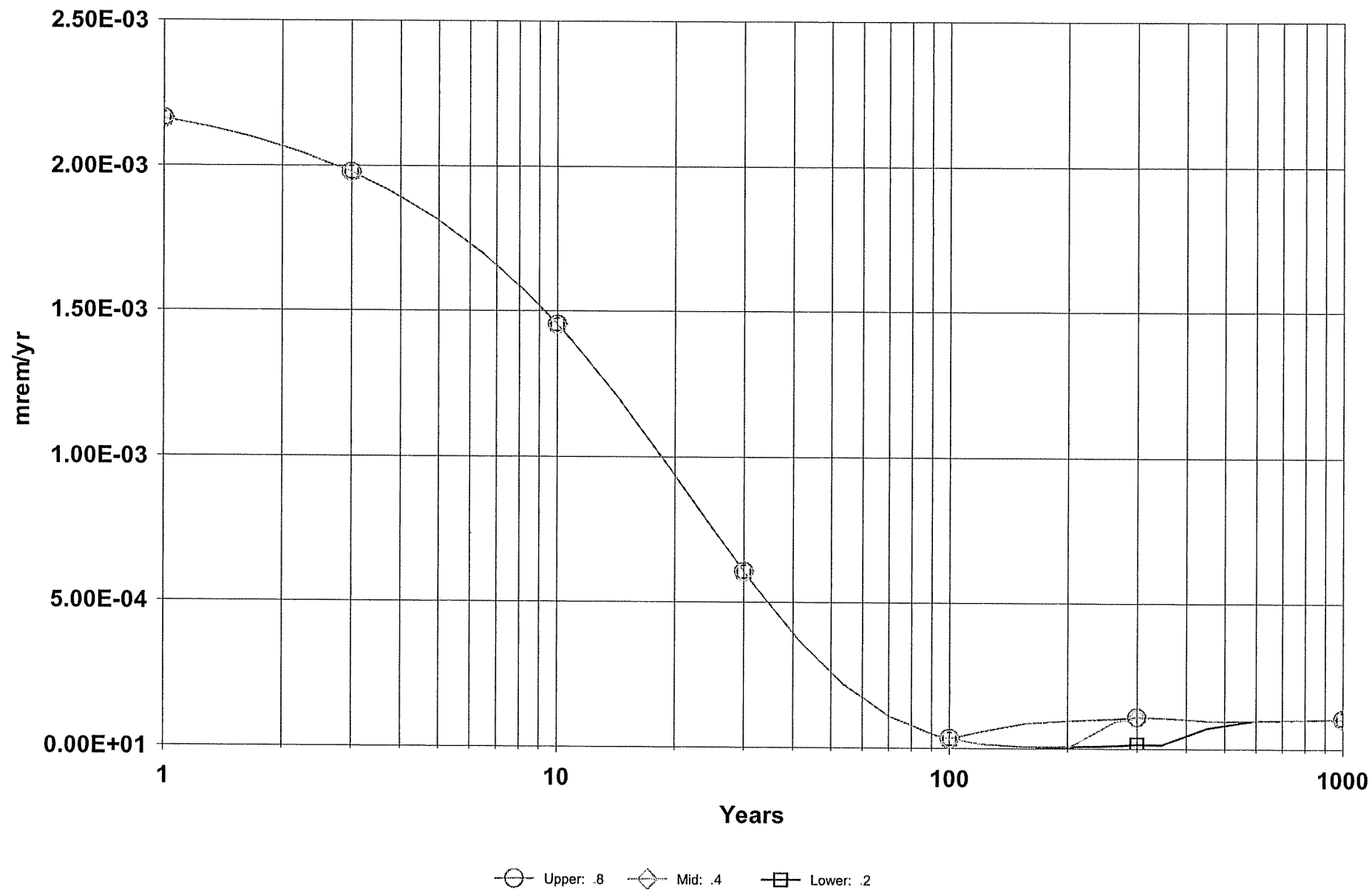
DOSE: All Nuclides Summed, All Pathways Summed With SA on Thickness of Unsaturated Zone 1



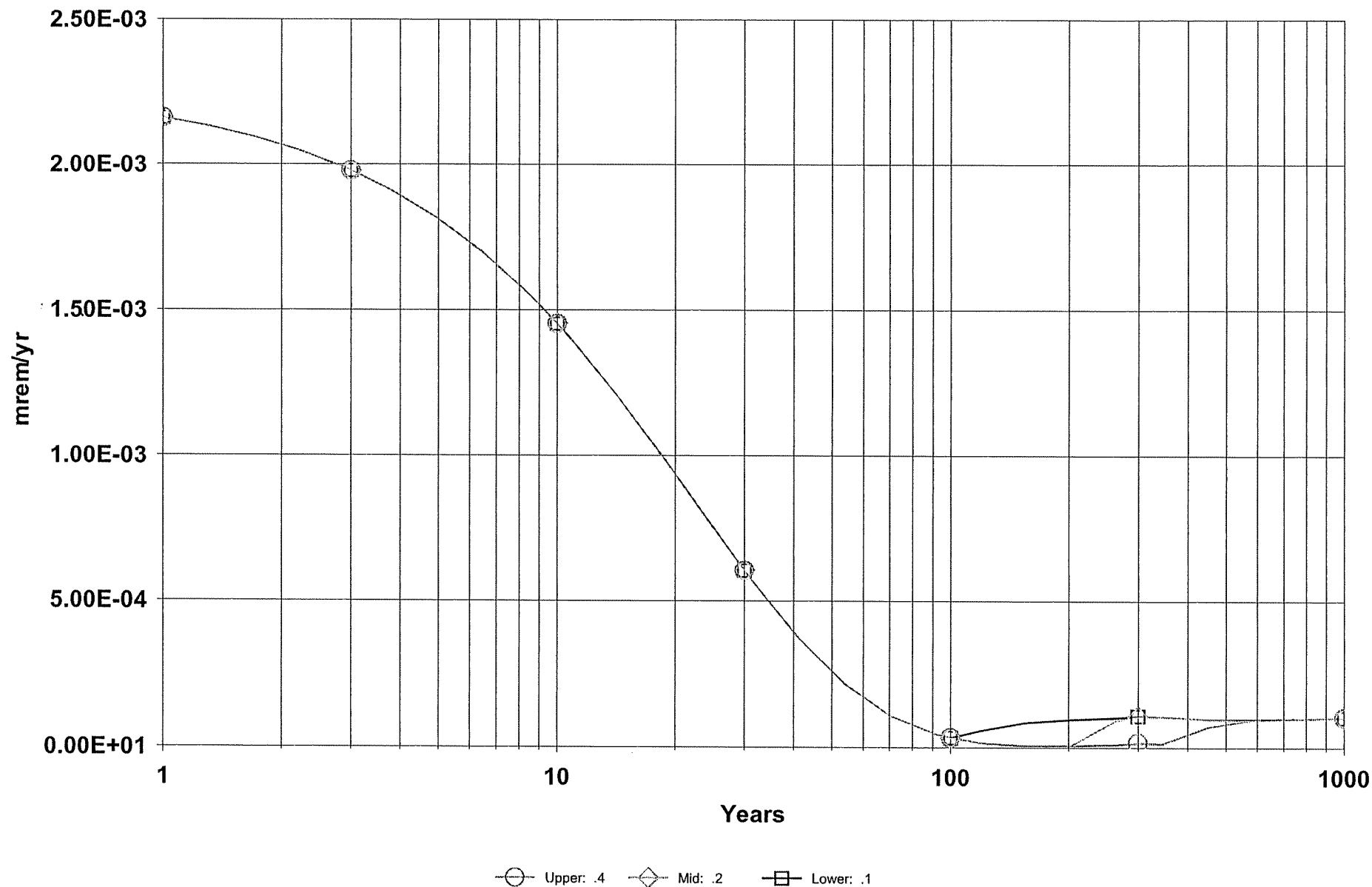
DOSE: All Nuclides Summed, All Pathways Summed With SA on Density of Unsaturated Zone 1



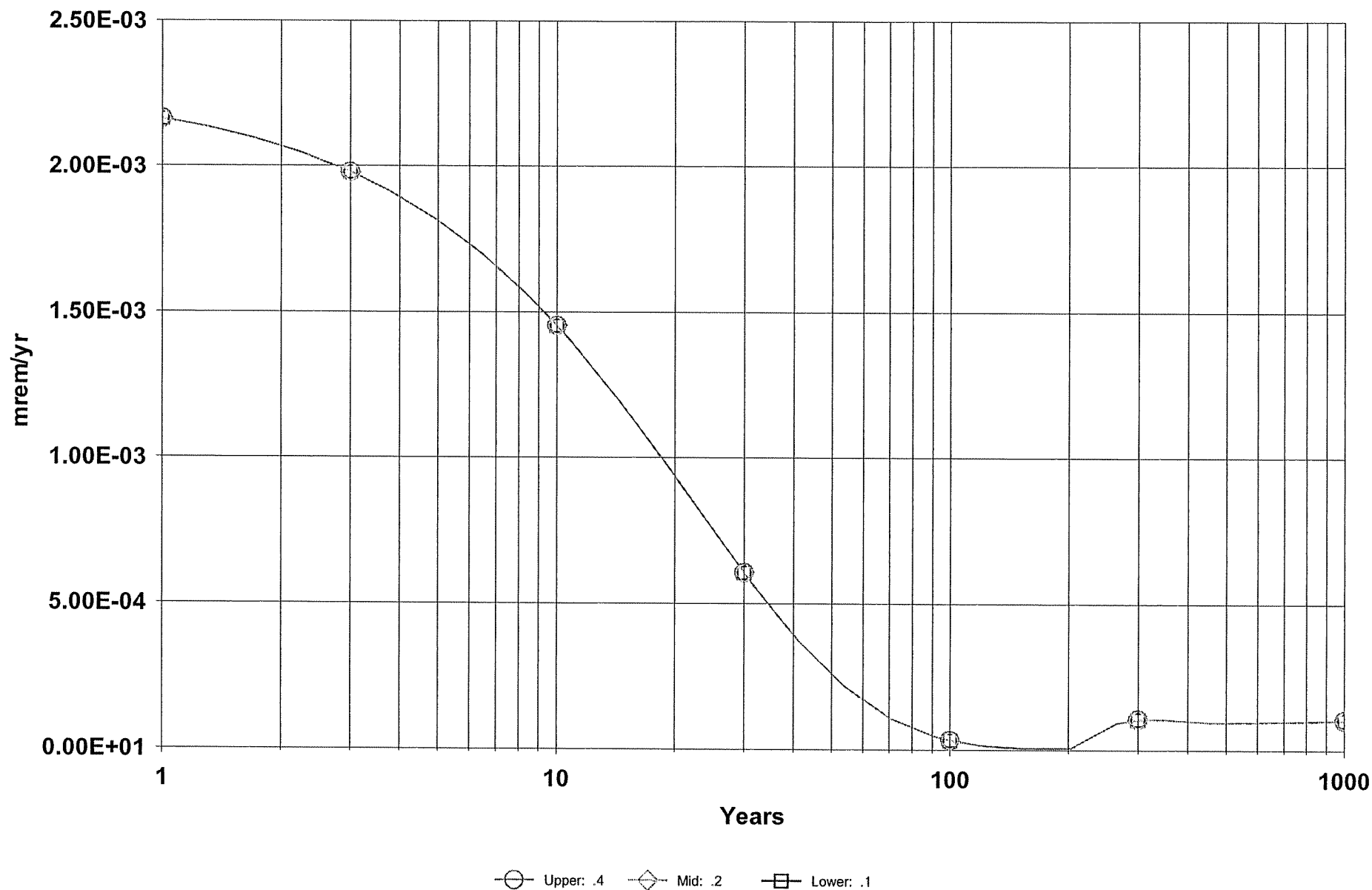
DOSE: All Nuclides Summed, All Pathways Summed With SA on Total Porosity of Unsaturated Zone 1



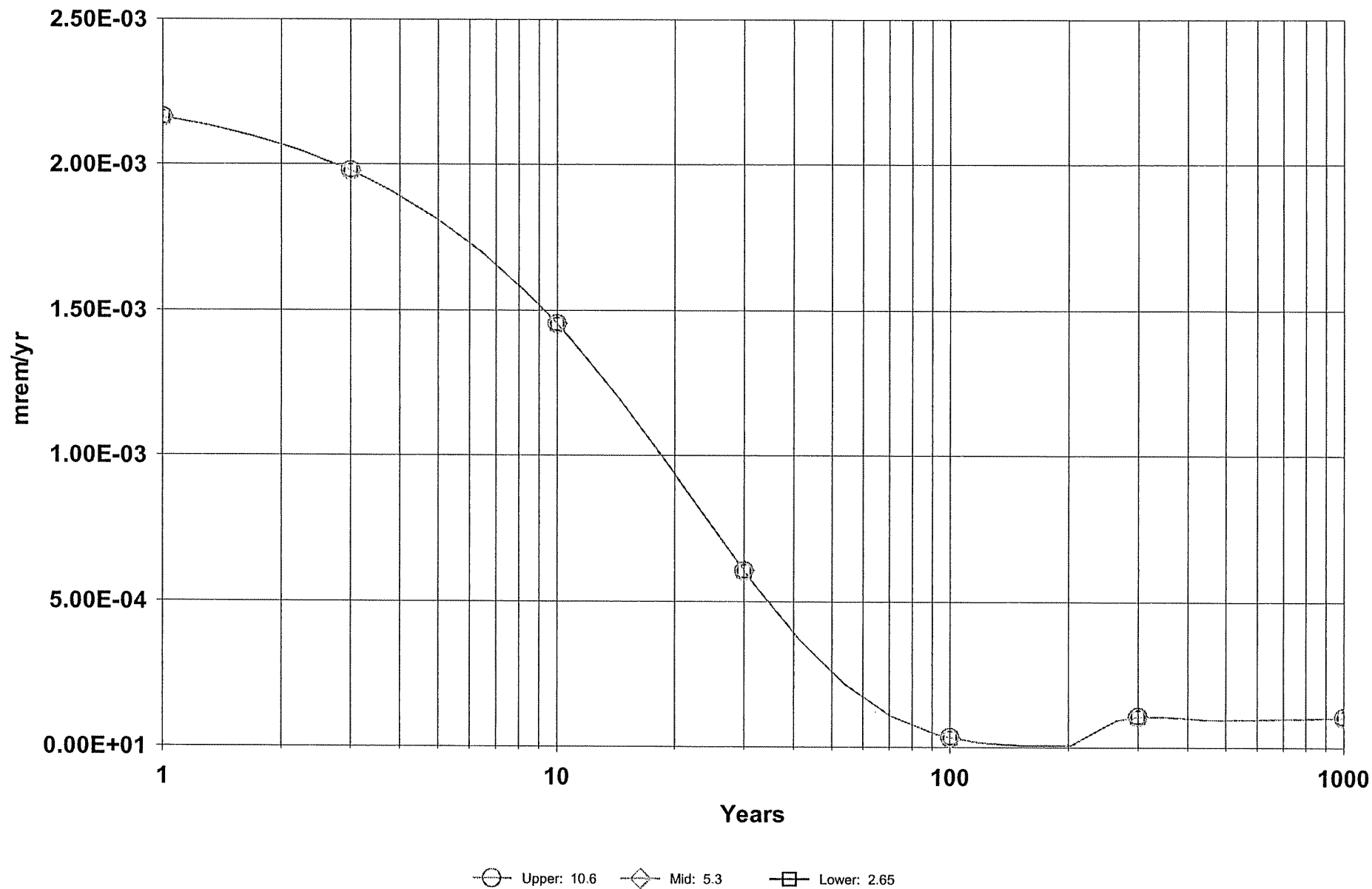
DOSE: All Nuclides Summed, All Pathways Summed With SA on Effective Porosity of Unsaturated Zone 1



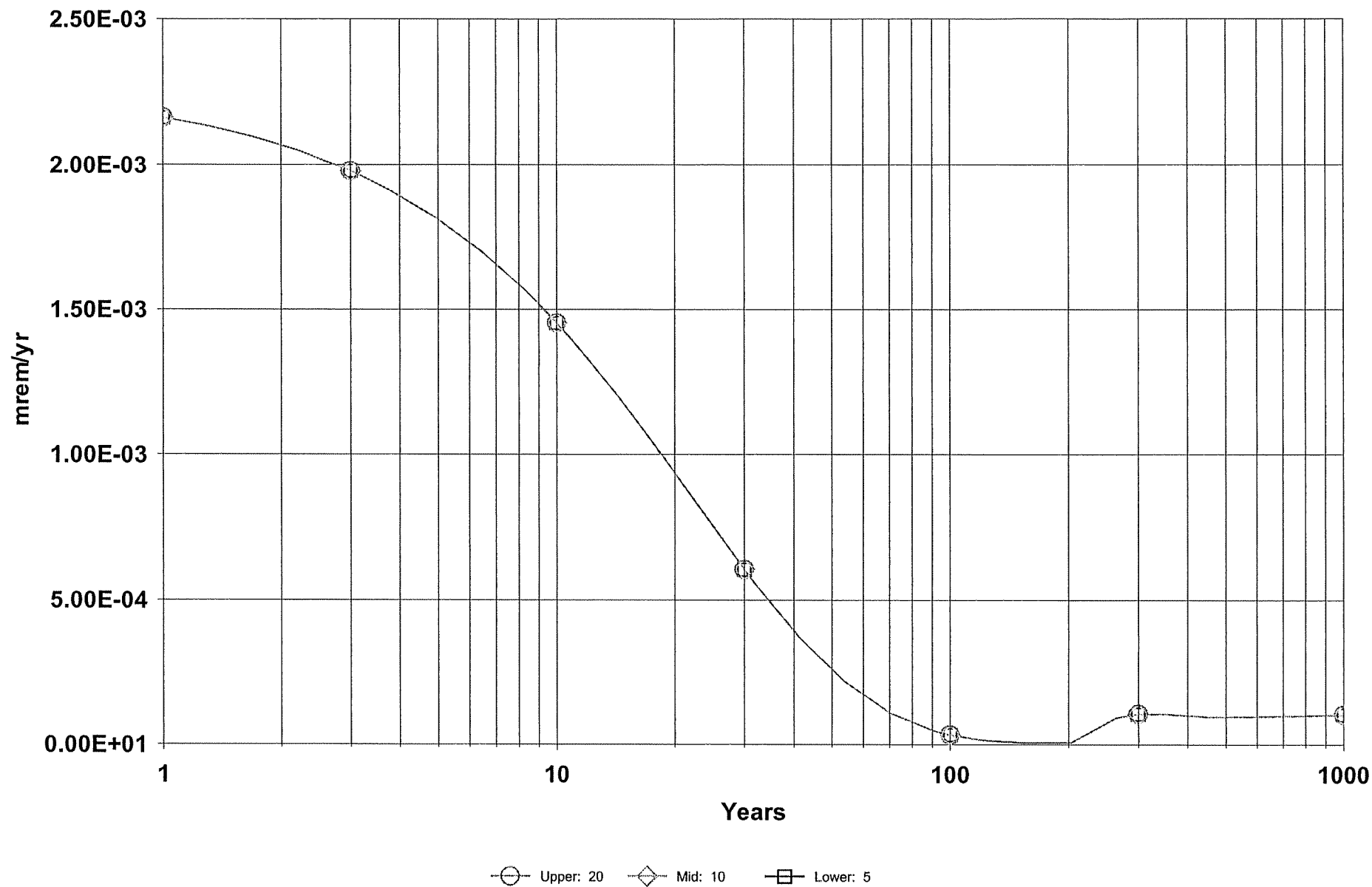
DOSE: All Nuclides Summed, All Pathways Summed With SA on Field Capacity of Unsaturated Zone 1



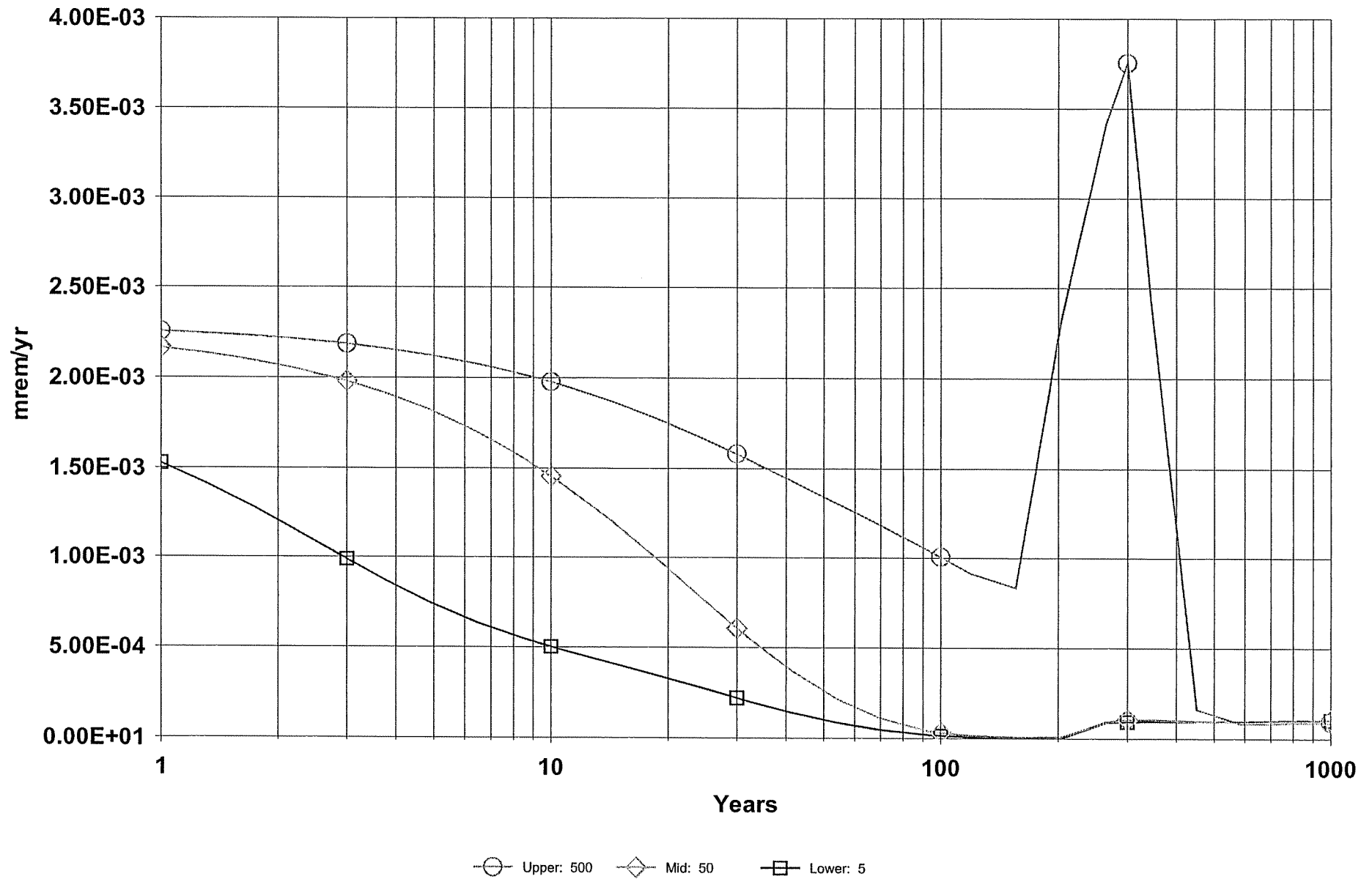
DOSE: All Nuclides Summed, All Pathways Summed With SA on b Parameter of Unsaturated Zone 1



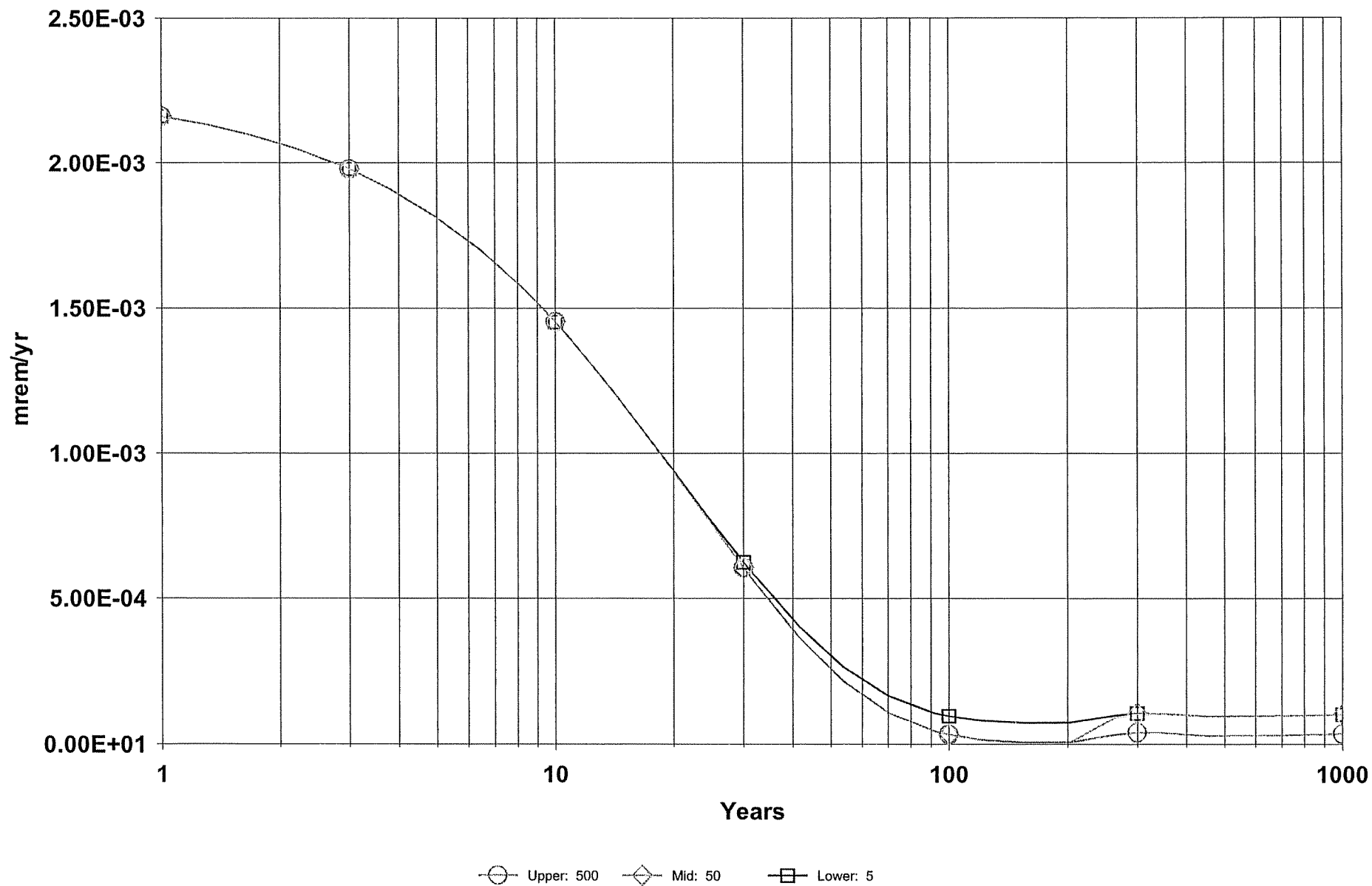
DOSE: All Nuclides Summed, All Pathways Summed With SA on Hydraulic Conductivity of Unsaturated Zone 1



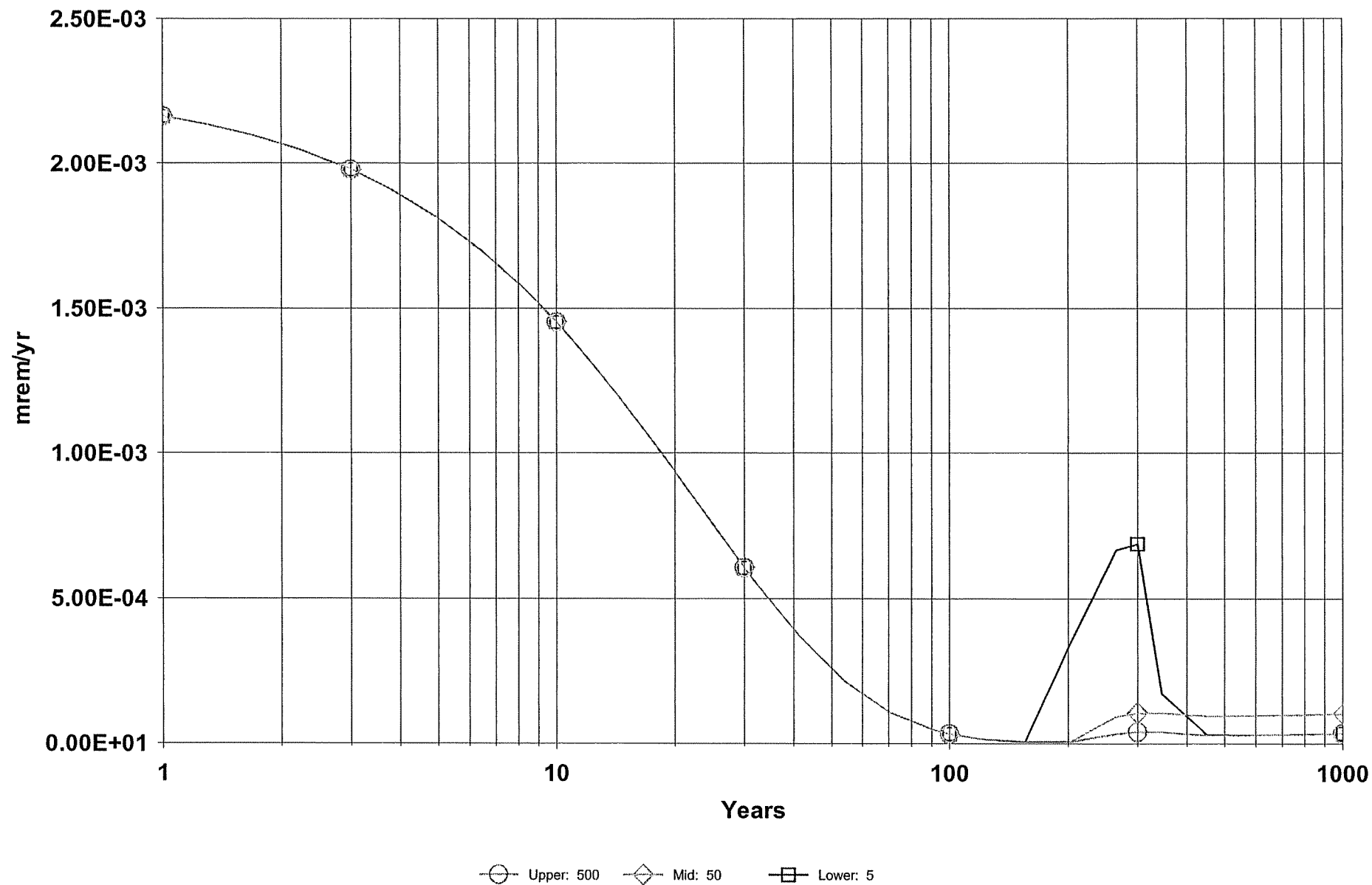
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-234 Contaminated Zone Distribution Coef.



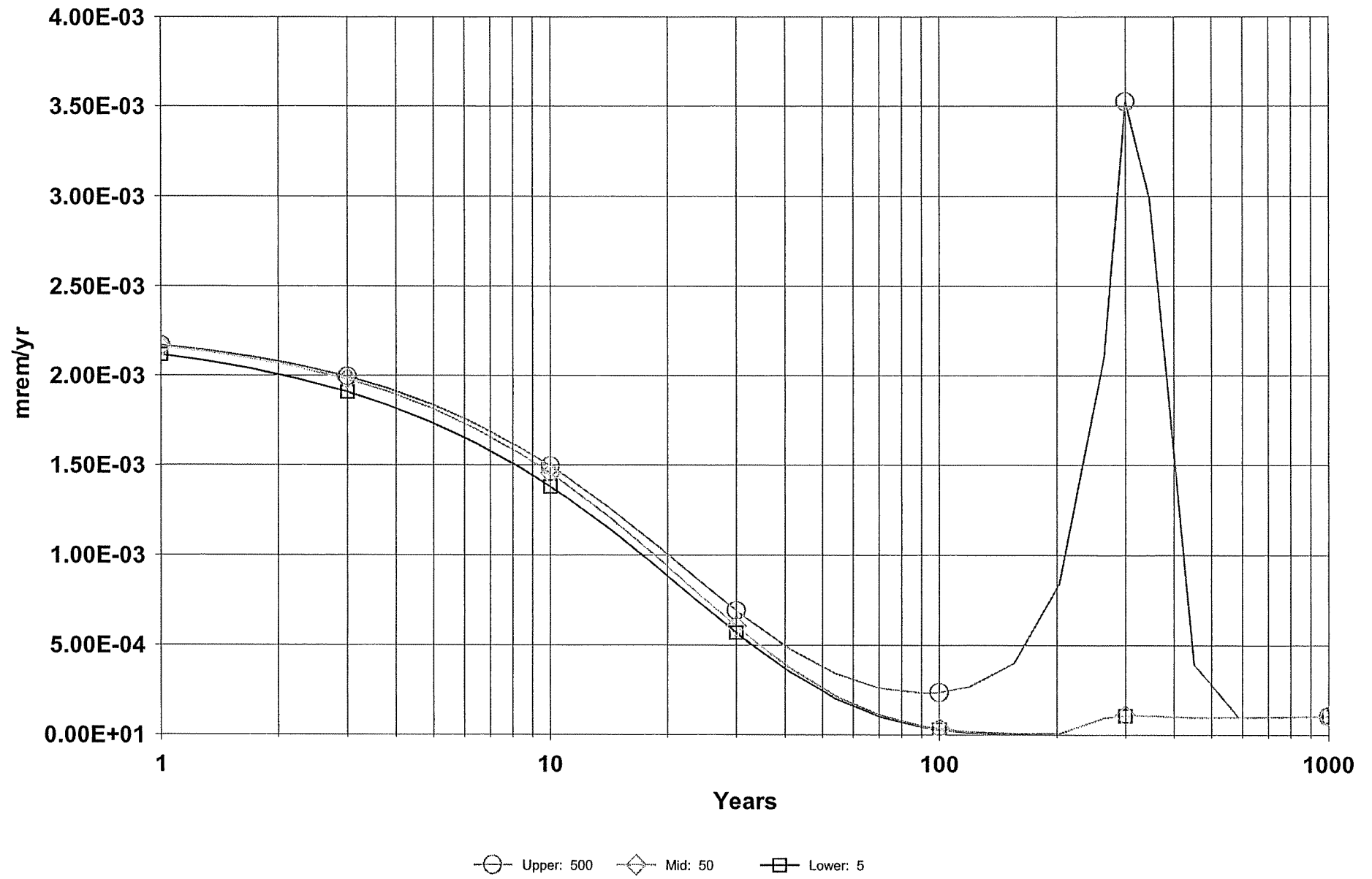
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-234 Unsaturated Zone Distribution Coef.



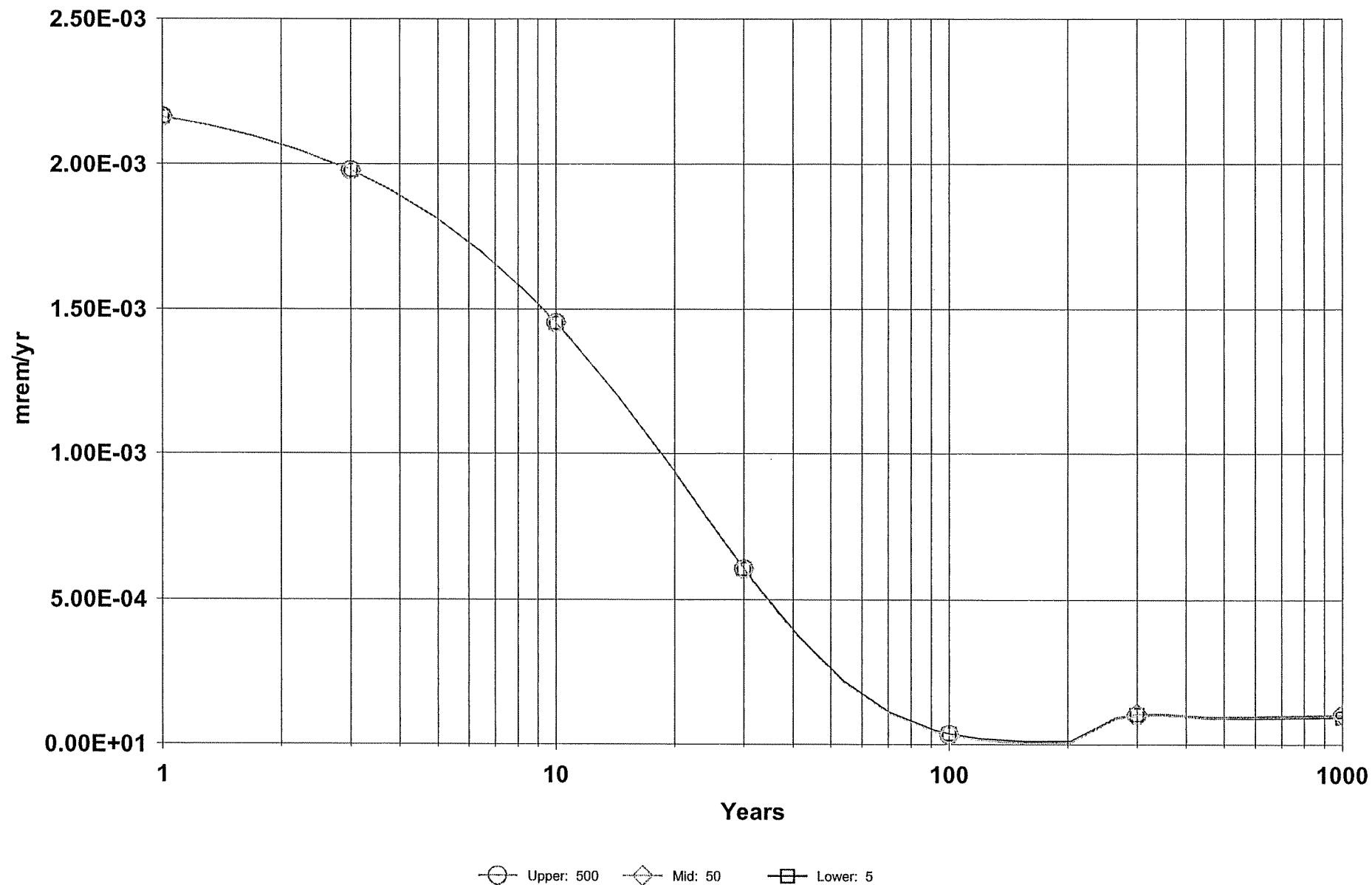
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-234 Saturated Zone Distribution Coef.



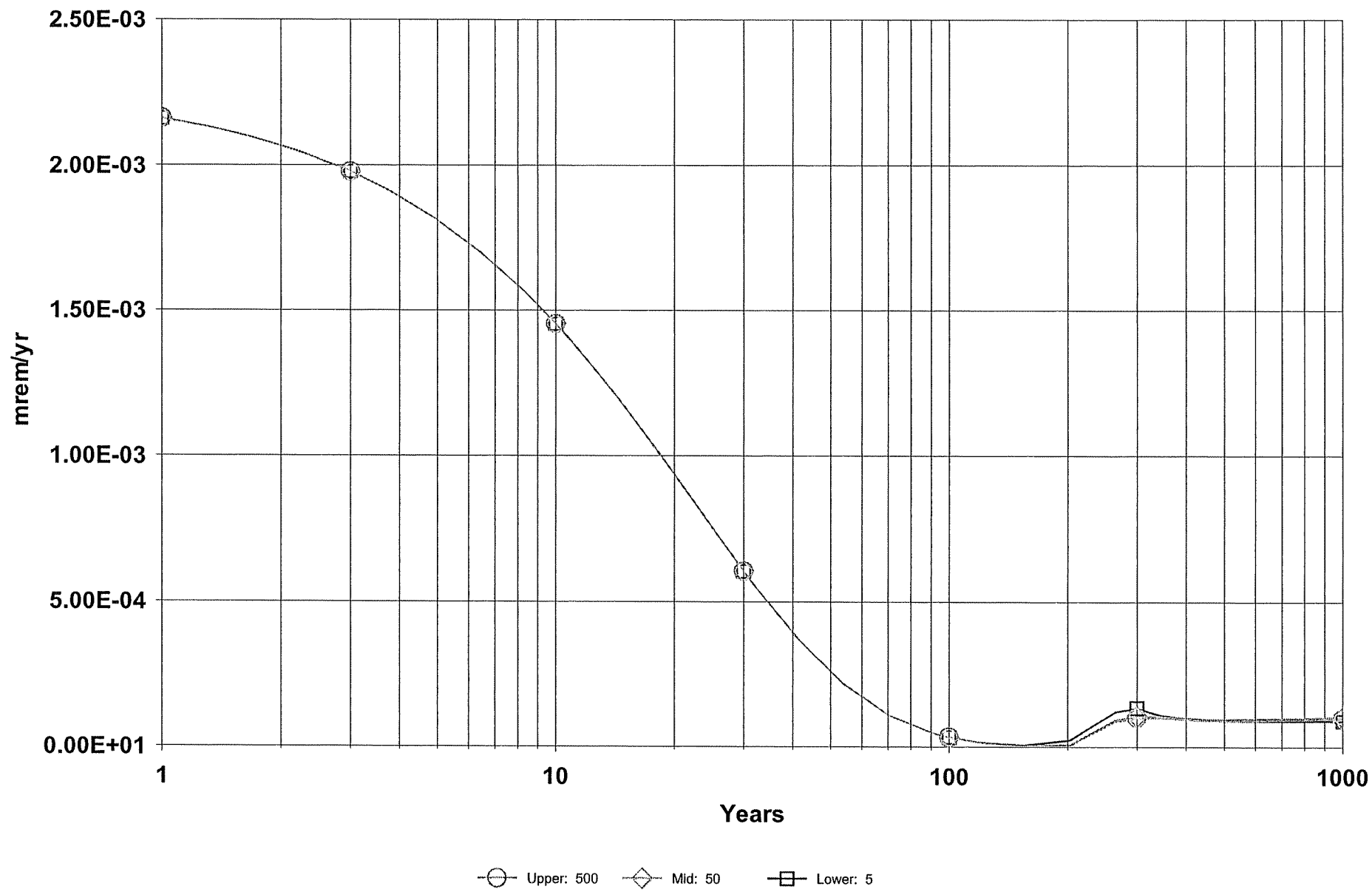
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-235 Contaminated Zone Distribution Coef.



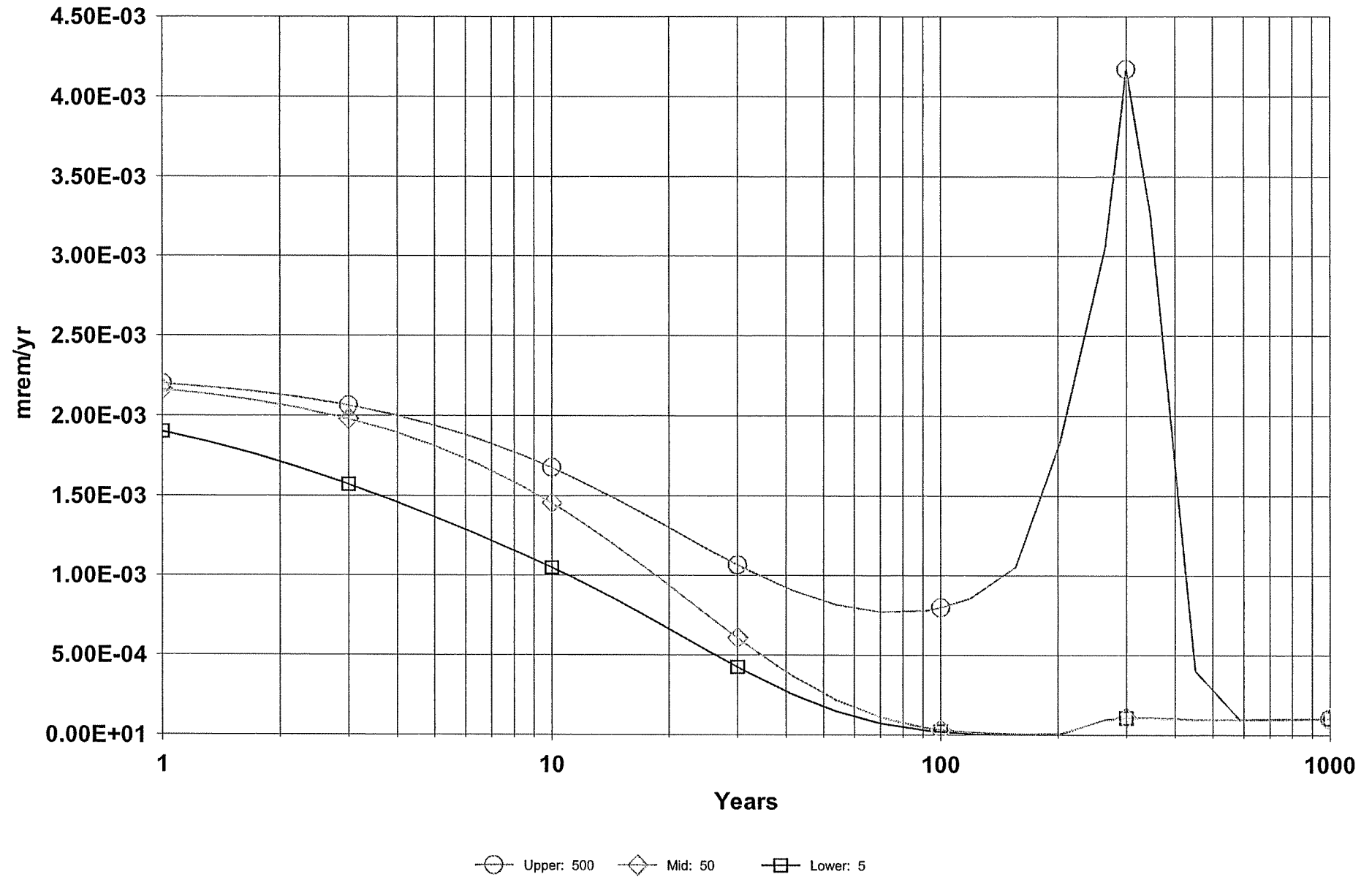
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-235 Unsaturated Zone Distribution Coef.



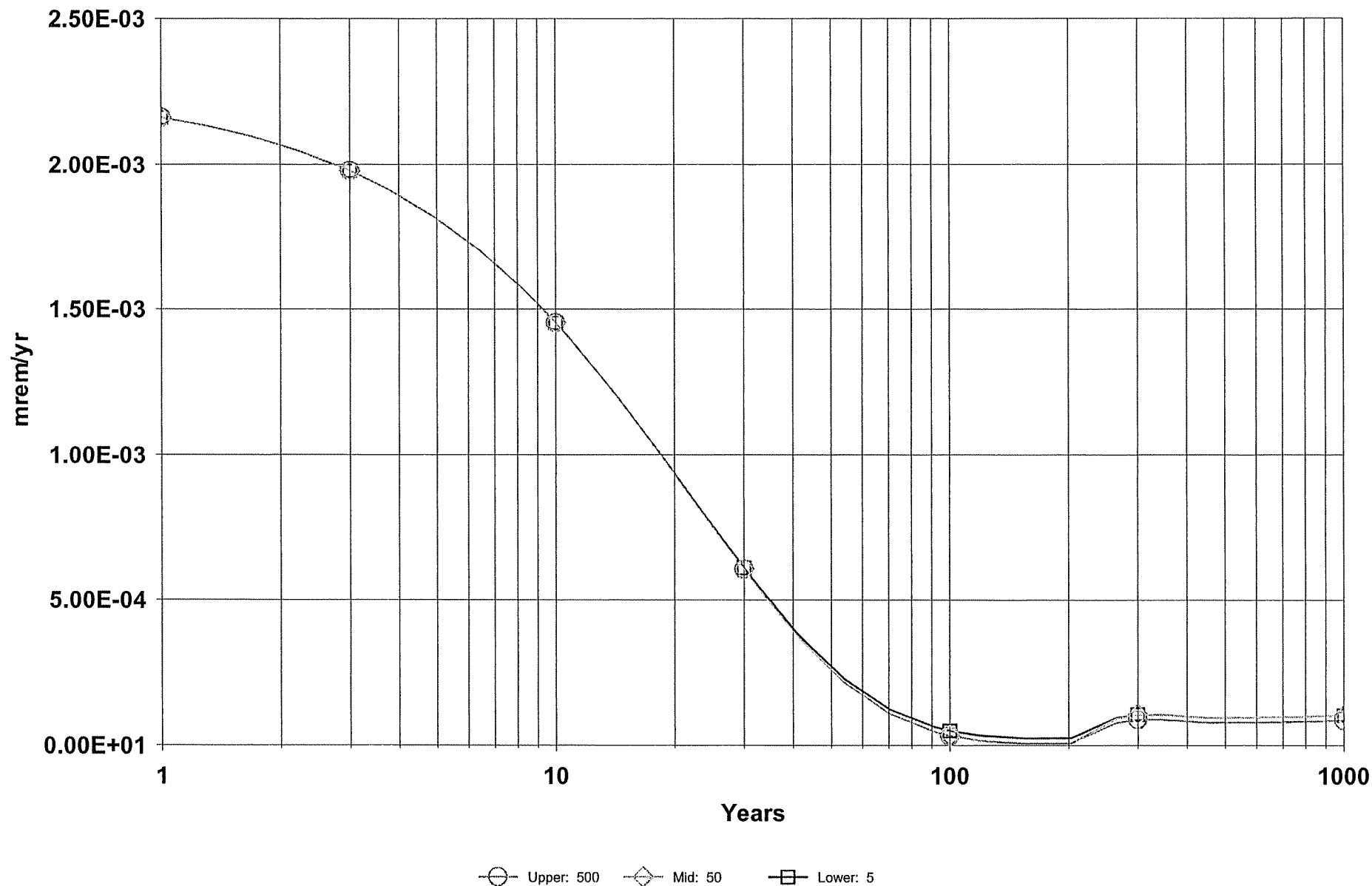
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-235 Saturated Zone Distribution Coef.



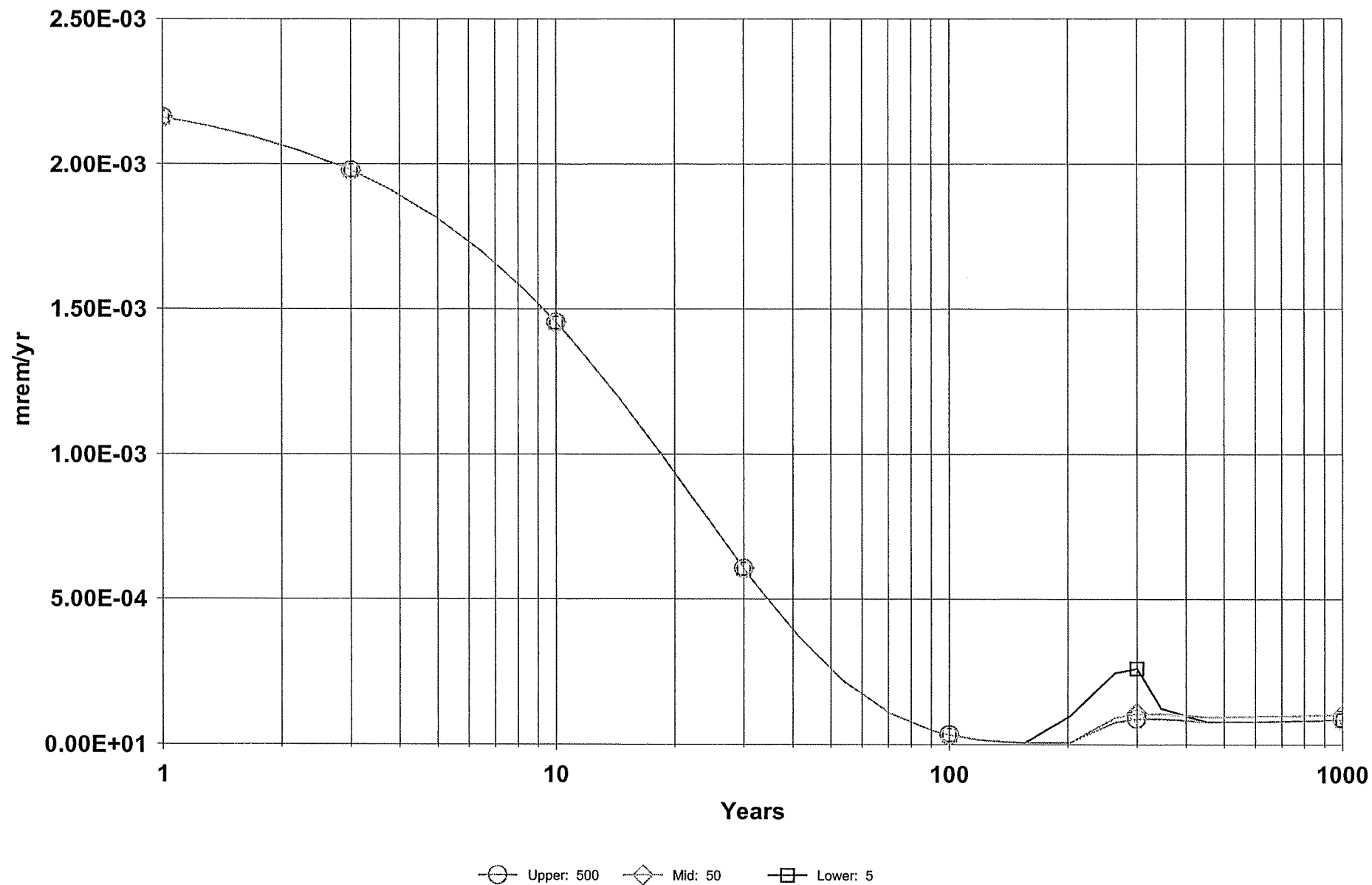
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-238 Contaminated Zone Distribution Coef.



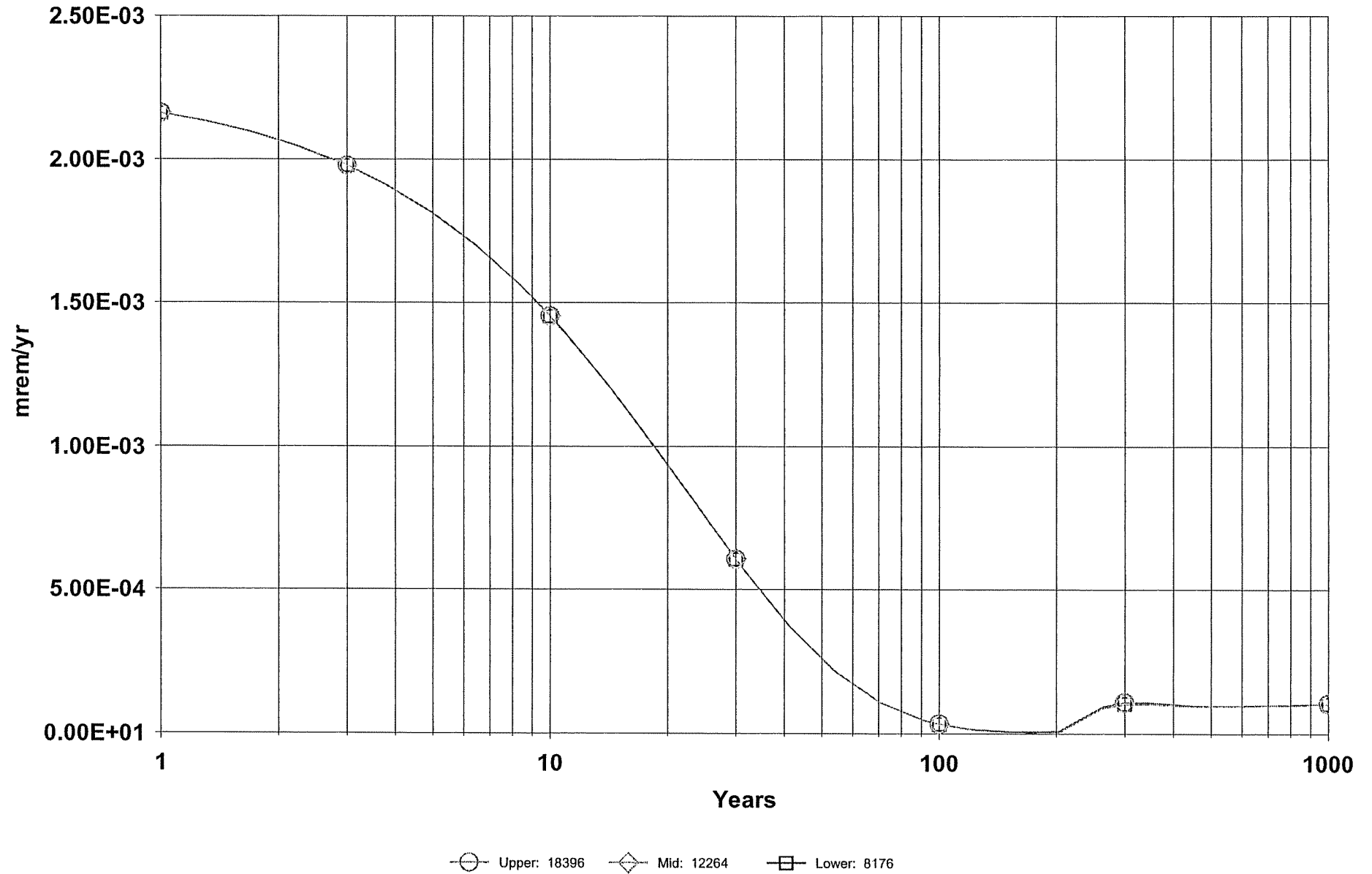
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-238 Unsaturated Zone Distribution Coef.



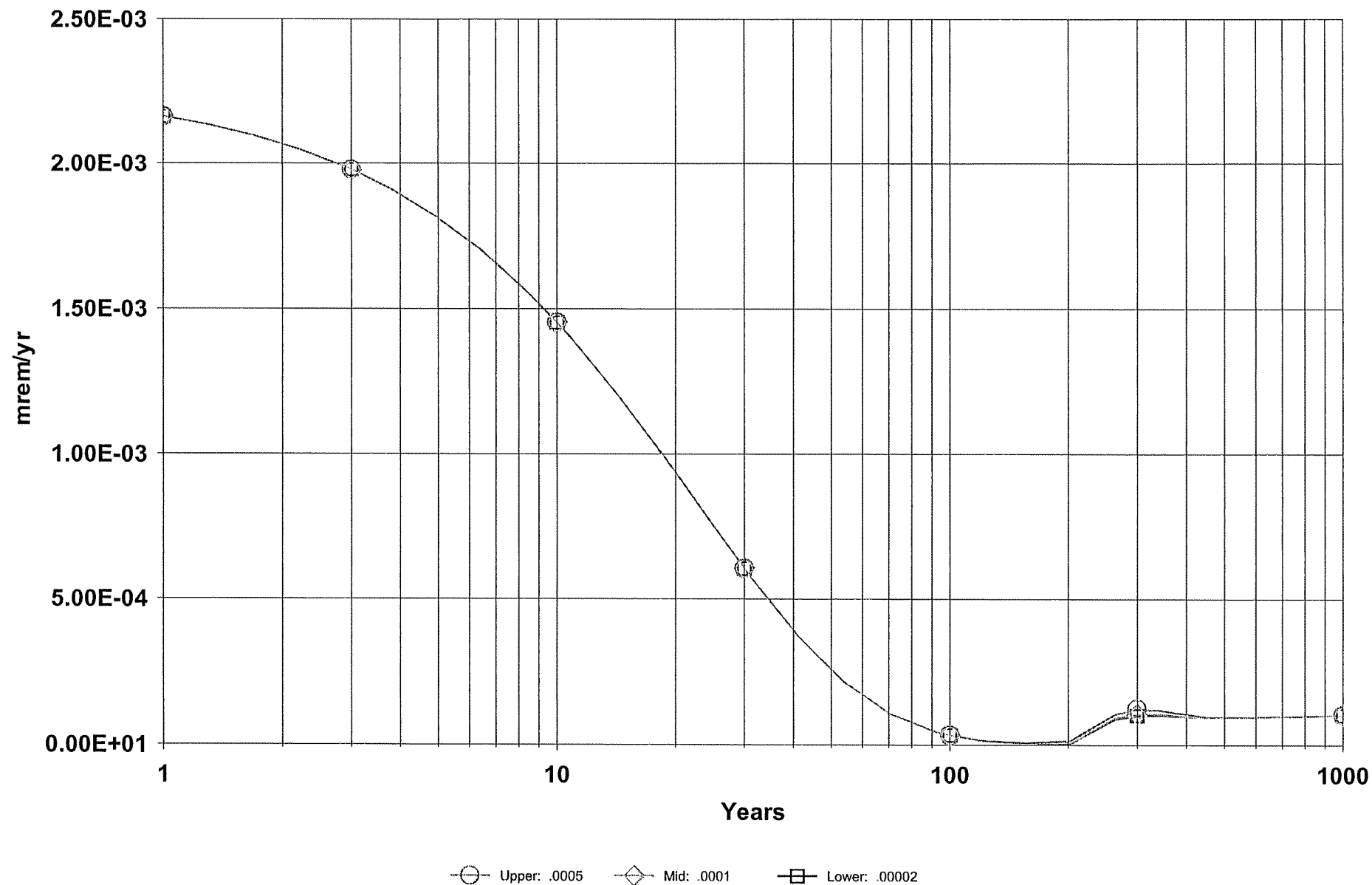
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-238 Saturated Zone Distribution Coef.



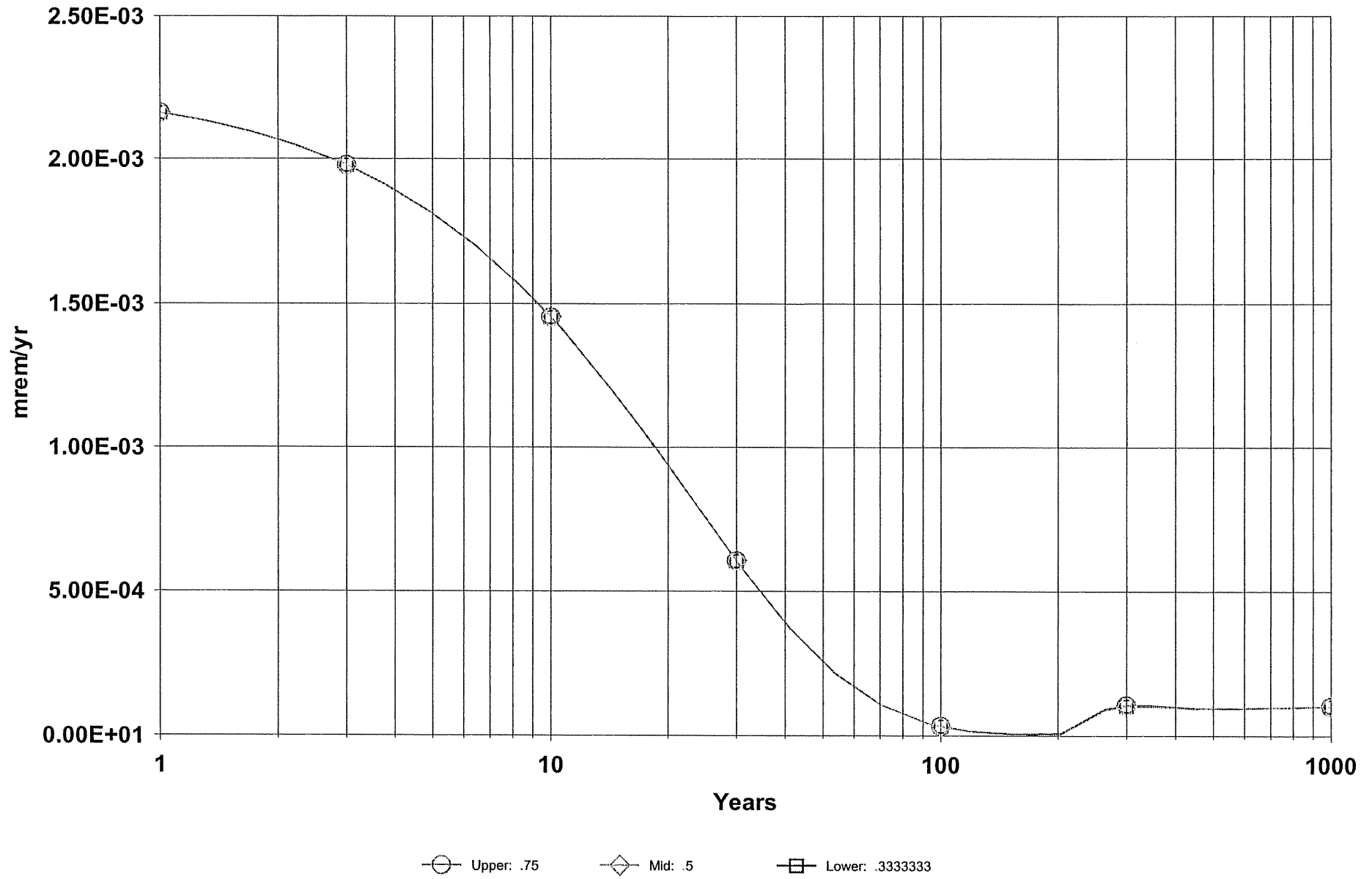
DOSE: All Nuclides Summed, All Pathways Summed With SA on Inhalation rate



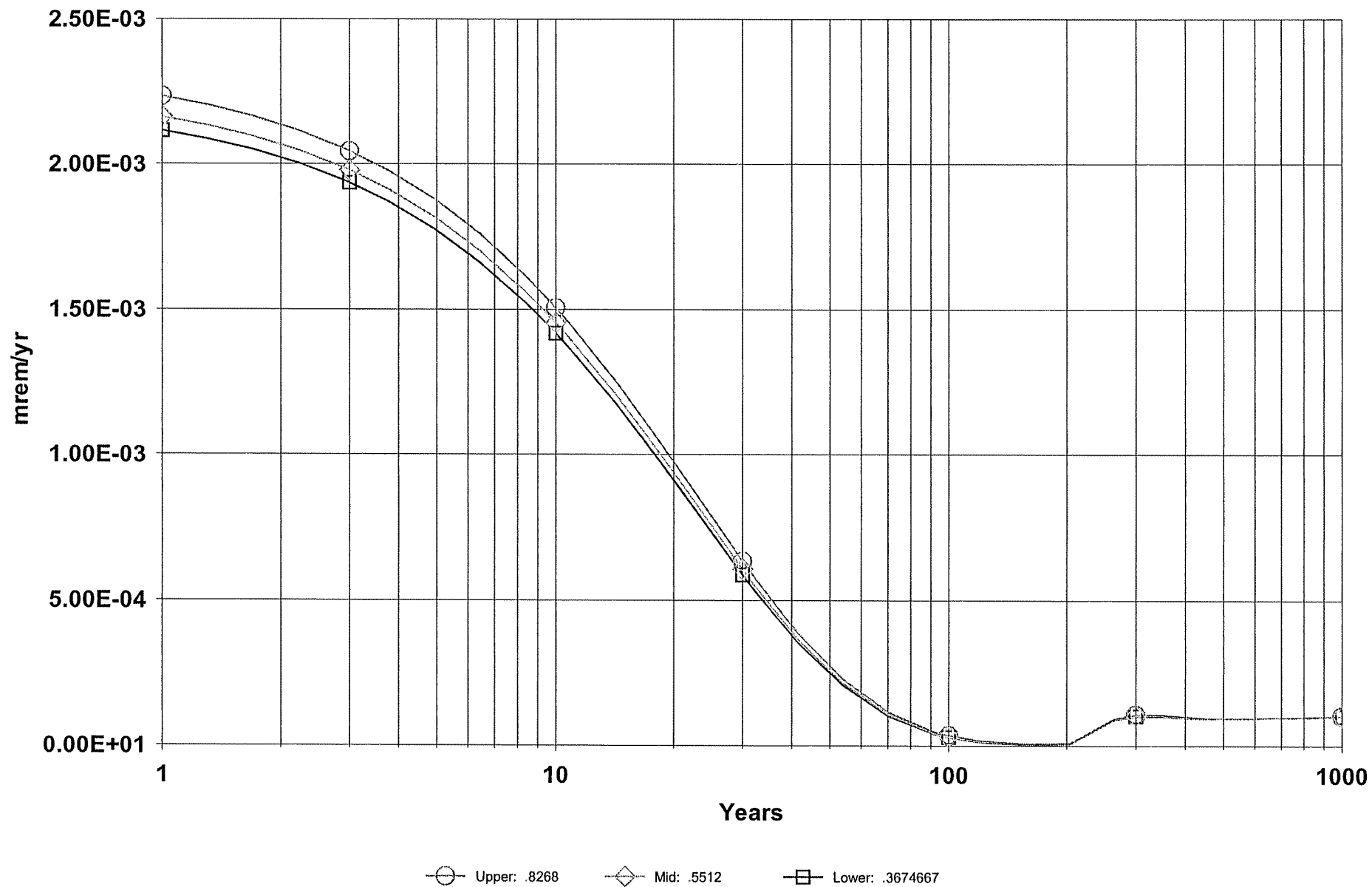
DOSE: All Nuclides Summed, All Pathways Summed With SA on Mass loading for inhalation



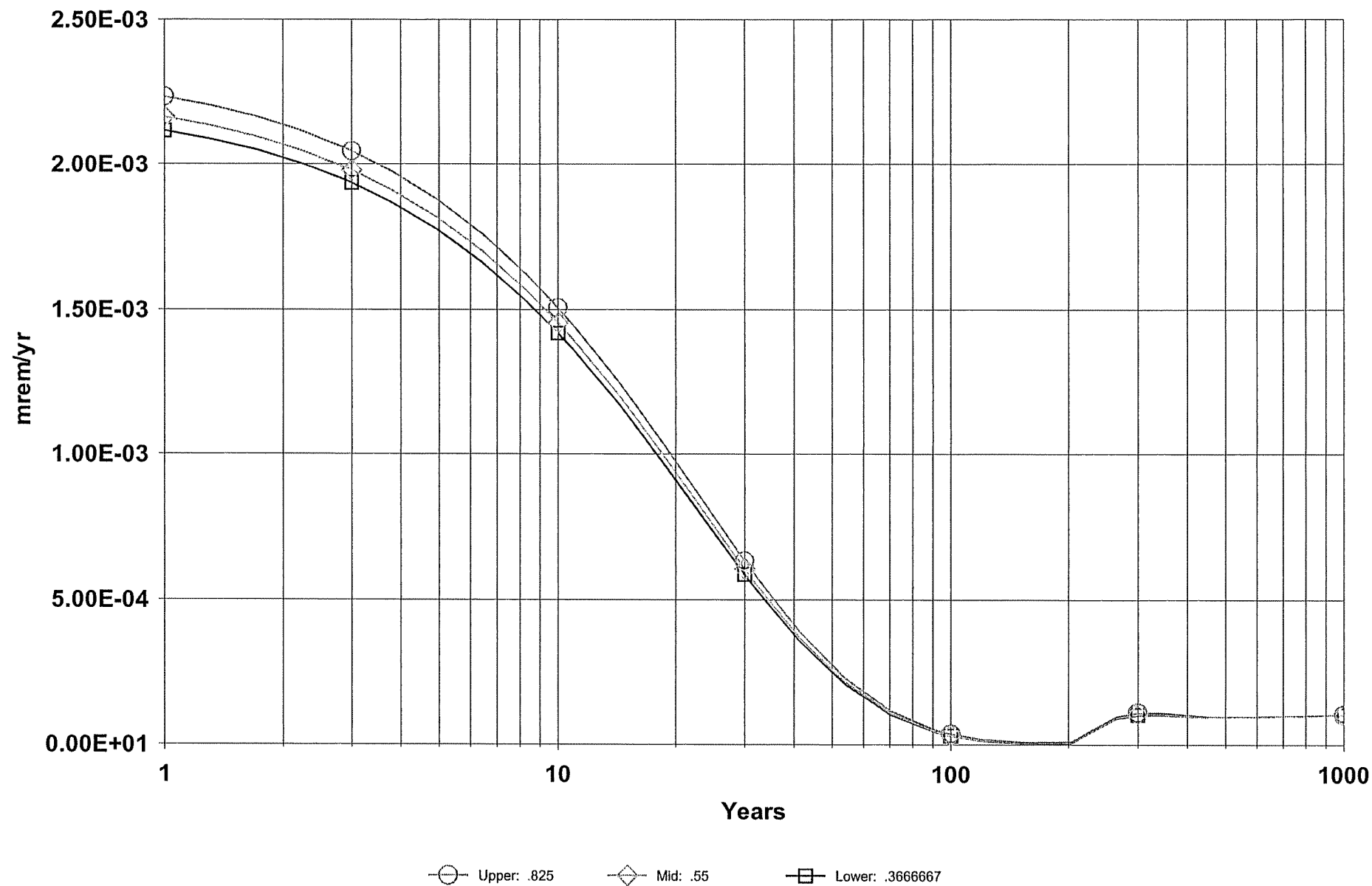
DOSE: All Nuclides Summed, All Pathways Summed With SA on Inhalation Shielding factor



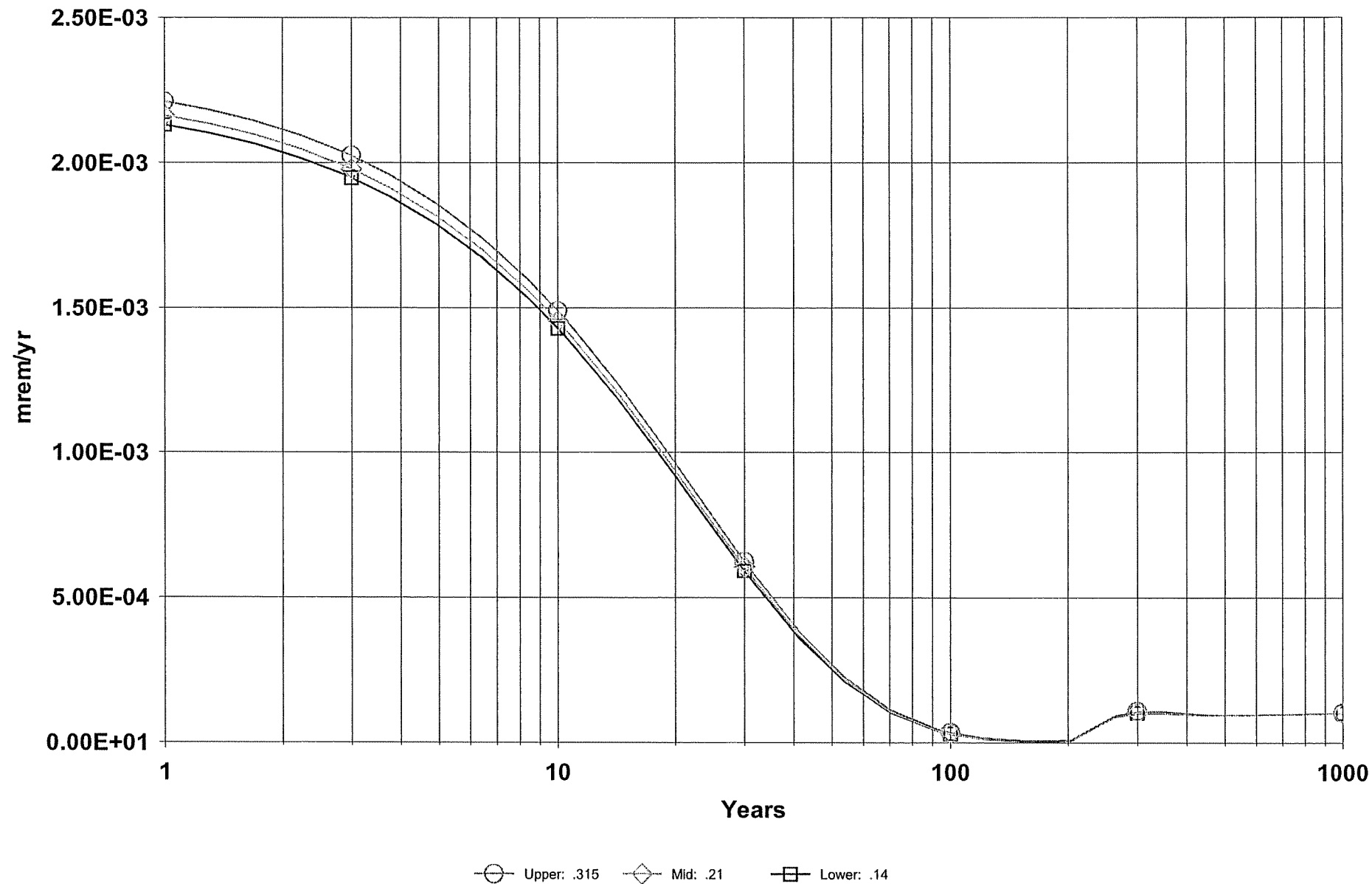
DOSE: All Nuclides Summed, All Pathways Summed With SA on External Gamma Shielding factor



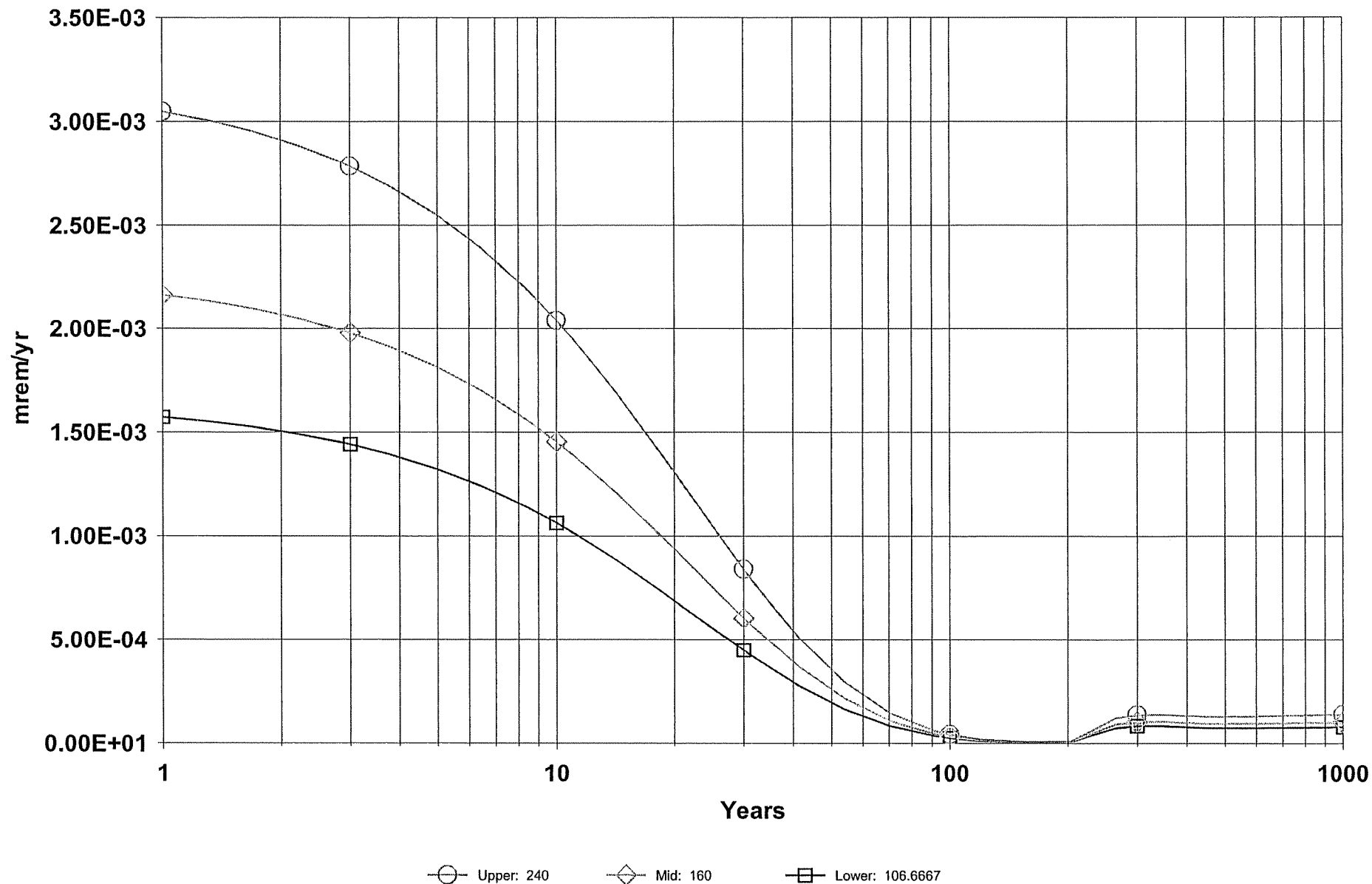
DOSE: All Nuclides Summed, All Pathways Summed With SA on Indoor Time fraction



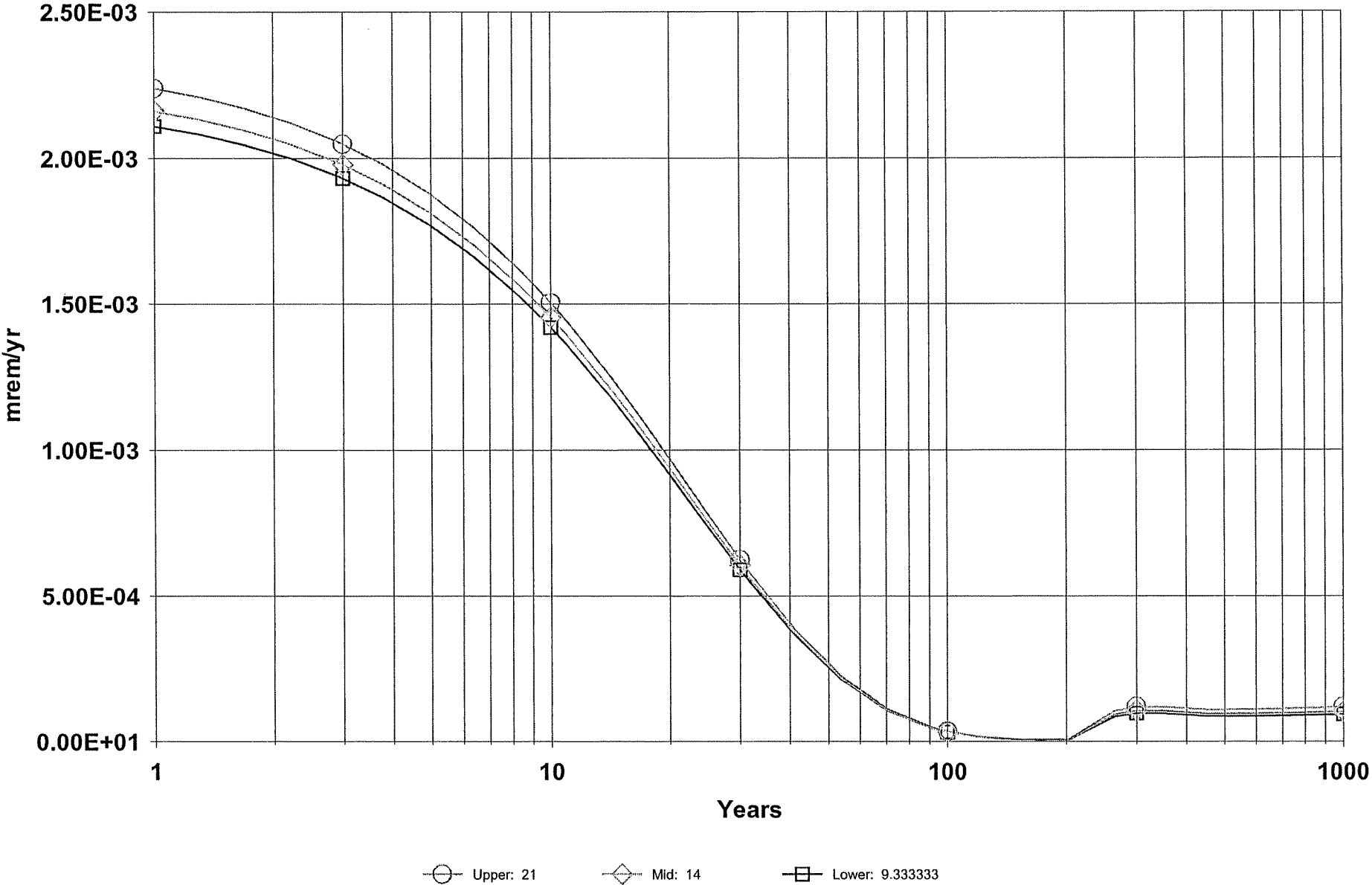
DOSE: All Nuclides Summed, All Pathways Summed With SA on Outdoor Time fraction



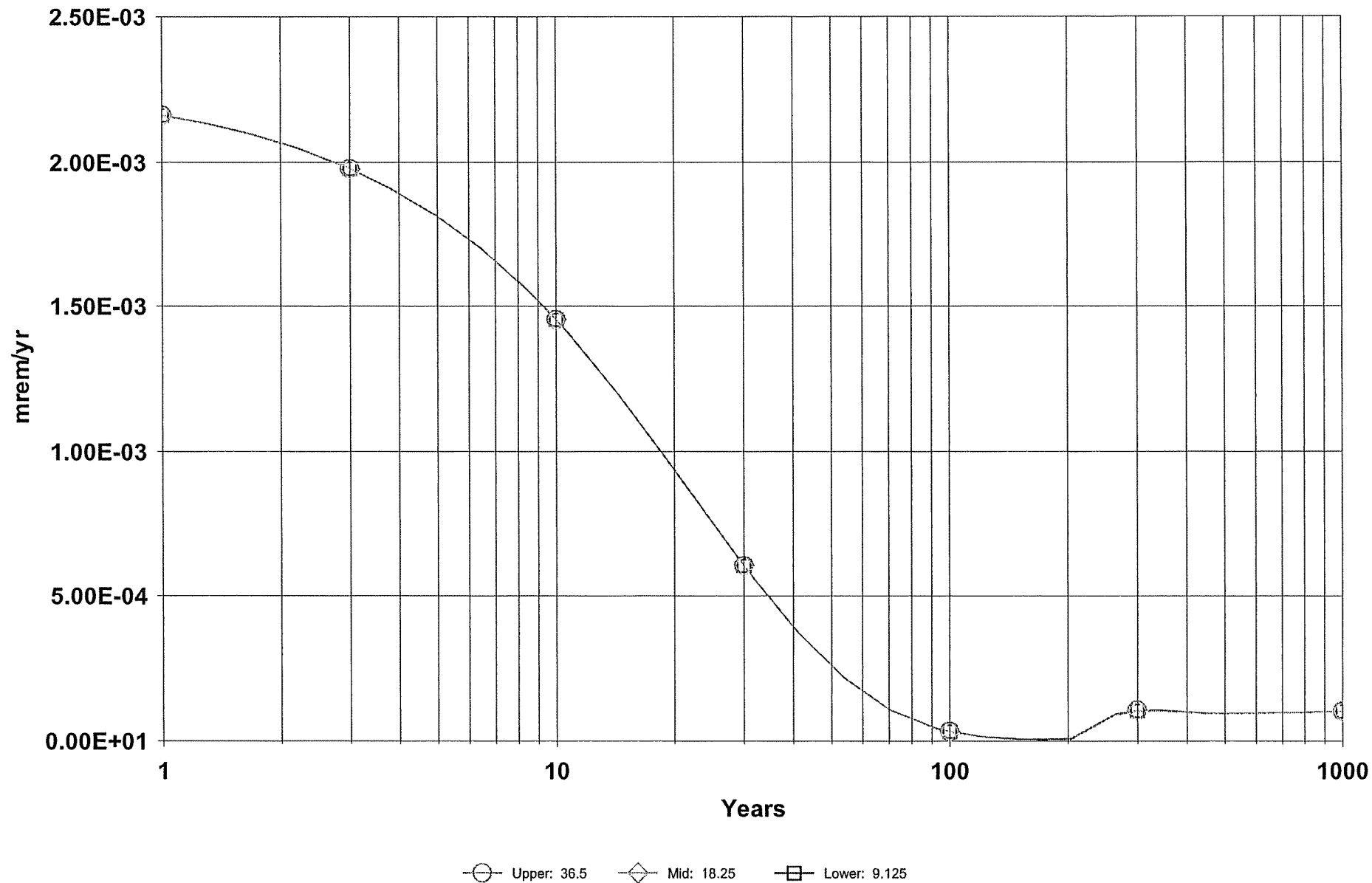
DOSE: All Nuclides Summed, All Pathways Summed With SA on Fruit, vegetable, and grain consumption



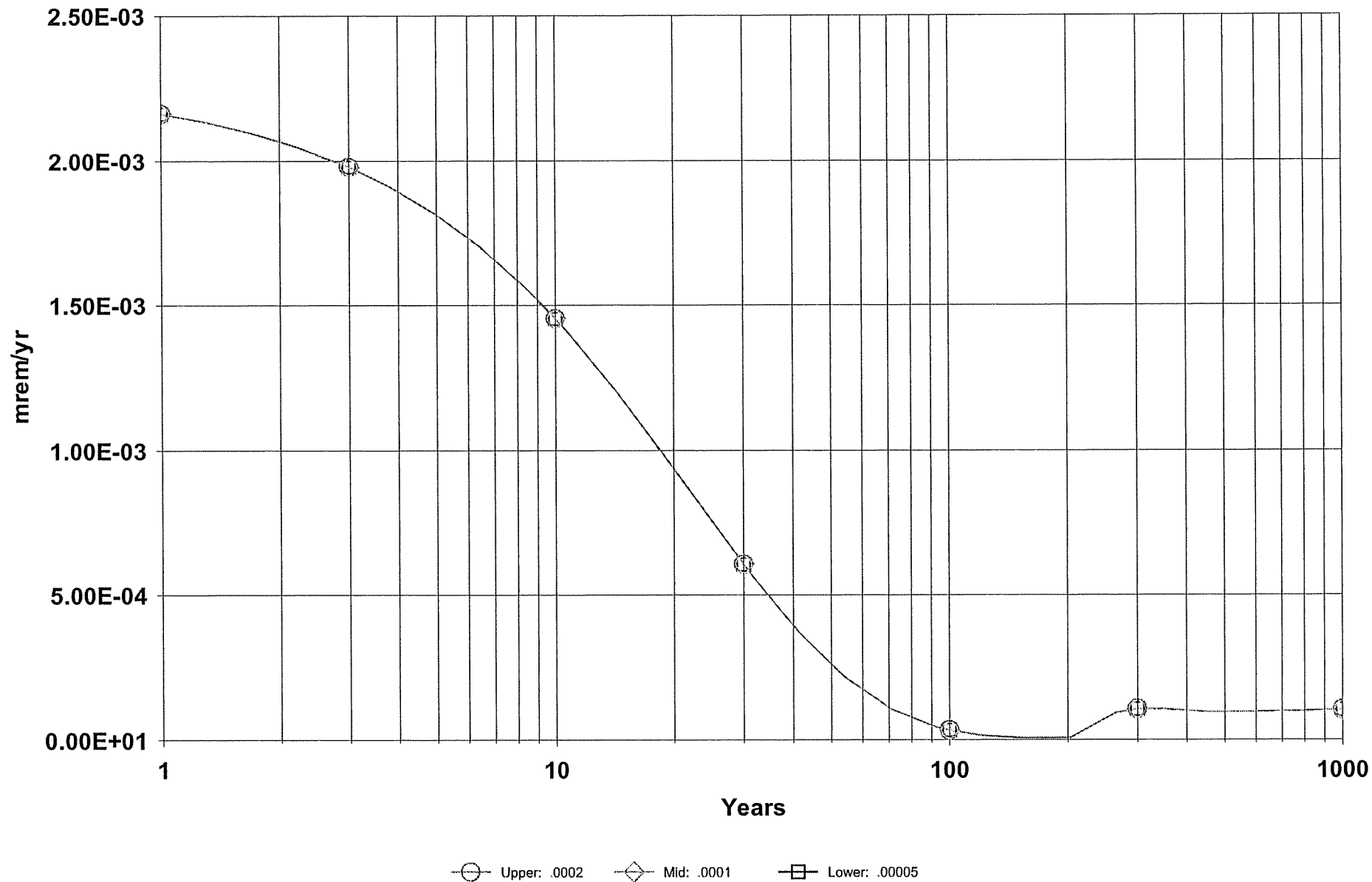
DOSE: All Nuclides Summed, All Pathways Summed With SA on Leafy vegetable consumption



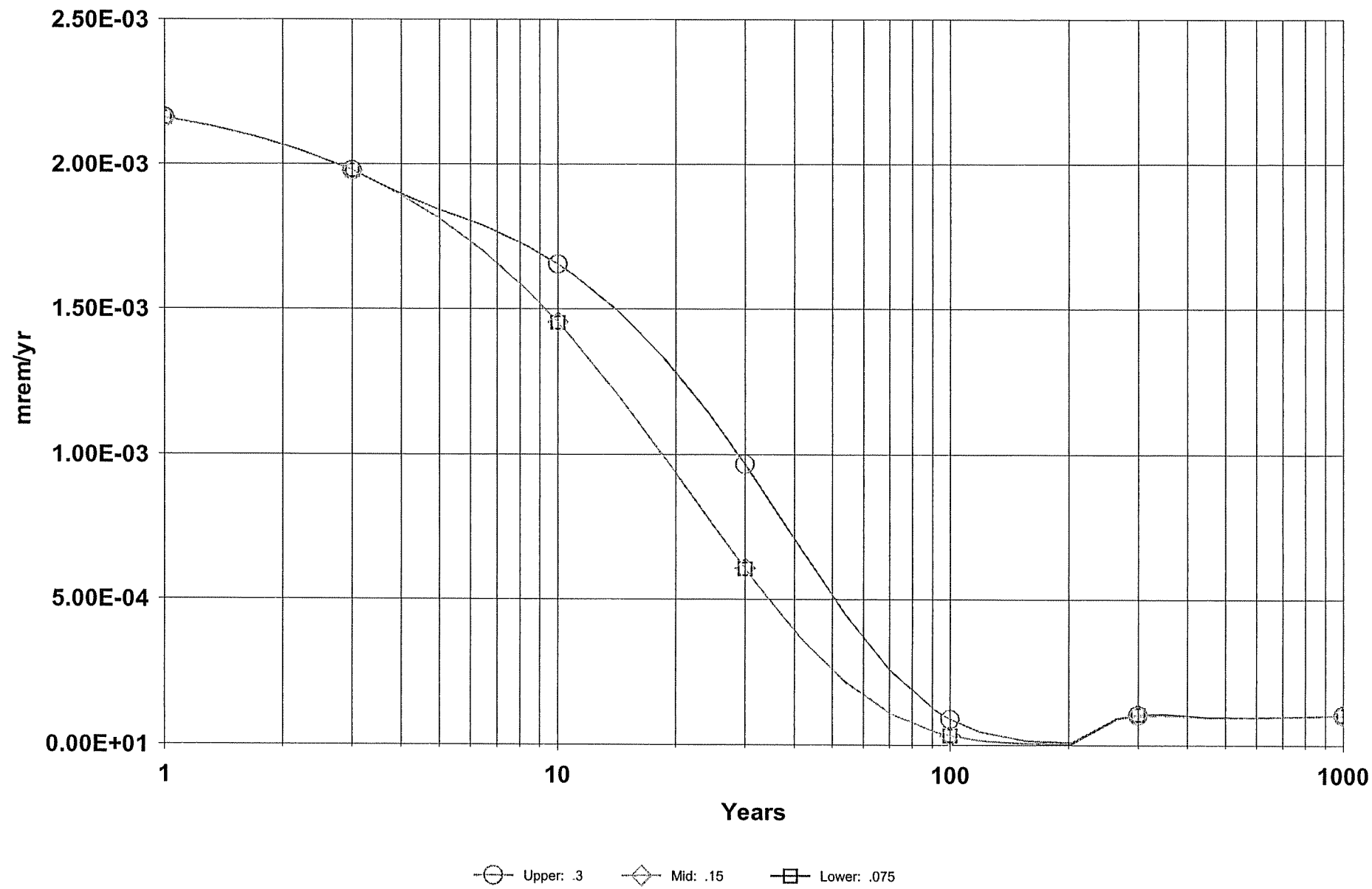
DOSE: All Nuclides Summed, All Pathways Summed With SA on Soil ingestion



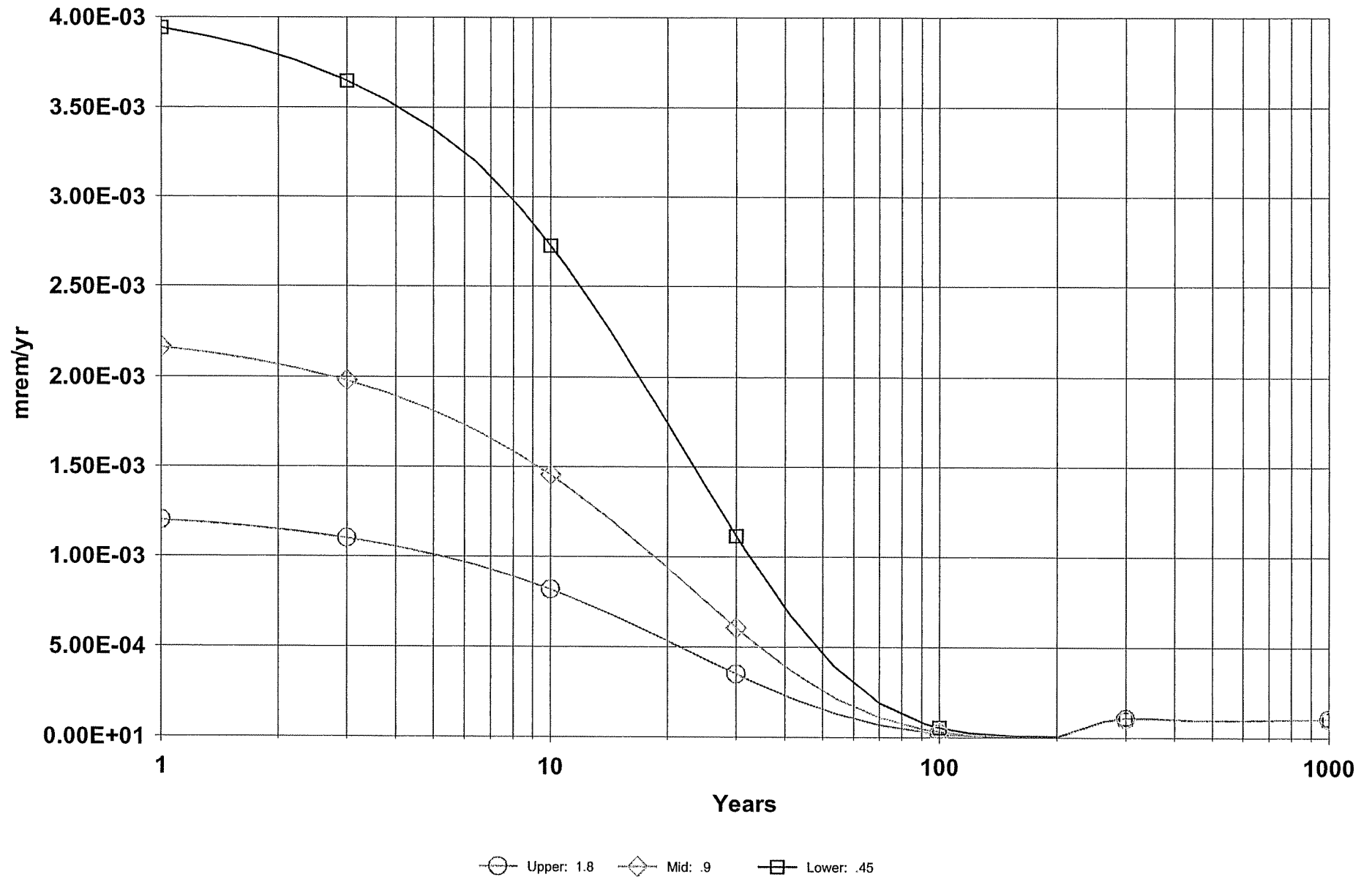
DOSE: All Nuclides Summed, All Pathways Summed With SA on Mass loading for foliar deposition



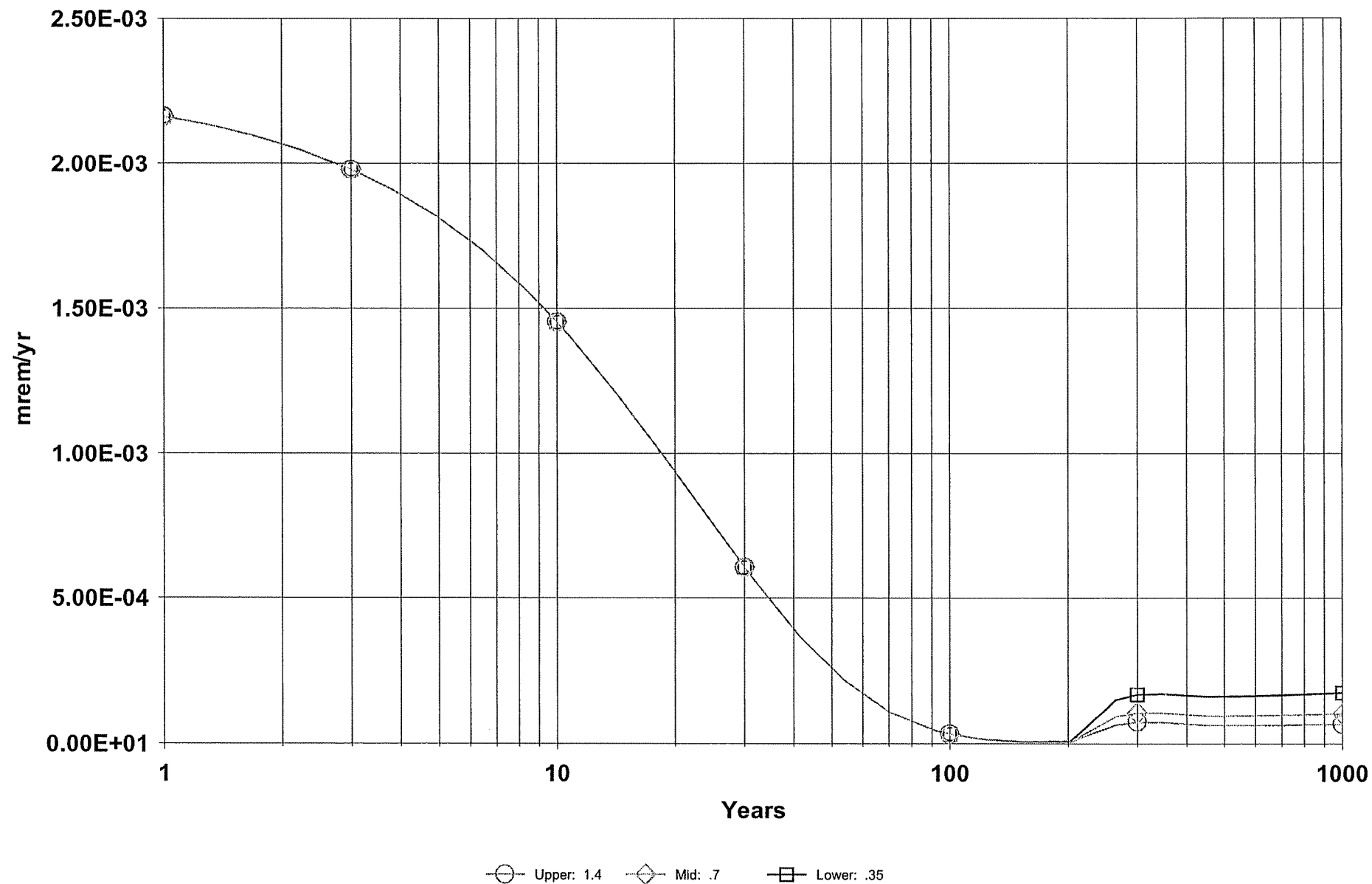
DOSE: All Nuclides Summed, All Pathways Summed With SA on Depth of soil mixing layer



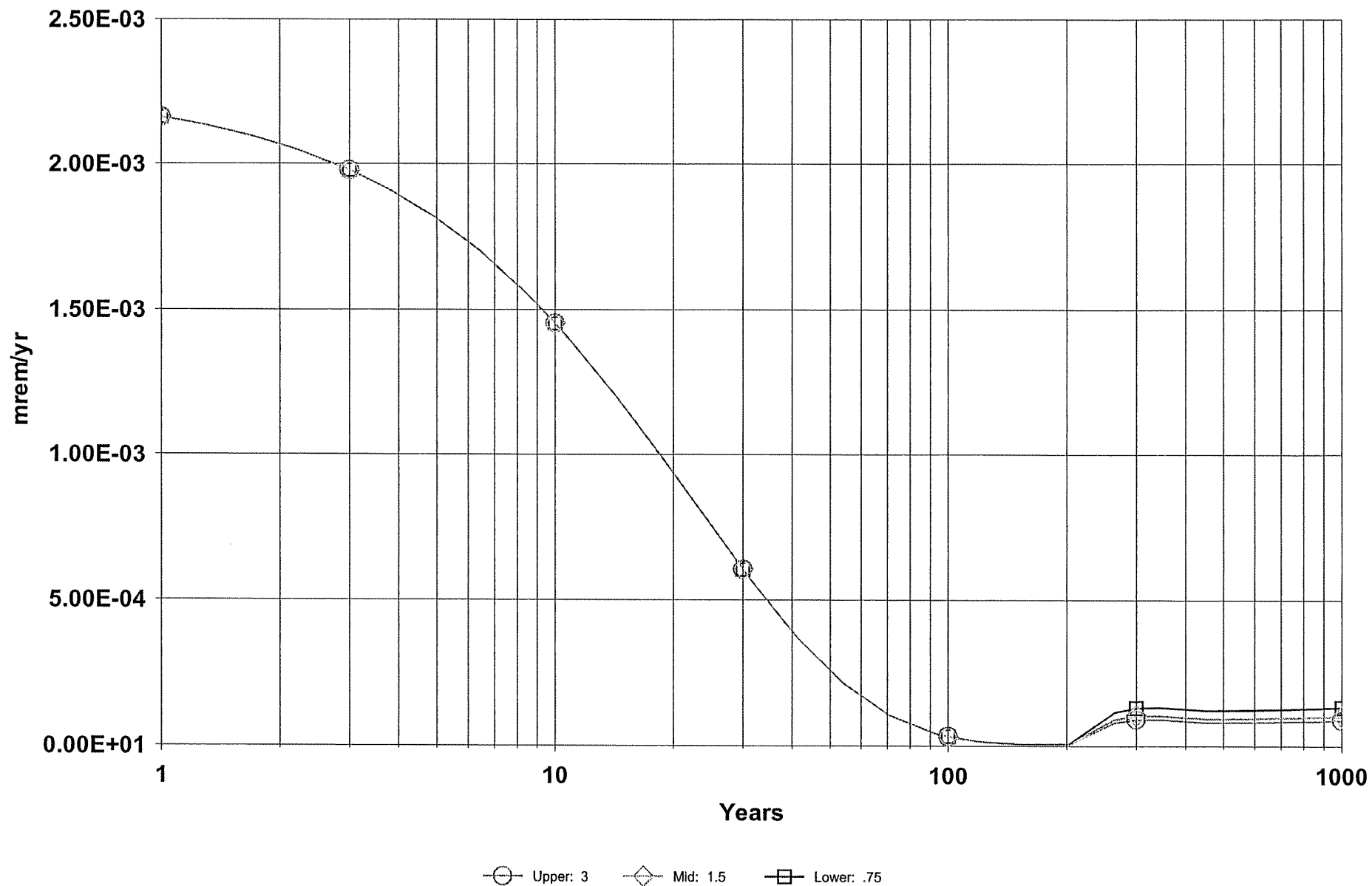
DOSE: All Nuclides Summed, All Pathways Summed With SA on Depth of roots



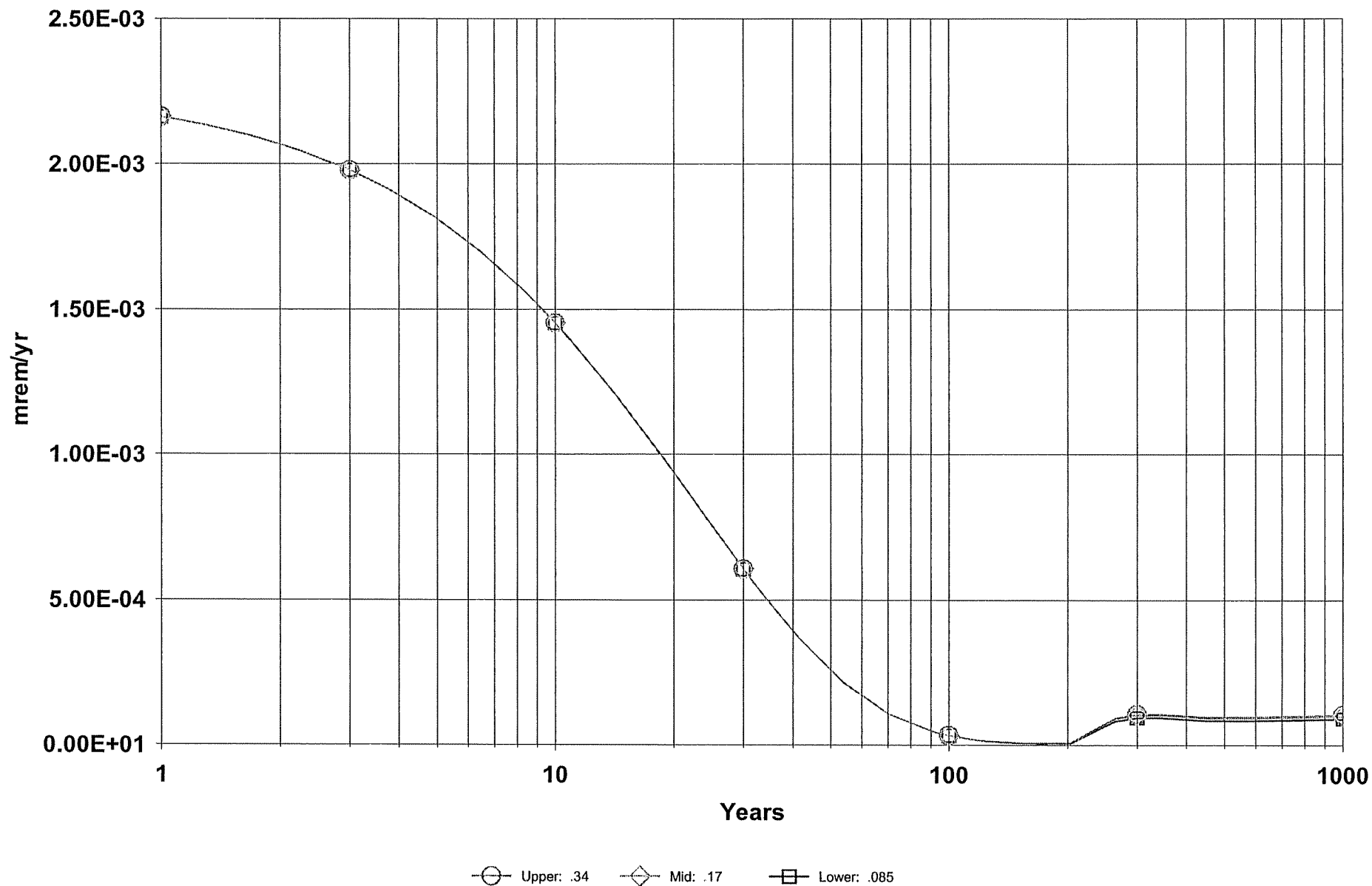
DOSE: All Nuclides Summed, All Pathways Summed With SA on Wet weight crop yield for Non-Leafy



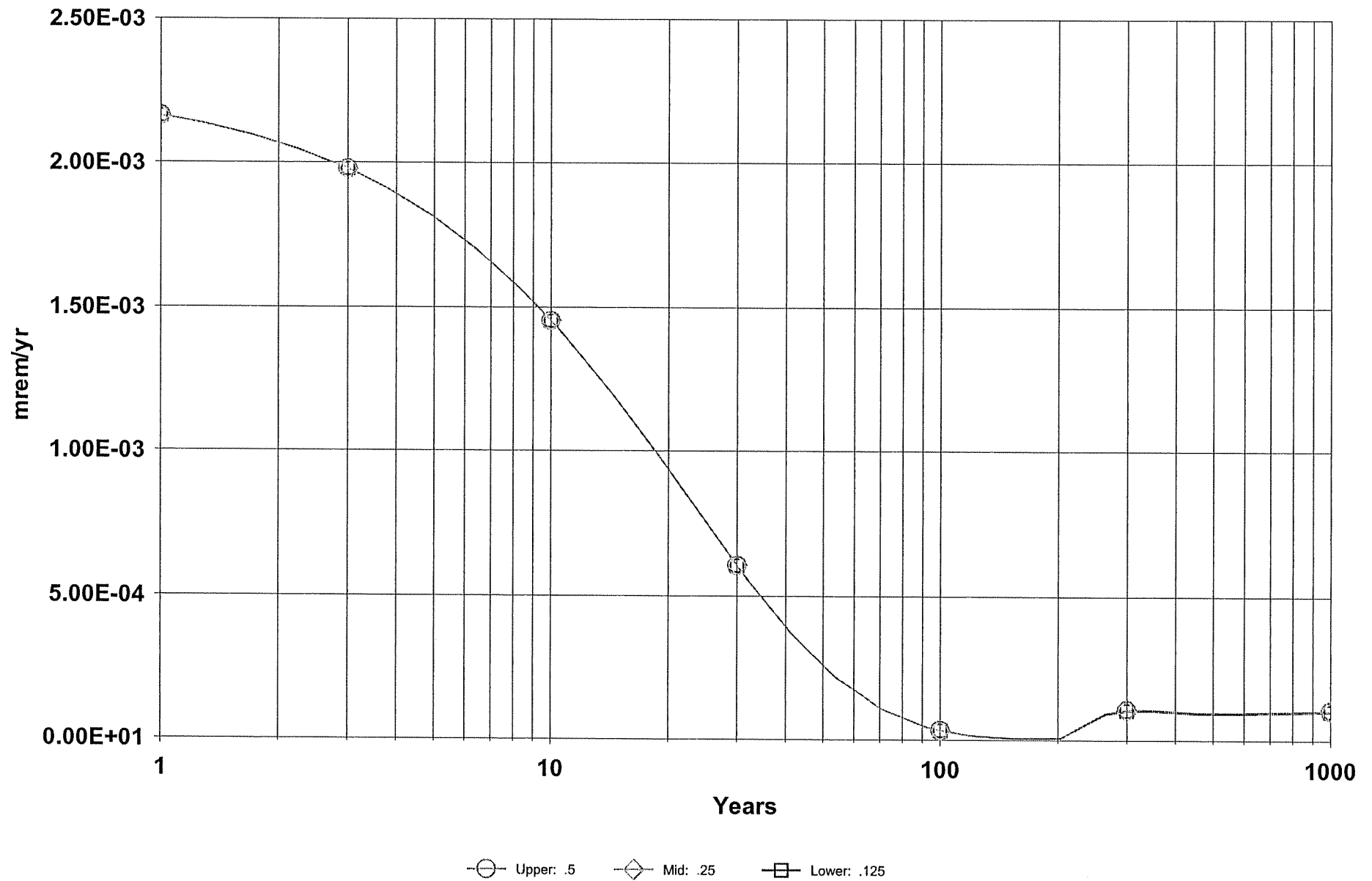
DOSE: All Nuclides Summed, All Pathways Summed With SA on Wet weight crop yield for Leafy



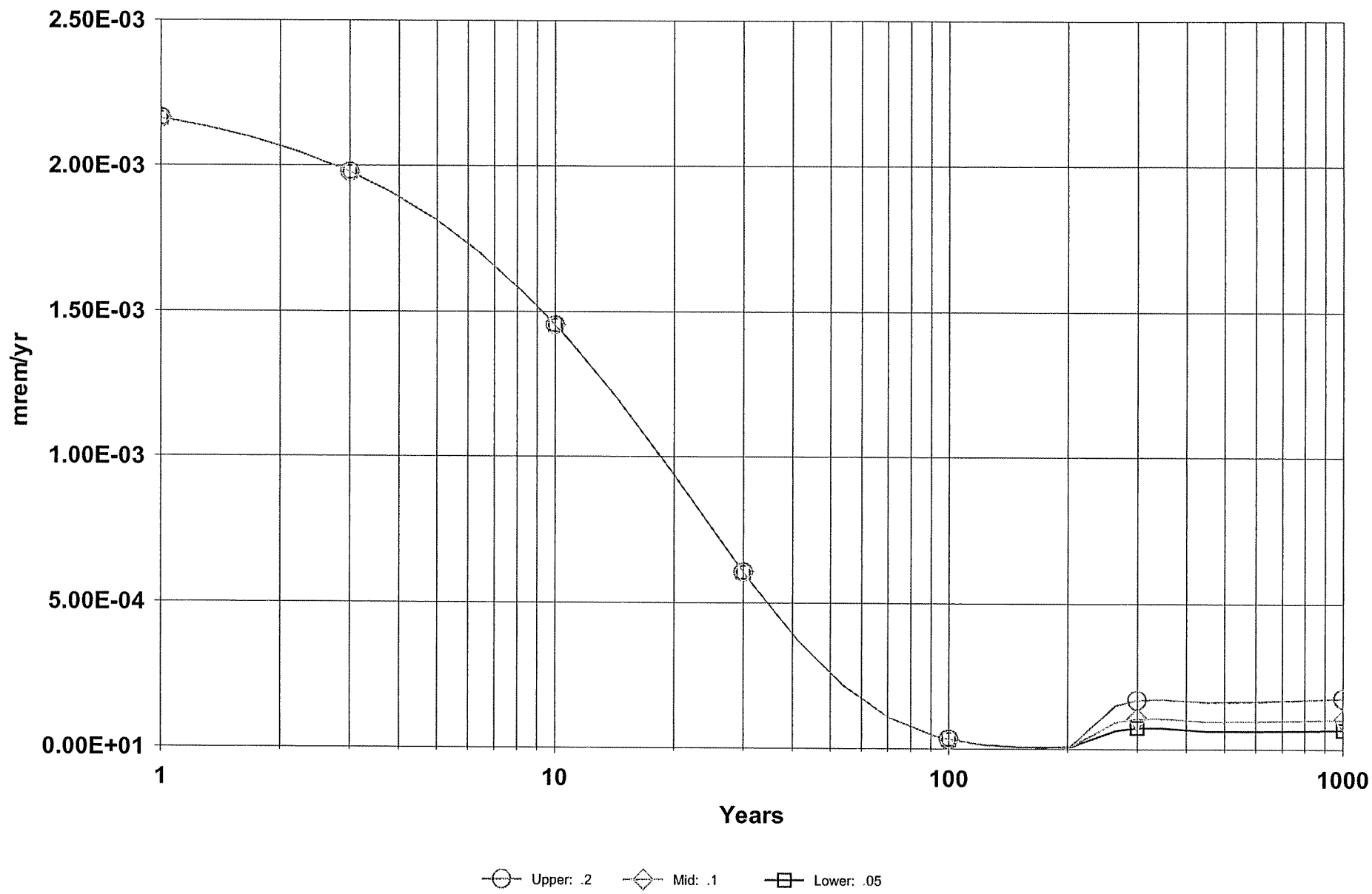
DOSE: All Nuclides Summed, All Pathways Summed With SA on Growing Season for Non-Leafy



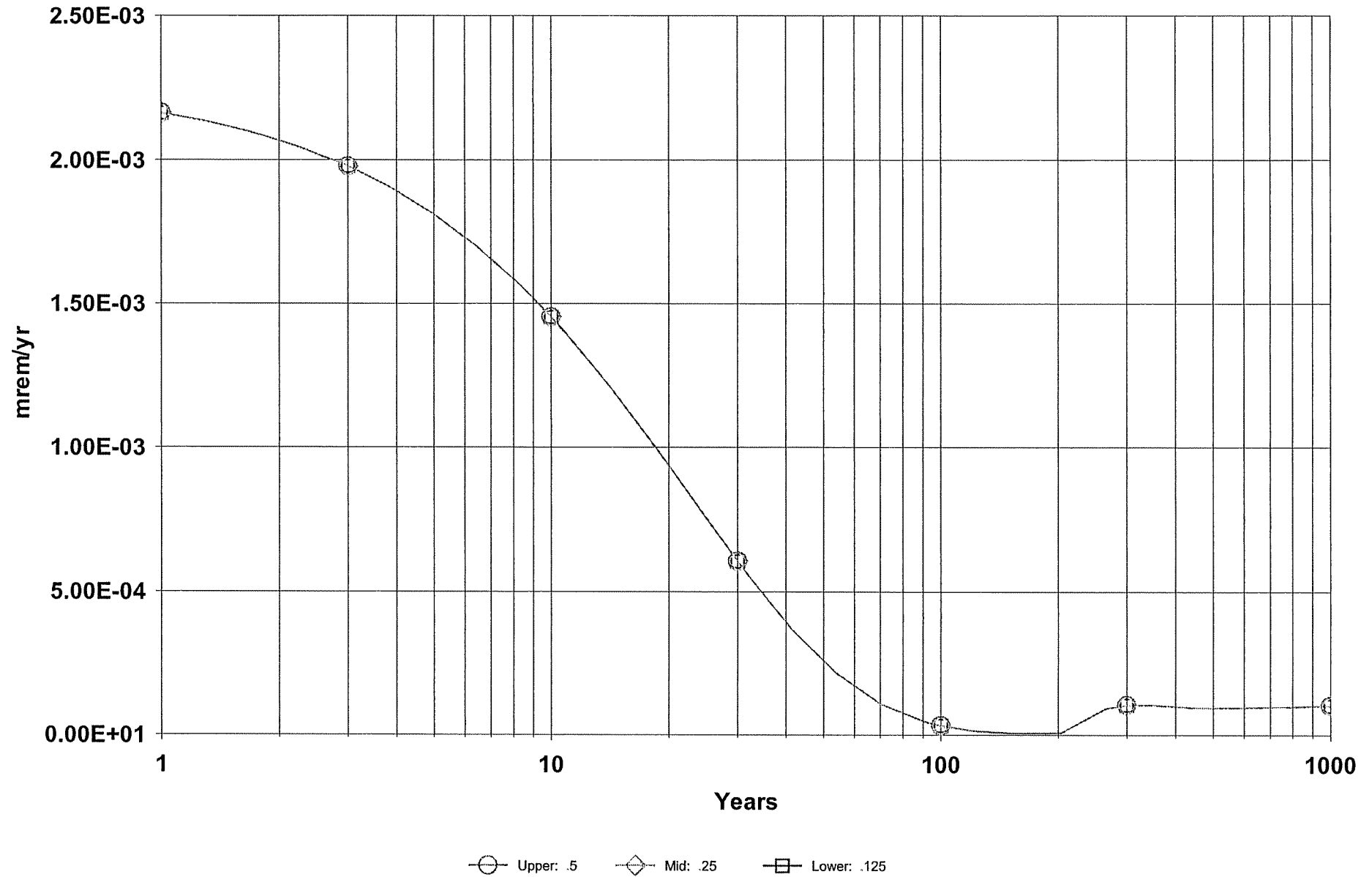
DOSE: All Nuclides Summed, All Pathways Summed With SA on Growing Season for Leafy



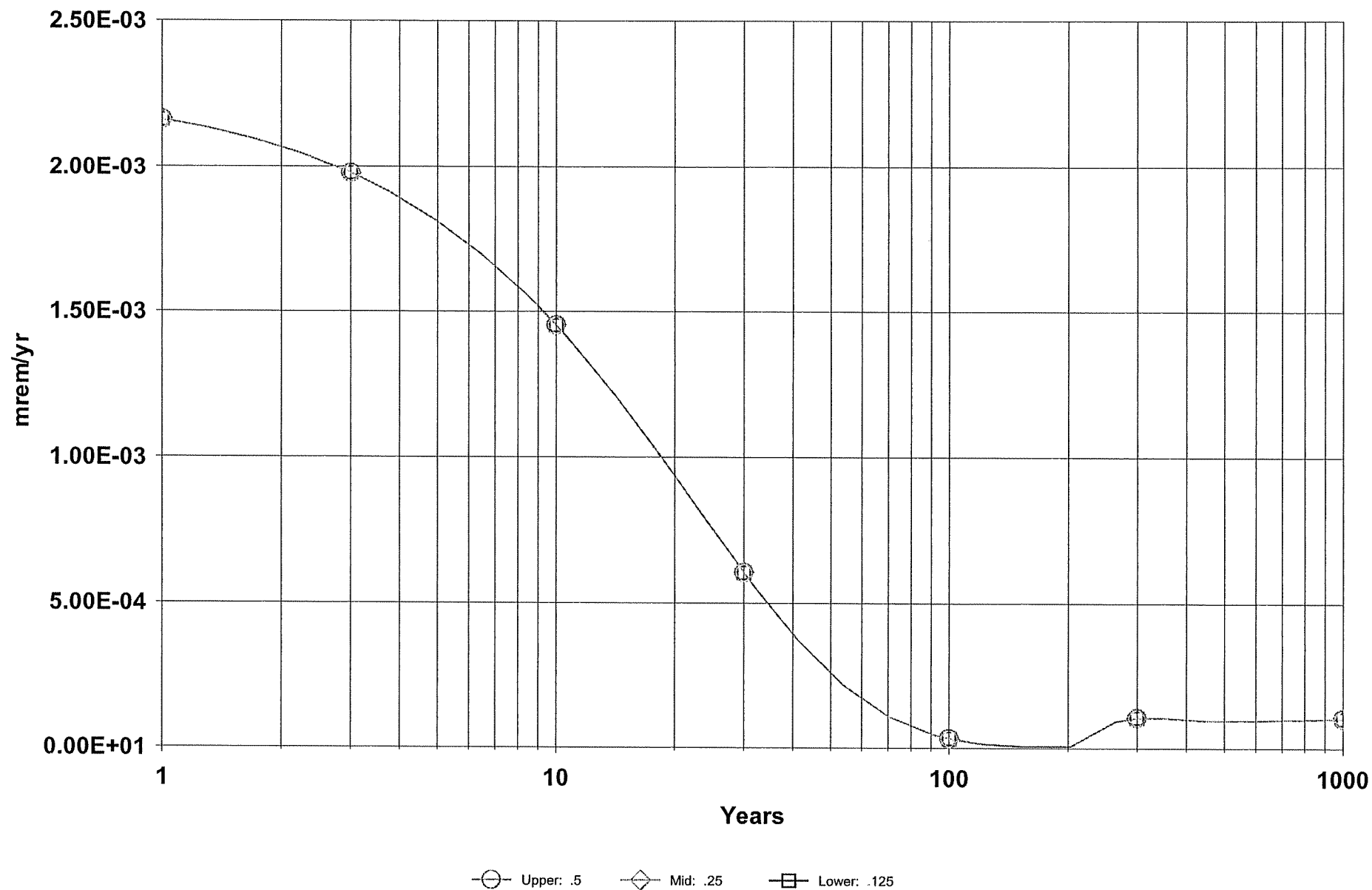
DOSE: All Nuclides Summed, All Pathways Summed With SA on Translocation Factor for Non-Leafy



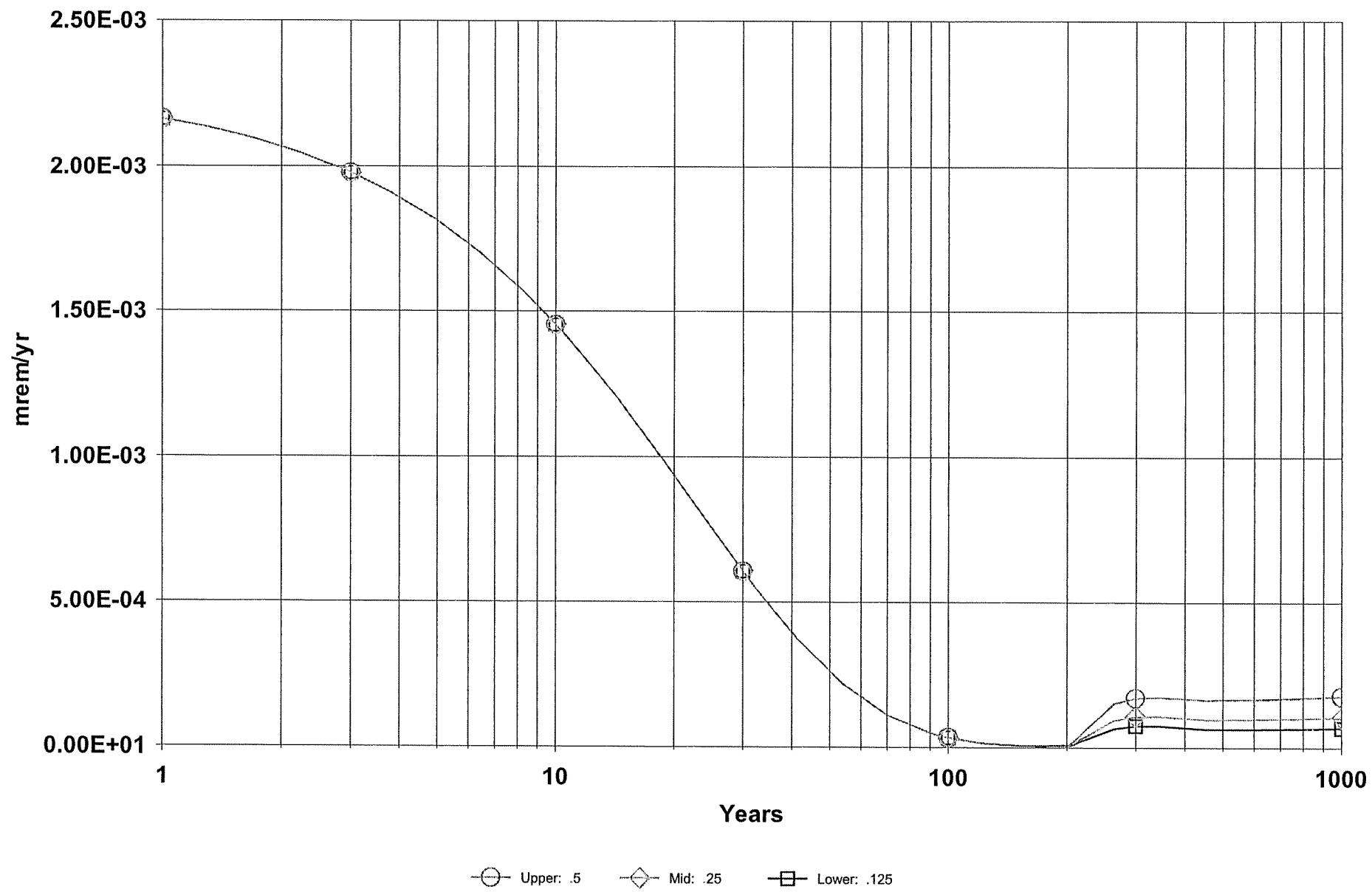
DOSE: All Nuclides Summed, All Pathways Summed With SA on Dry Foliar Interception Fraction for Non-Leafy



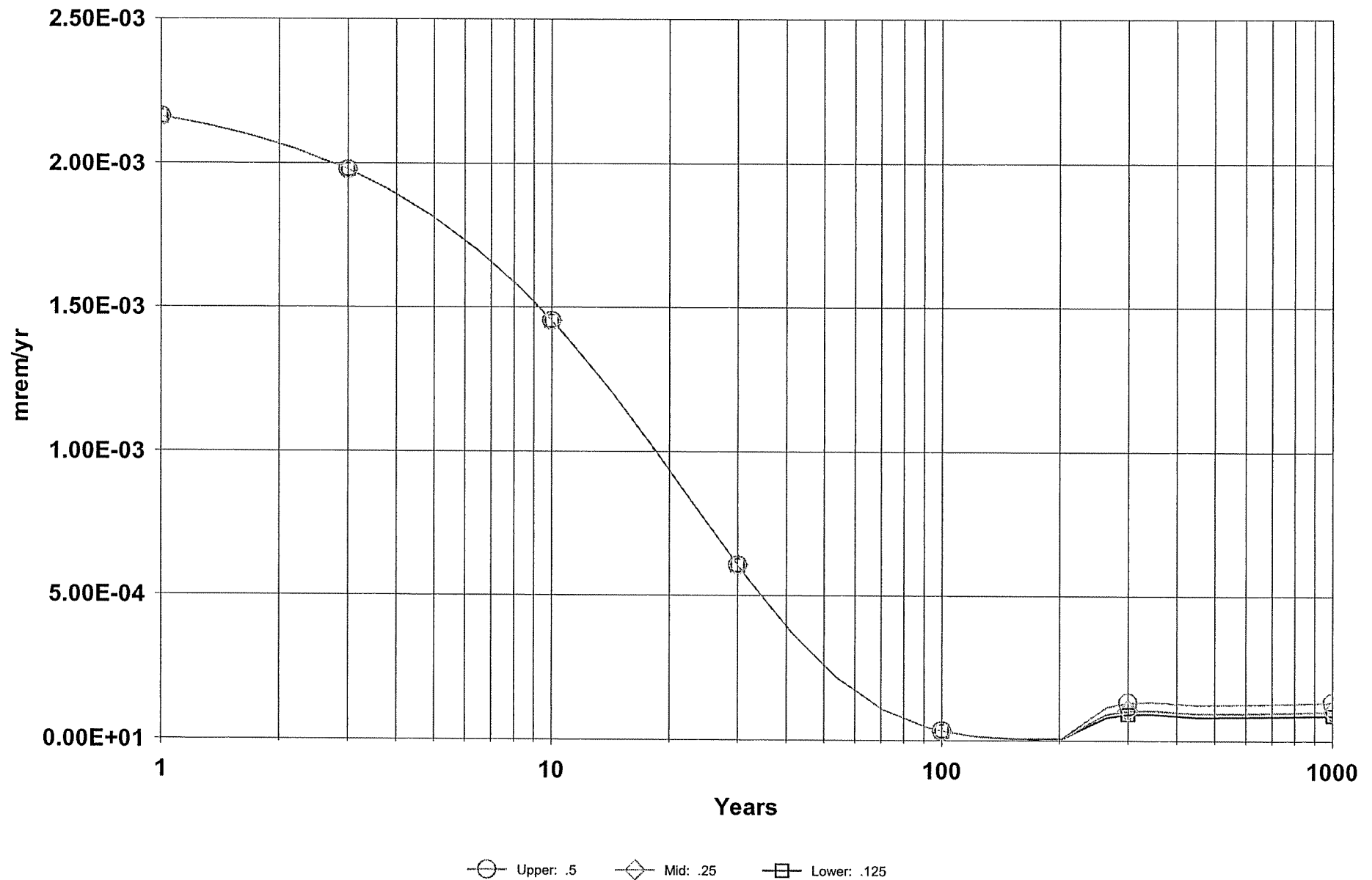
DOSE: All Nuclides Summed, All Pathways Summed With SA on Dry Foliar Interception Fraction for Leafy



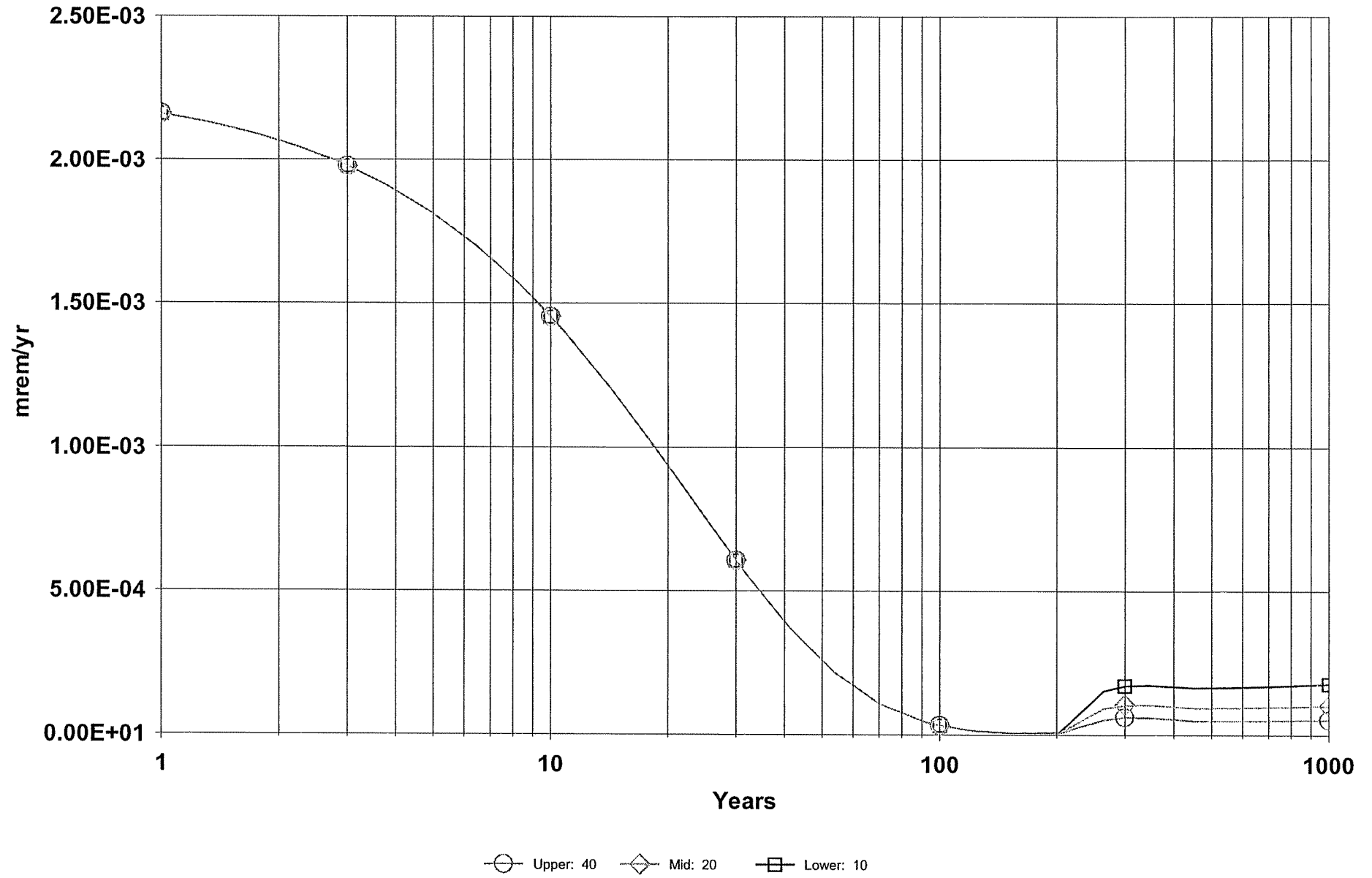
DOSE: All Nuclides Summed, All Pathways Summed With SA on Wet Foliar Interception Fraction for Non-Leafy



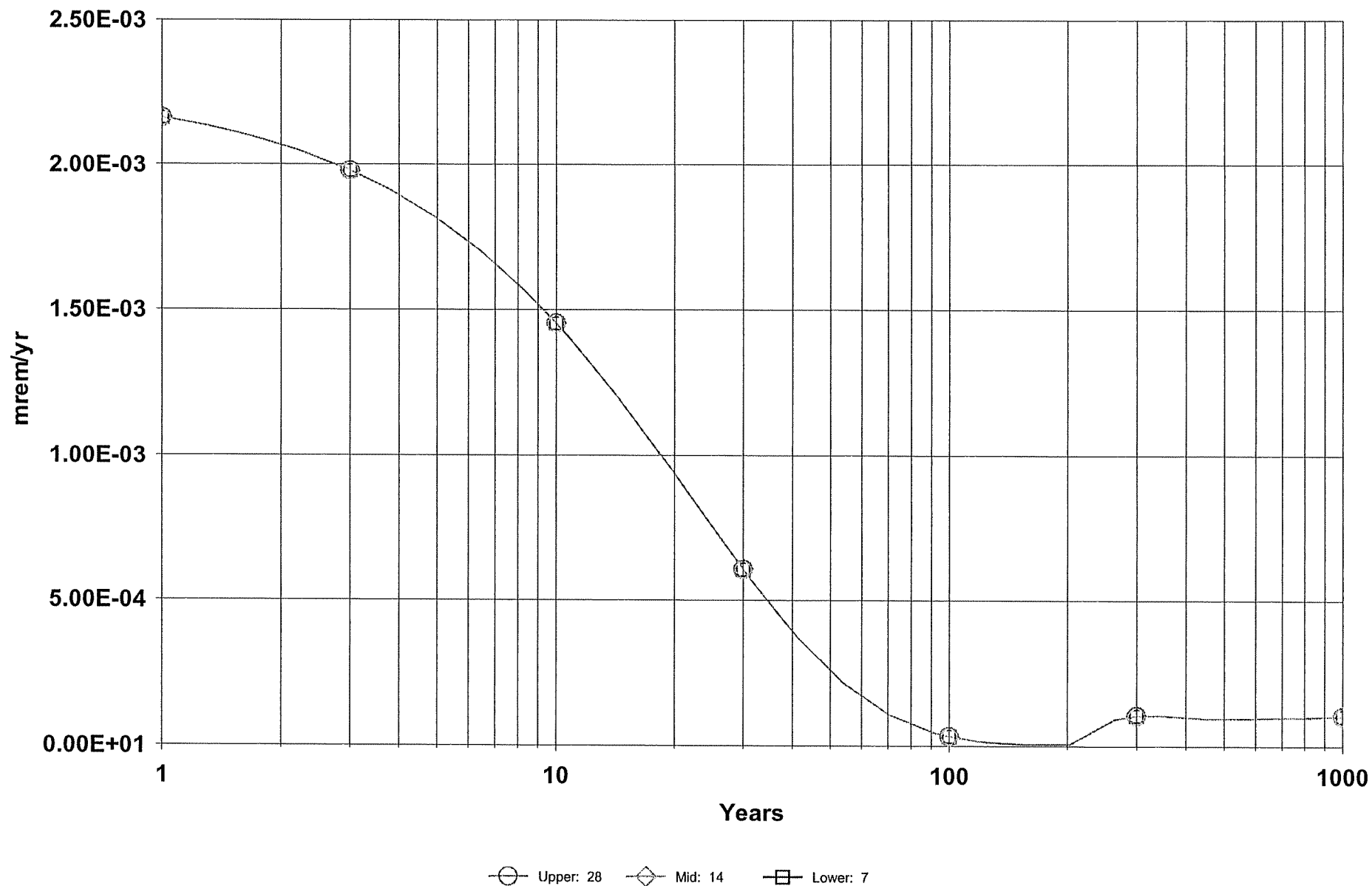
DOSE: All Nuclides Summed, All Pathways Summed With SA on Wet Foliar Interception Fraction for Leafy



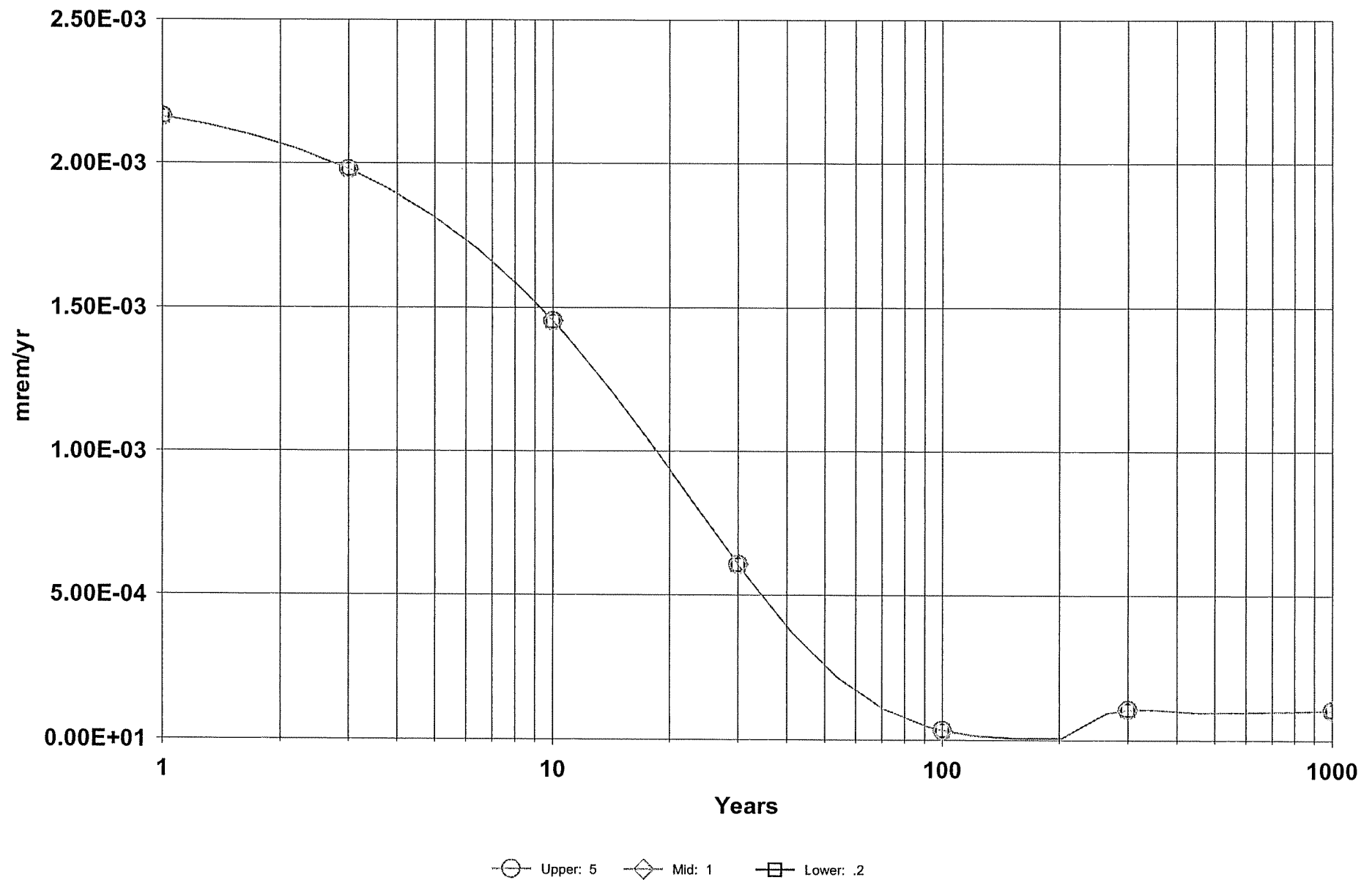
DOSE: All Nuclides Summed, All Pathways Summed With SA on Weathering Removal Constant for Vegetation



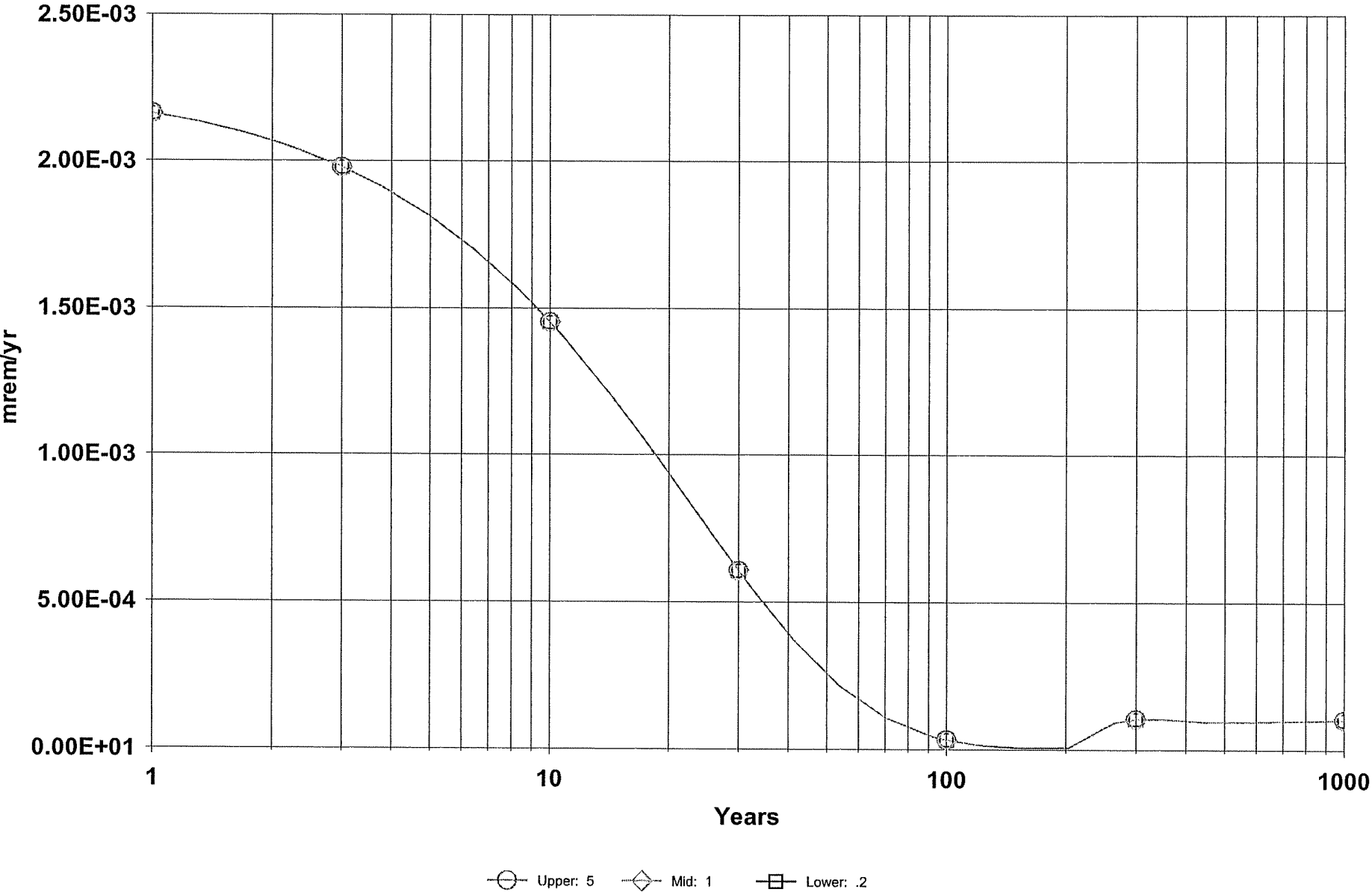
DOSE: All Nuclides Summed, All Pathways Summed With SA on Storage time for Fruits, non-leafy vegetables, and



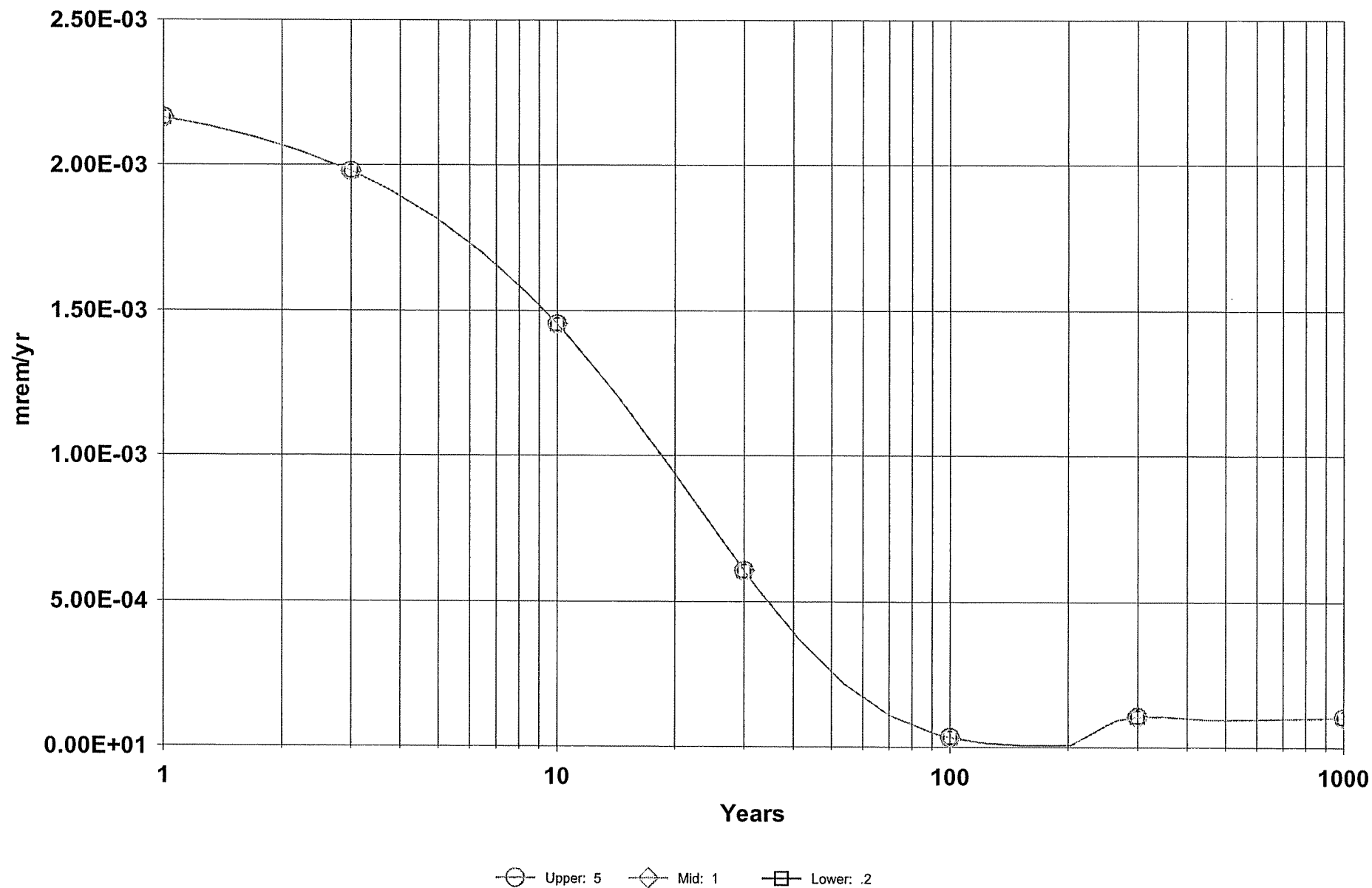
DOSE: All Nuclides Summed, All Pathways Summed With SA on Storage time for Leafy vegetables



DOSE: All Nuclides Summed, All Pathways Summed With SA on Storage time for Well water



DOSE: All Nuclides Summed, All Pathways Summed With SA on Storage time for Surface water



Appendix G2

Industrial Workers

Sensitivity Analysis

Table G-2

**Westinghouse Blairsville
RESRAD Sensitivity Analysis
Industrial Worker**

							Total Parameters: 147
							Sensitivity analysis performed on: 32
							# of Parameters above:
							>1% Increase 14
							>5% Increase 11
							>10% Increase 11
							Max Dose
							0.0012 0.00066
							13 pCi/g Dose: 9.51E-04
							1 pCi/g Dose: 7.32E-05
RESRAD Menu	Parameter	Base Case Value	Sensitivity Factor	Dose When Factor is Increased	Dose When Factor is Decreased	Governing Sensitivity (increase in dose)	% by which Dose is Increased
Contaminated Zone	Area of contaminated zone (m ²)	1.210E+04	NA				
	Thickness of contaminated zone (meters)	1.524E-01	2	8.20E-05	5.00E-05	Factor Increase	12.05%
	Length parallel to aquifer flow (m)	NA	NA				
Soil Concentrations	Basic radiation dose limit (mrem/yr)	2.500E+01	NA				
	Time since placement of material (yr)	0.000E+00	NA				
		0.000E+00	NA				
Calculation Times	Times for calculations (yr)	1.000E+00	NA				
	Times for calculations (yr)	3.000E+00	NA				
	Times for calculations (yr)	1.000E+01	NA				
	Times for calculations (yr)	3.000E+01	NA				
	Times for calculations (yr)	1.000E+02	NA				
	Times for calculations (yr)	3.000E+02	NA				
	Times for calculations (yr)	1.000E+03	NA				
		0.000E+00	NA				
Soil Concentrations	Initial principal radionuclides (pCi/g): U-234	7.500E-01	NA				
	Initial principal radionuclides (pCi/g): U-235	4.000E-02	NA				
	Initial principal radionuclides (pCi/g): U-238	2.100E-01	NA				
Cover/Hydrology	Cover depth (m)	3.048E-01	2	1.00E-05	6.60E-04	Factor Decrease	801.89%
	Density of cover material (g/cm ³)	1.440E+00	1.2	3.00E-05	1.45E-04	Factor Decrease	98.14%
	Cover erosion rate (m/yr)	1.000E-03	5	7.00E-04	7.32E-05	Factor Increase	856.55%
	Density of contaminated zone (g/cm ³)	1.440E+00	1.2	7.40E-05	6.60E-05	Factor Increase	1.12%
	Contaminated zone erosion rate (m/yr)	1.000E-03	2	7.32E-05	7.32E-05	No Change	0.00%
	Contaminated zone total porosity	4.000E-01	2	7.32E-05	7.32E-05	No Change	0.00%
	Contaminated zone field capacity	2.000E-01	2	7.32E-05	7.32E-05	No Change	0.00%
	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	2	7.32E-05	7.32E-05	No Change	0.00%
	Contaminated zone b parameter	5.300E+00	2	7.32E-05	7.32E-05	No Change	0.00%
	Average annual wind speed (m/sec)	2.000E+00	1.5	7.32E-05	7.32E-05	No Change	0.00%
	Humidity in air (g/cm ³)	NA	NA				
	Evapotranspiration coefficient	5.000E-01	1.5	7.40E-05	6.95E-05	Factor Increase	1.12%
	Precipitation (m/yr)	1.016E+00	1.5	6.95E-05	7.40E-05	Factor Decrease	1.12%
	Irrigation (m/yr)	2.000E-01	1.5	7.32E-05	7.32E-05	No Change	0.00%
	Irrigation mode	overhead	NA				
	Runoff coefficient	2.000E-01	1.5	7.32E-05	7.32E-05	No Change	0.00%
	Watershed area for nearby stream or pond (m ²)	NA	NA				
	Accuracy for water/soil computations	NA	NA				
Saturated Zone	Density of saturated zone (g/cm ³)	NA	NA				
	Saturated zone total porosity	NA	NA				
	Saturated zone effective porosity	NA	NA				
	Saturated zone field capacity	NA	NA				
	Saturated zone hydraulic conductivity (m/yr)	NA	NA				
	Saturated zone hydraulic gradient	NA	NA				
	Saturated zone b parameter	NA	NA				
	Water table drop rate (m/yr)	NA	NA				
	Well pump intake depth (m below water table)	NA	NA				
	Model: Nondispersion (ND) or Mass-Balance (MB)	NA	NA				
	Well pumping rate (m ³ /yr)	NA	NA				
Unsaturated Zone	Number of unsaturated zone strata	NA	NA				

Table G-2

**Westinghouse Blairsville
RESRAD Sensitivity Analysis
Industrial Worker**

RESRAD Menu	Parameter	Base Case Value	Sensitivity Factor	Dose When Factor is Increased	Dose When Factor is Decreased	Governing Sensitivity (increase in dose)	% by which Dose is Increased
	Unsat. zone 1, thickness (m)	NA	NA				
	Unsat. zone 1, soil density (g/cm ³)	NA	NA				
	Unsat. zone 1, total porosity	NA	NA				
	Unsat. zone 1, effective porosity	NA	NA				
	Unsat. zone 1, field capacity	NA	NA				
	Unsat. zone 1, soil-specific b parameter	NA	NA				
	Unsat. zone 1, hydraulic conductivity (m/yr)	NA	NA				
Soil Concentrations - Transport	Distribution coefficients for U-234						
	Contaminated zone (cm ³ /g)	5.000E+01	10	1.00E-03	7.32E-05	Factor Increase	1266.49%
	Unsat. zone (cm ³ /g)	5.000E+01	10	7.32E-05	7.32E-05	No Change	0.00%
	Saturated zone (cm ³ /g)	5.000E+01	10	7.32E-05	7.32E-05	No Change	0.00%
	Leach rate (yr)	0.000E+00	NA				
	Solubility constant	0.000E+00	NA				
	Distribution coefficients for U-235						
	Contaminated zone (cm ³ /g)	5.000E+01	10	1.10E-03	7.32E-05	Factor Increase	1403.14%
	Unsat. zone (cm ³ /g)	5.000E+01	10	7.32E-05	7.32E-05	No Change	0.00%
	Saturated zone (cm ³ /g)	5.000E+01	10	7.32E-05	7.32E-05	No Change	0.00%
	Leach rate (yr)	0.000E+00	NA				
	Solubility constant	0.000E+00	NA				
	Distribution coefficients for U-238						
	Contaminated zone (cm ³ /g)	5.000E+01	10	1.20E-03	7.32E-05	Factor Increase	1539.79%
	Unsat. zone (cm ³ /g)	5.000E+01	10	7.32E-05	7.32E-05	No Change	0.00%
	Saturated zone (cm ³ /g)	5.000E+01	10	7.32E-05	7.32E-05	No Change	0.00%
	Leach rate (yr)	0.000E+00	NA				
	Solubility constant	0.000E+00	NA				
Occupancy	Inhalation rate (m ³ /yr)	1.226E+04	1.5	7.32E-05	7.32E-05	No Change	0.00%
	Mass loading for inhalation (g/m ³)	1.000E-04	5	7.32E-05	7.32E-05	No Change	0.00%
	Exposure duration (year)	3.000E+01	NA				
	Indoor Dust Filtration Factor (Shielding Factor, Inhalation)	5.000E-01	1.5	7.32E-05	7.32E-05	No Change	0.00%
	Shielding factor, external gamma	5.512E-01	1.5	9.20E-05	5.70E-05	Factor Increase	25.72%
	Fraction of time spent indoors (on site)	1.700E-01	1.5	9.20E-05	5.70E-05	Factor Increase	25.72%
	Fraction of time spent outdoors (on site)	6.000E-02	1.5	8.50E-05	6.10E-05	Factor Increase	16.15%
	Shape of Contaminated Zone	Circular	NA				
Ingestion, Dietary	Fruits, vegetables and grain consumption (kg/yr)	NA	NA				
	Leafy vegetable consumption (kg/yr)	NA	NA				
	Milk consumption (L/yr)	NA	NA				
	Meat and poultry consumption (kg/yr)	NA	NA				
	Fish consumption (kg/yr)	NA	NA				
	Other seafood consumption (kg/yr)	NA	NA				
	Soil ingestion rate (g/yr)	1.825E+01	2	7.32E-05	7.32E-05	No Change	0.00%
	Drinking water intake (L/yr)	NA	NA				
	Contamination fraction of drinking water	NA	NA				
	Contamination fraction of household water	NA	NA				
	Contamination fraction of livestock water	NA	NA				
	Contamination fraction of irrigation water	NA	NA				
	Contamination fraction of aquatic food	NA	NA				
	Contamination fraction of plant food	NA	NA				
	Contamination fraction of meat	NA	NA				
	Contamination fraction of milk	NA	NA				
Ingestion, Non-Dietary	Livestock fodder intake for meat (kg/day)	NA	NA				

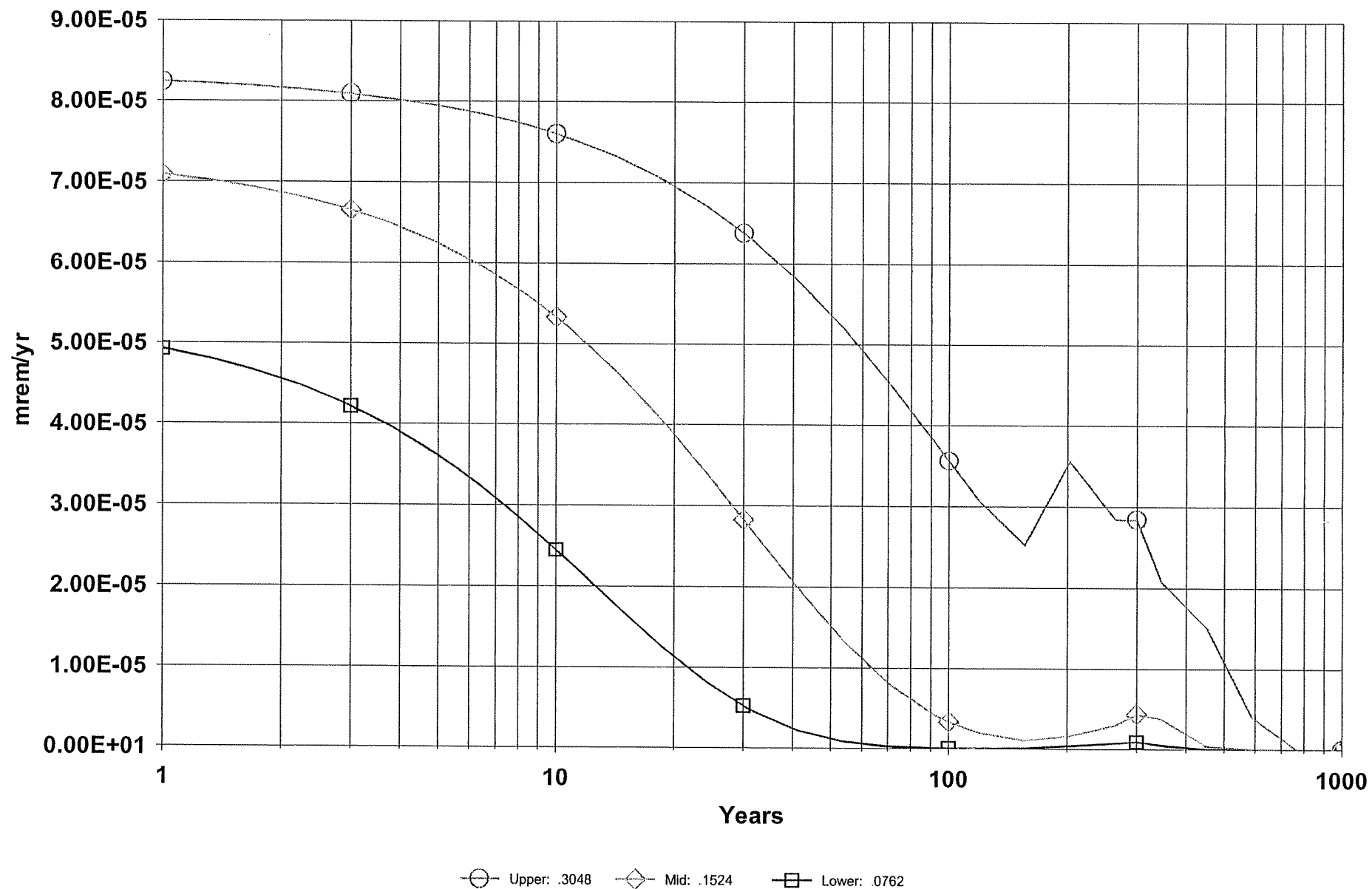
Table G-2

**Westinghouse Blairsville
RESRAD Sensitivity Analysis
Industrial Worker**

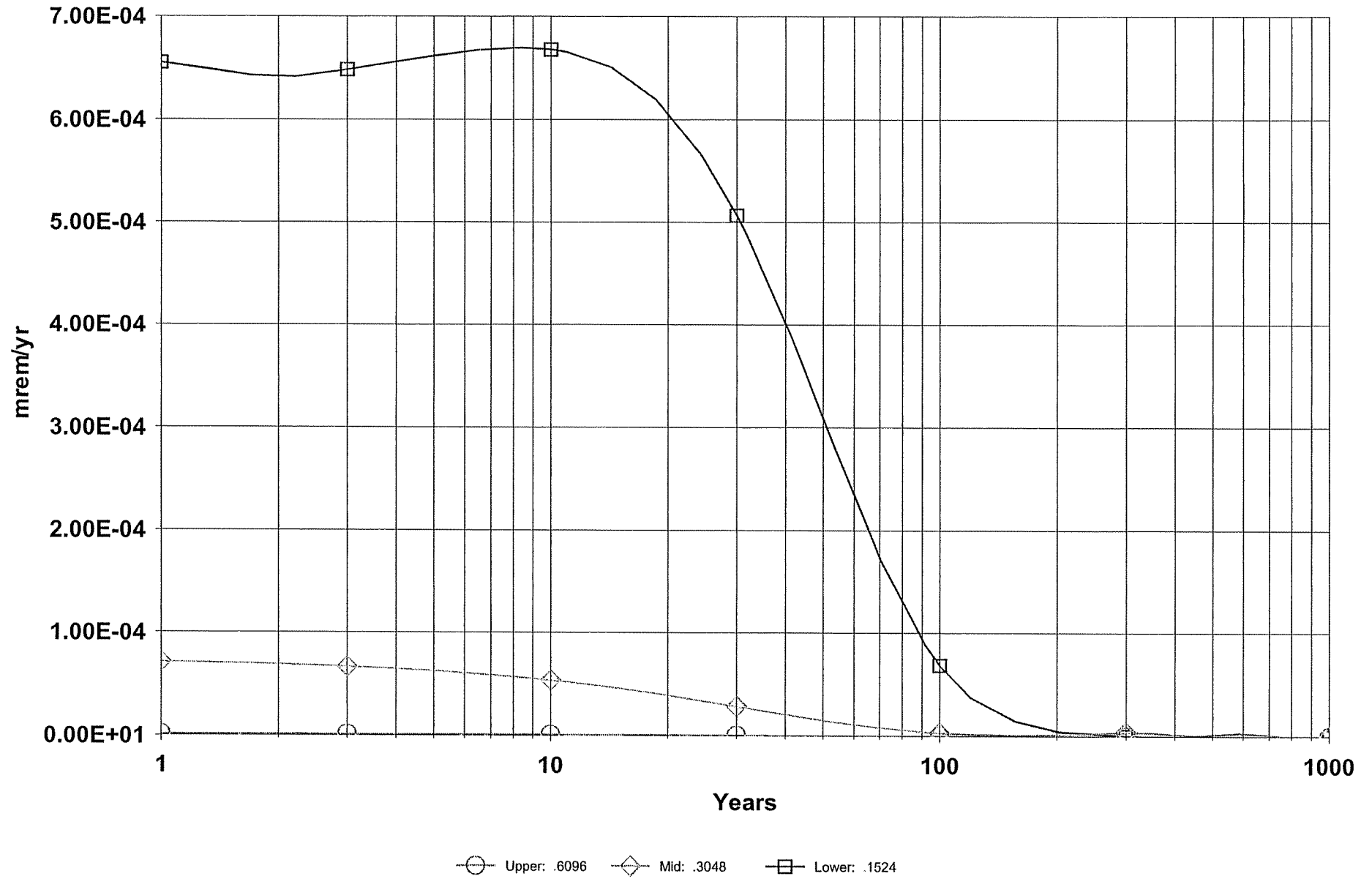
RESRAD Menu	Parameter	Base Case Value	Sensitivity Factor	Dose When Factor is Increased	Dose When Factor is Decreased	Governing Sensitivity (increase in dose)	% by which Dose is Increased
	Livestock fodder intake for milk (kg/day)	NA	NA				
	Livestock water intake for meat (L/day)	NA	NA				
	Livestock water intake for milk (L/day)	NA	NA				
	Livestock soil intake (kg/day)	NA	NA				
	Mass loading for foliar deposition (g/m ²)	NA	NA				
	Depth of soil mixing layer (m)	1.500E-01	2	1.42E-04	7.32E-05	Factor Increase	94.04%
	Depth of roots (m)	NA	NA				
	Drinking water fraction from ground water	NA	NA				
	Household water fraction from ground water	NA	NA				
	Livestock water fraction from ground water	NA	NA				
	Irrigation fraction from ground water	NA	NA				
Ingestion, Non-Dietary - Plant Factors	Wet weight crop yield for Non-Leafy (kg/m ²)	NA	NA				
	Wet weight crop yield for Leafy (kg/m ²)	NA	NA				
	Wet weight crop yield for Fodder (kg/m ²)	NA	NA				
	Growing Season for Non-Leafy (years)	NA	NA				
	Growing Season for Leafy (years)	NA	NA				
	Growing Season for Fodder (years)	NA	NA				
	Translocation Factor for Non-Leafy	NA	NA				
	Translocation Factor for Leafy	NA	NA				
	Translocation Factor for Fodder	NA	NA				
	Dry Foliar Interception Fraction for Non-Leafy	NA	NA				
	Dry Foliar Interception Fraction for Leafy	NA	NA				
	Dry Foliar Interception Fraction for Fodder	NA	NA				
	Wet Foliar Interception Fraction for Non-Leafy	NA	NA				
	Wet Foliar Interception Fraction for Leafy	NA	NA				
	Wet Foliar Interception Fraction for Fodder	NA	NA				
	Weathering Removal Constant for Vegetation	NA	NA				
Storage Times	Storage times of contaminated foodstuffs (days):						
	Fruits, non-leafy vegetables, and grain	NA	NA				
	Leafy vegetables	NA	NA				
	Milk	NA	NA				
	Meat and poultry	NA	NA				
	Fish	NA	NA				
	Crustacea and mollusks	NA	NA				
	Well water	NA	NA				
	Surface water	NA	NA				
	Livestock fodder	NA	NA				
Radon	Thickness of building foundation (m)	NA	NA				
	Bulk density of building foundation (g/cm ³)	NA	NA				
	Total porosity of the cover material	NA	NA				
	Total porosity of the building foundation	NA	NA				
	Volumetric water content of the cover material	NA	NA				
	Volumetric water content of the foundation	NA	NA				
	Diffusion coefficient for radon gas (m/sec):	NA	NA				
	in cover material	NA	NA				
	in foundation material	NA	NA				
	in contaminated zone soil	NA	NA				
	Radon vertical dimension of mixing (m)	NA	NA				
	Average building air exchange rate (1/hr)	NA	NA				
	Height of the building (room) (m)	NA	NA				
	Building interior area factor	NA	NA				
	Building depth below ground surface (m)	NA	NA				
	Emanating power of Rn-222 gas	NA	NA				
	Emanating power of Rn-220 gas	NA	NA				

NA = Not applicable to the current model because the pathway utilizing the parameter was turned off.

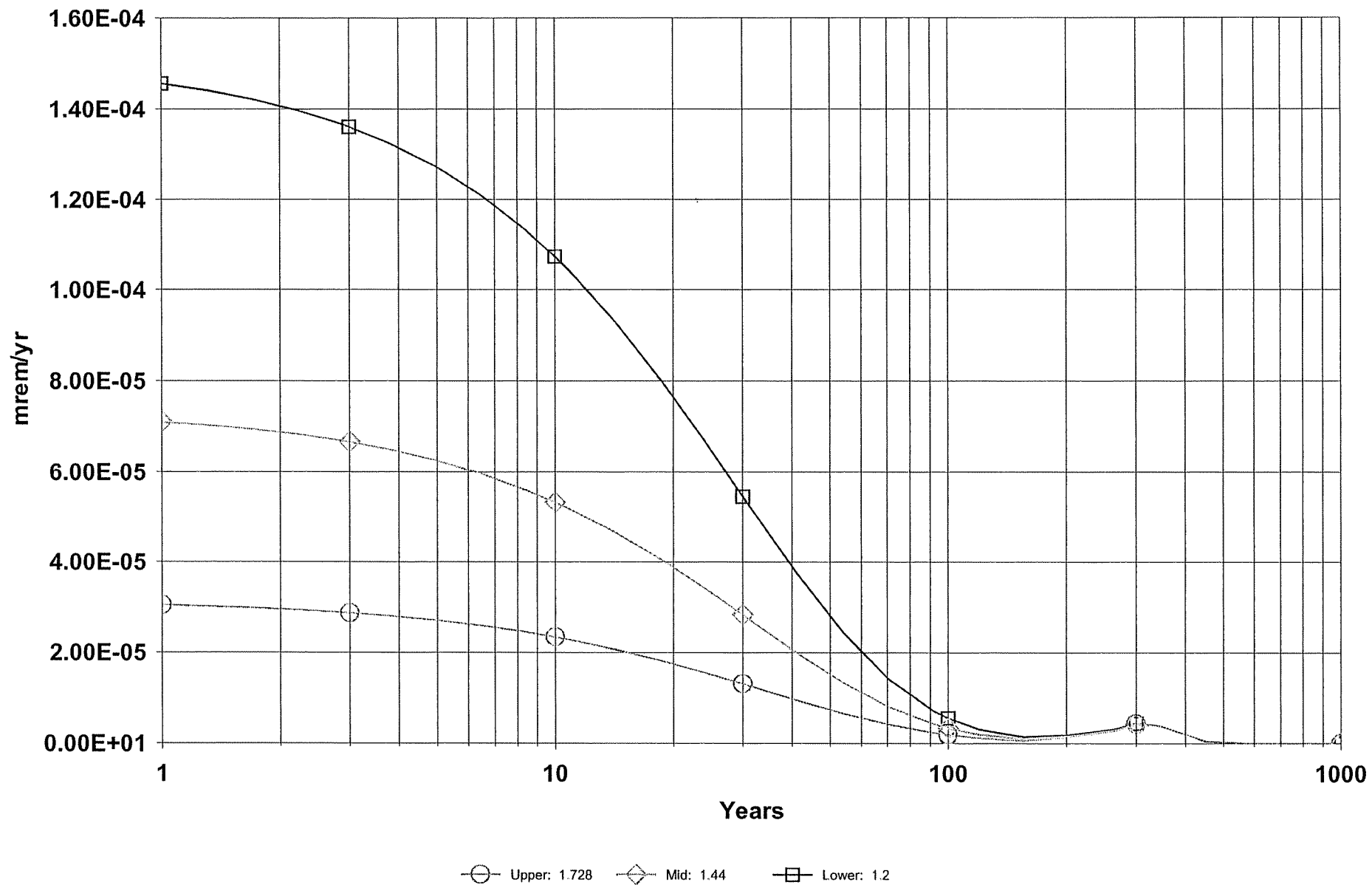
DOSE: All Nuclides Summed, All Pathways Summed With SA on Thickness of contaminated zone



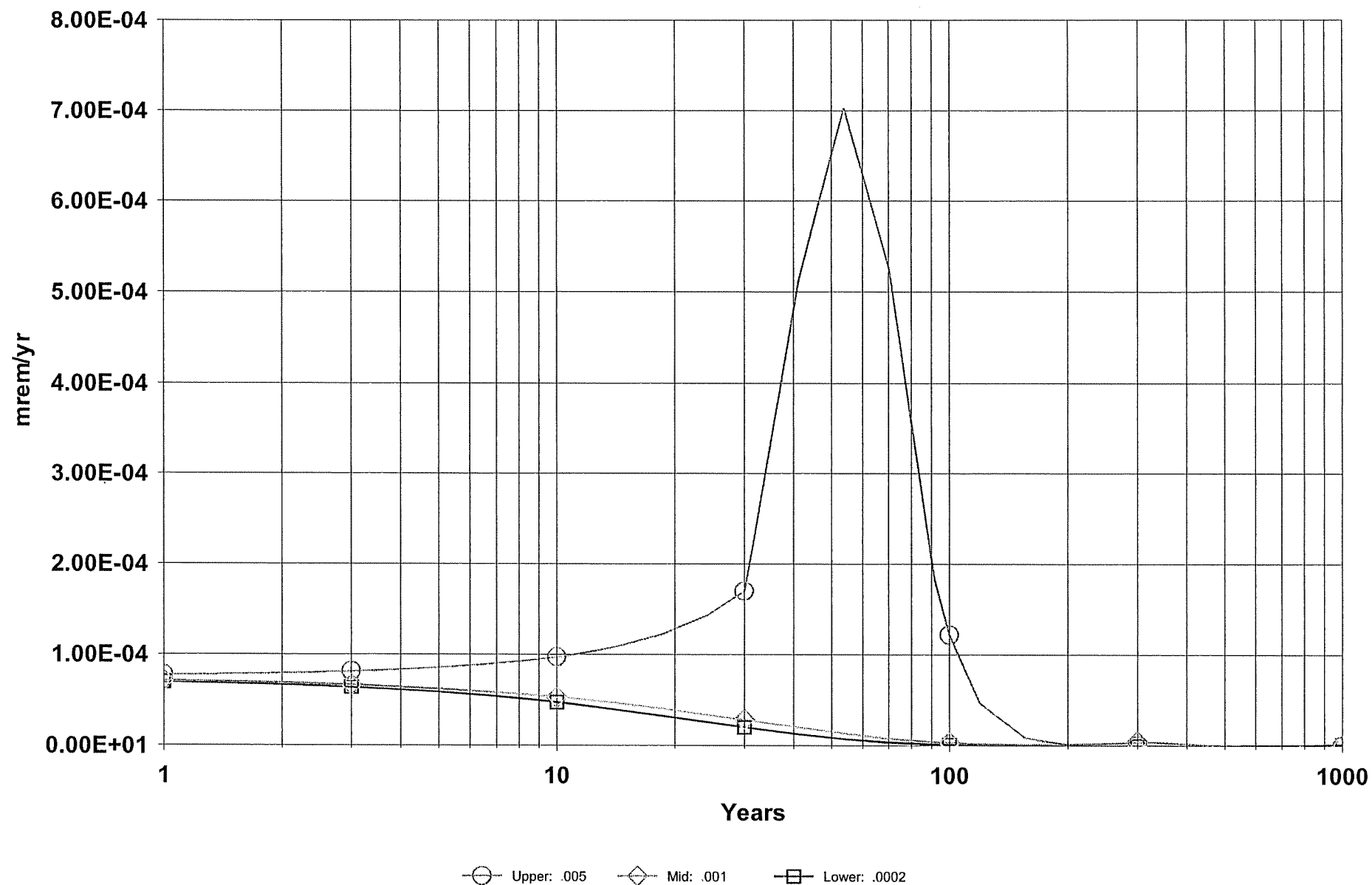
DOSE: All Nuclides Summed, All Pathways Summed With SA on Cover depth



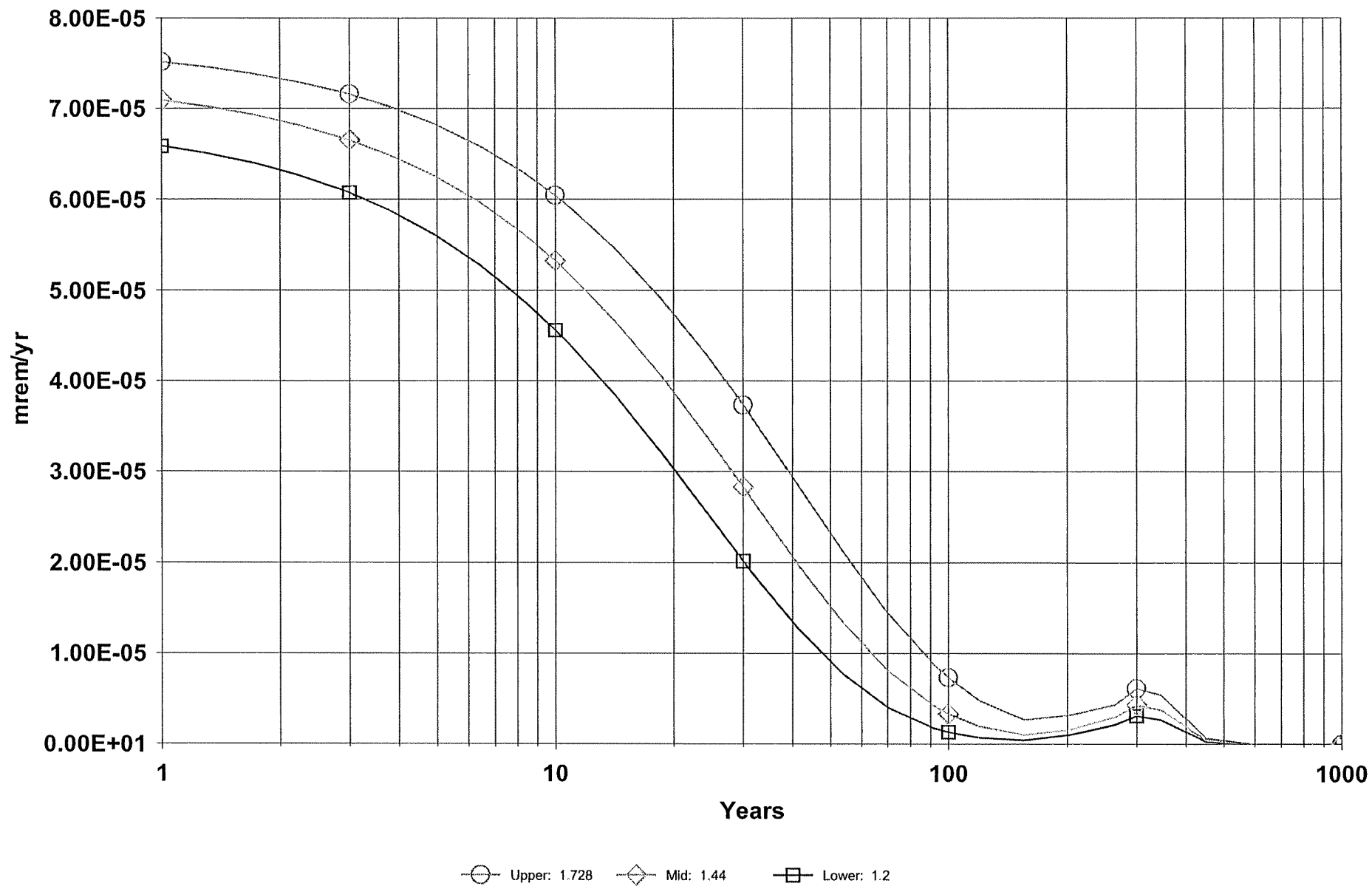
DOSE: All Nuclides Summed, All Pathways Summed With SA on Density of cover material



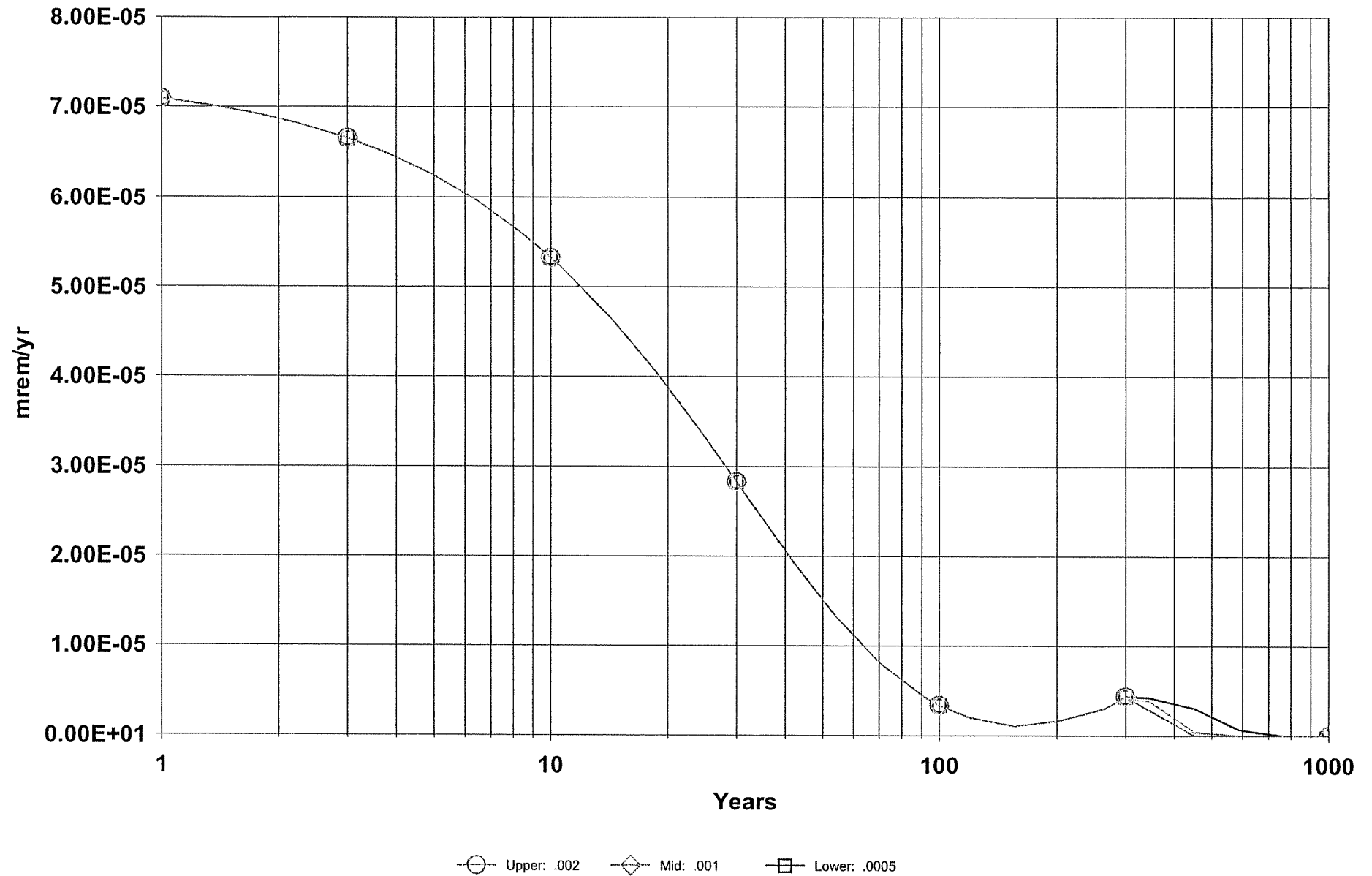
DOSE: All Nuclides Summed, All Pathways Summed With SA on Cover erosion rate



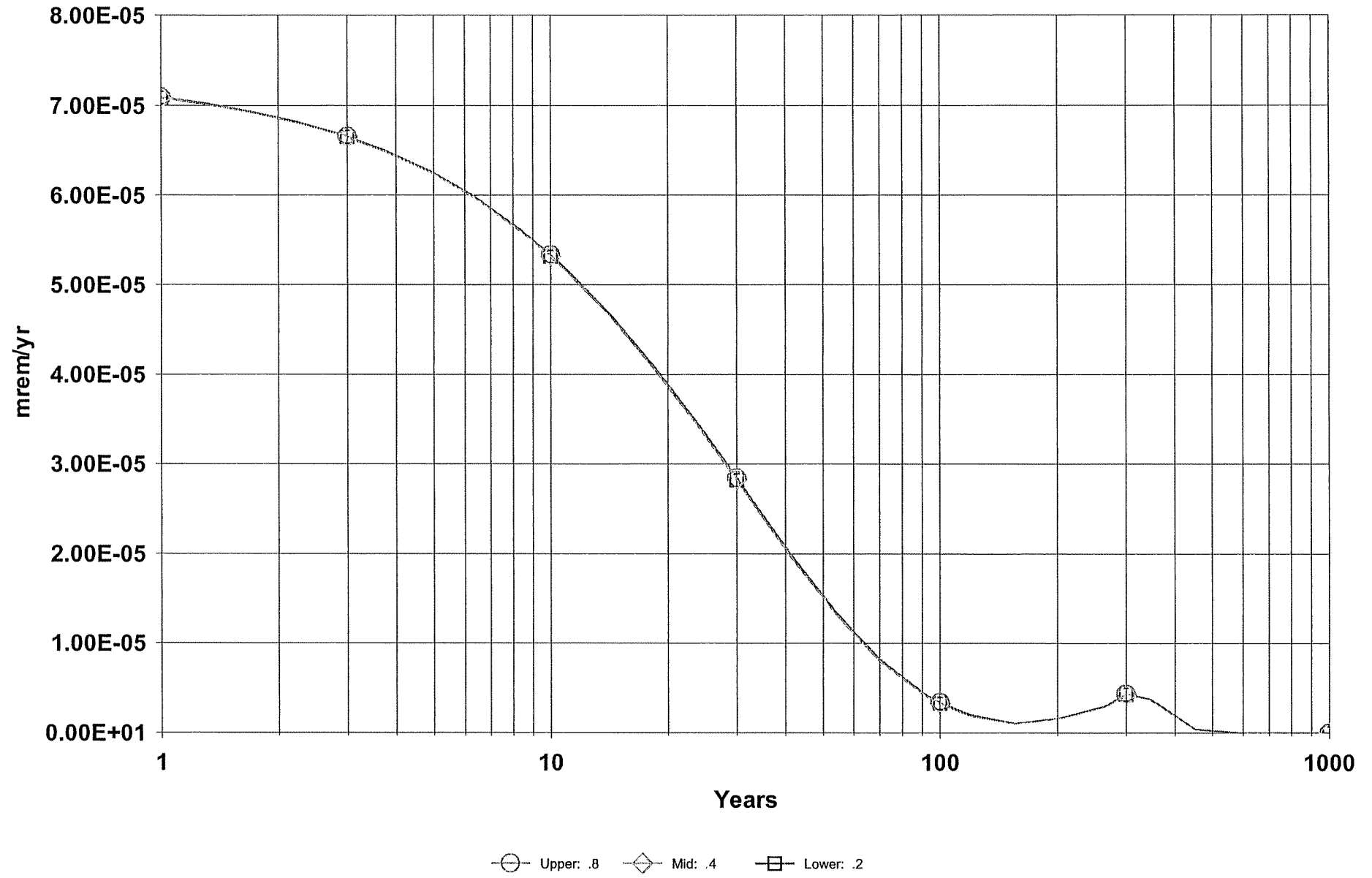
DOSE: All Nuclides Summed, All Pathways Summed With SA on Density of contaminated zone



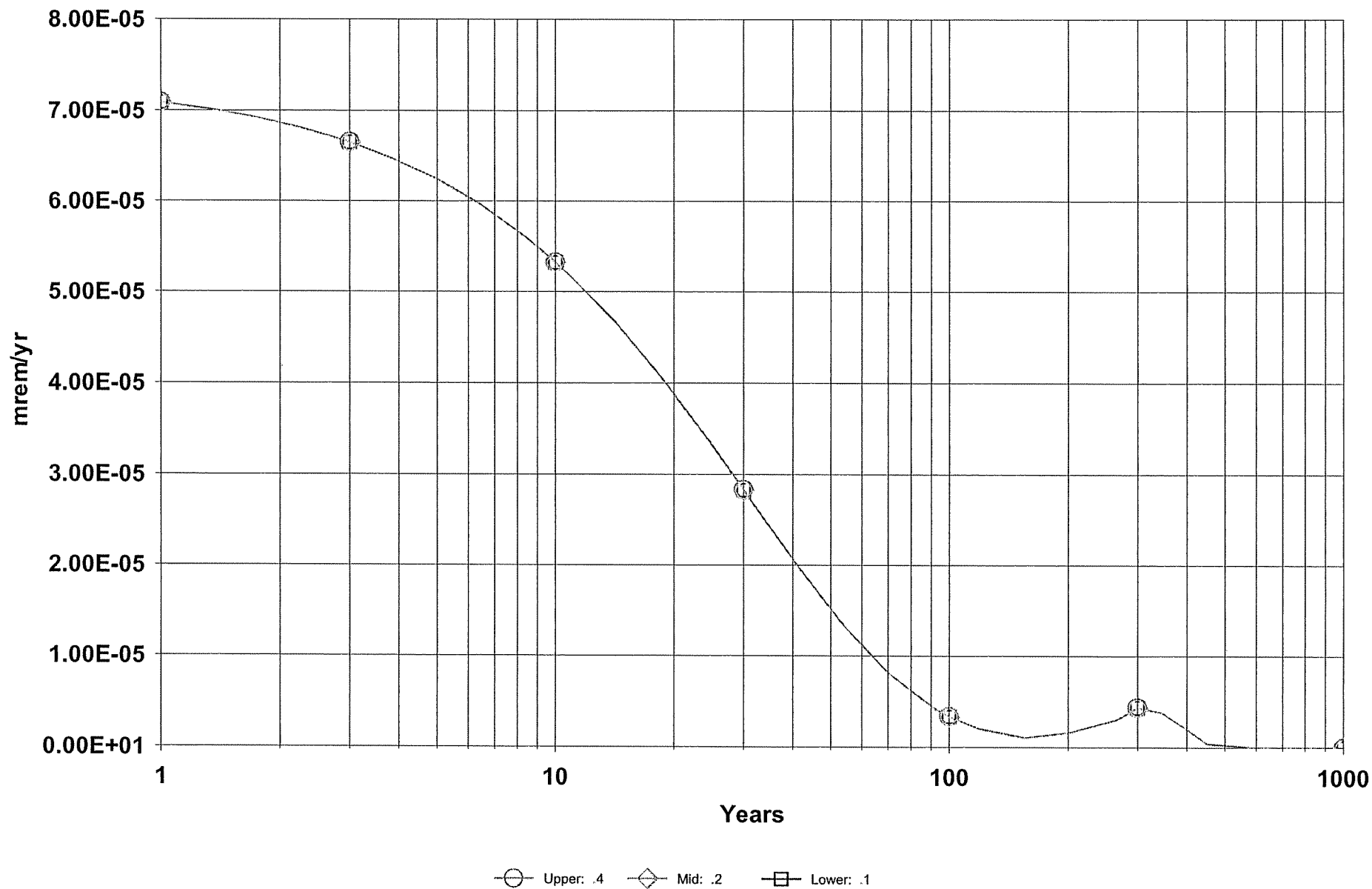
DOSE: All Nuclides Summed, All Pathways Summed With SA on Contaminated zone erosion rate



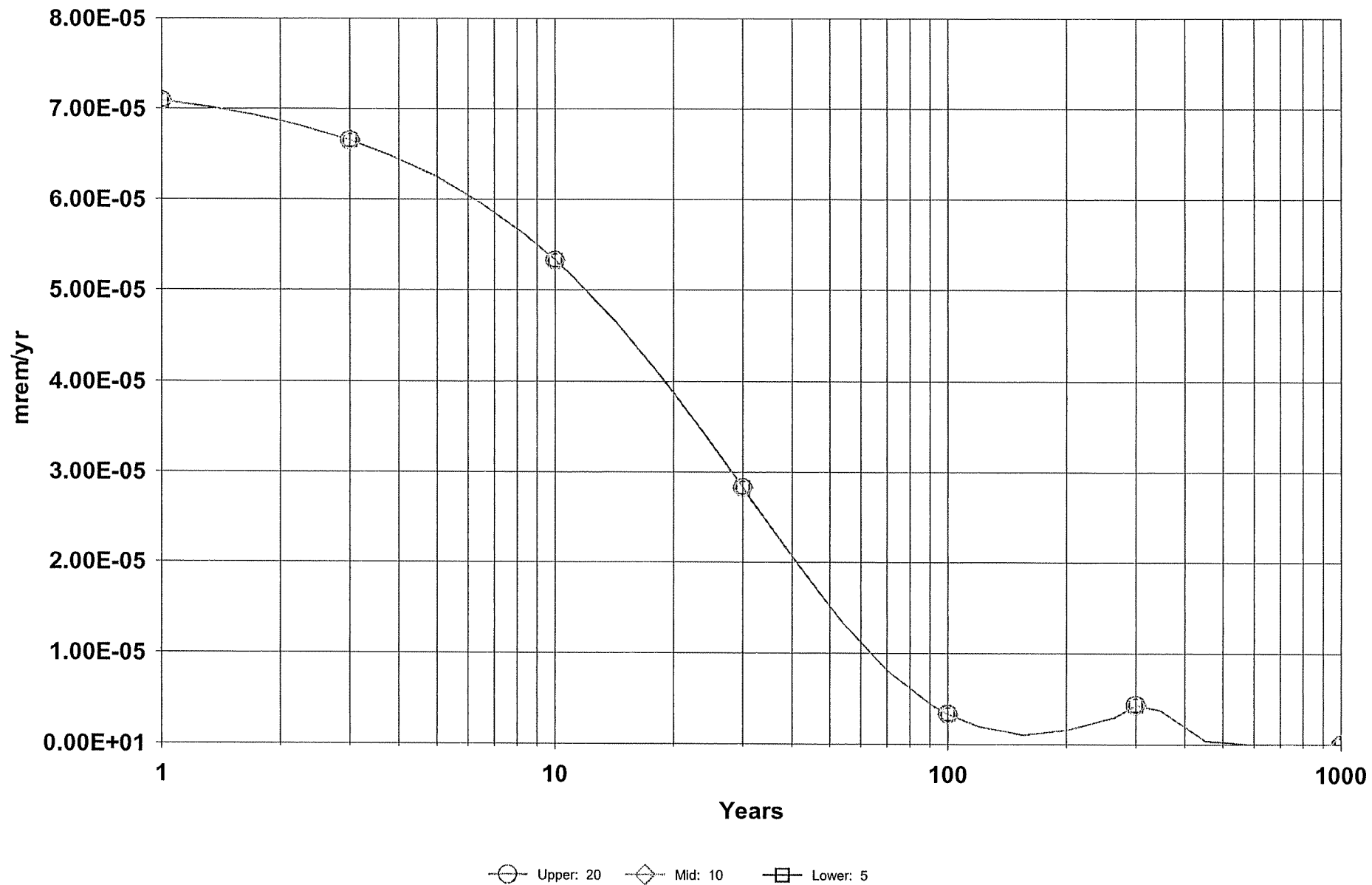
DOSE: All Nuclides Summed, All Pathways Summed With SA on Contaminated zone total porosity



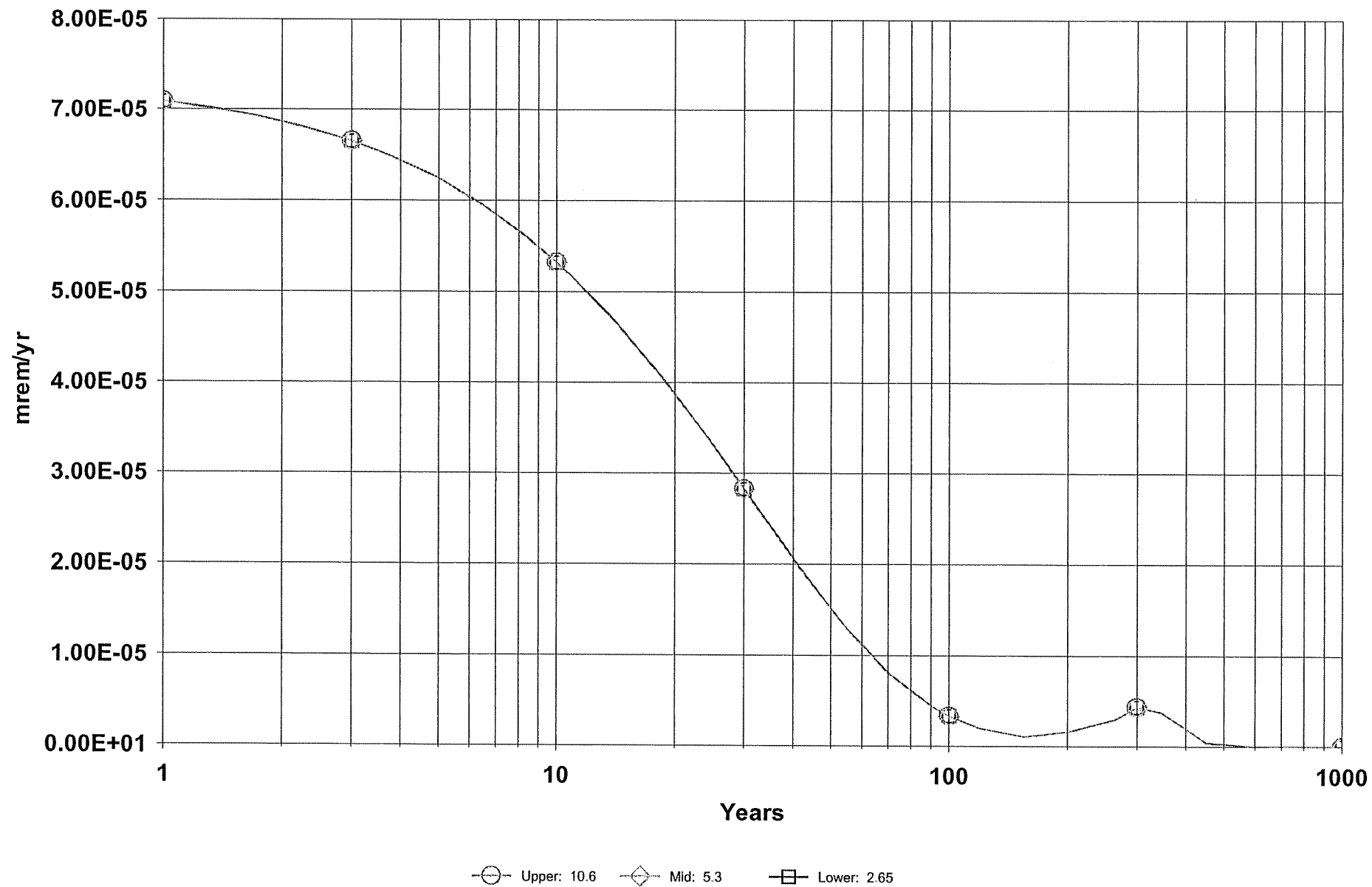
DOSE: All Nuclides Summed, All Pathways Summed With SA on Contaminated zone field capacity



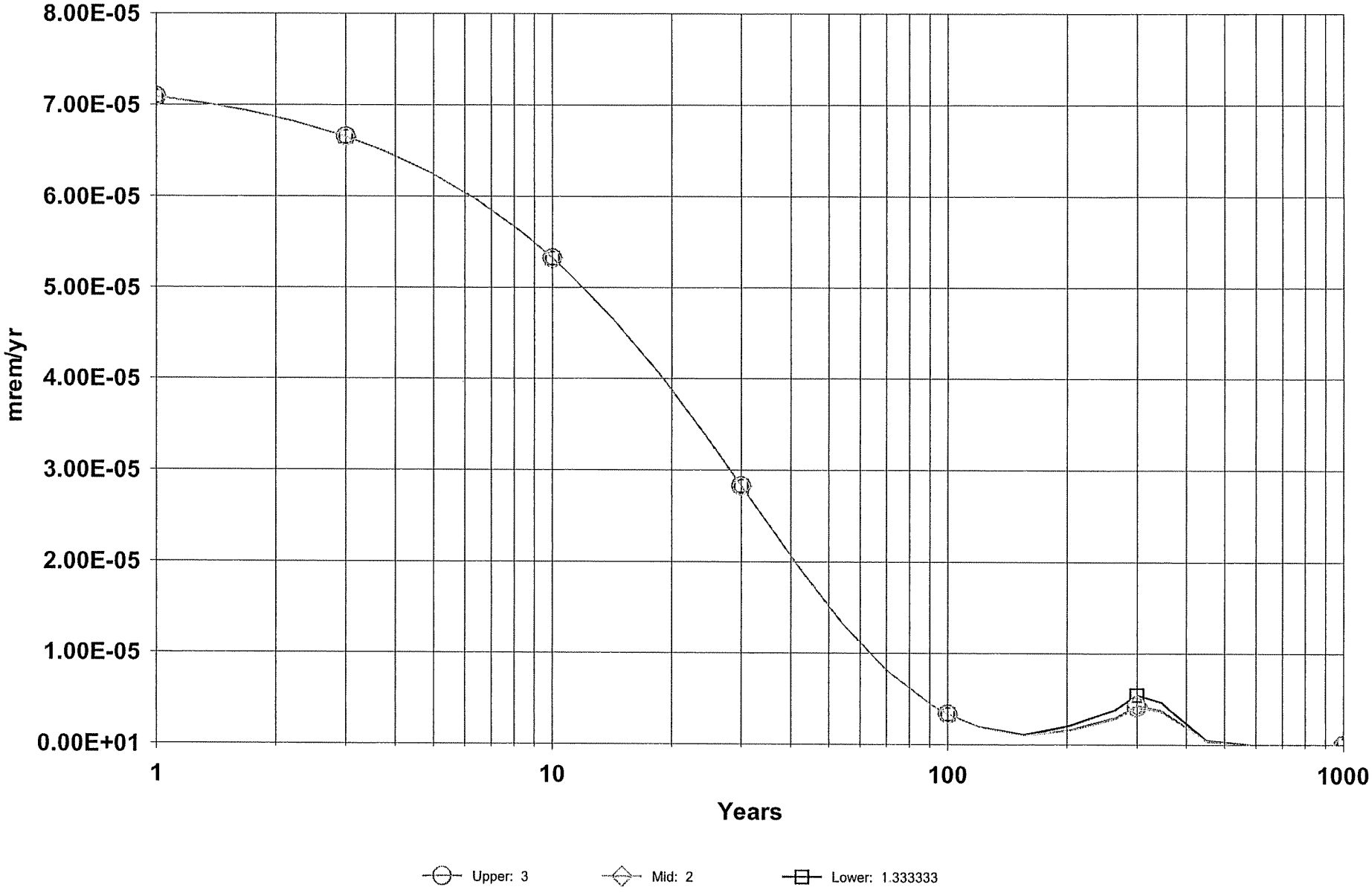
DOSE: All Nuclides Summed, All Pathways Summed With SA on Contaminated zone hydraulic conductivity



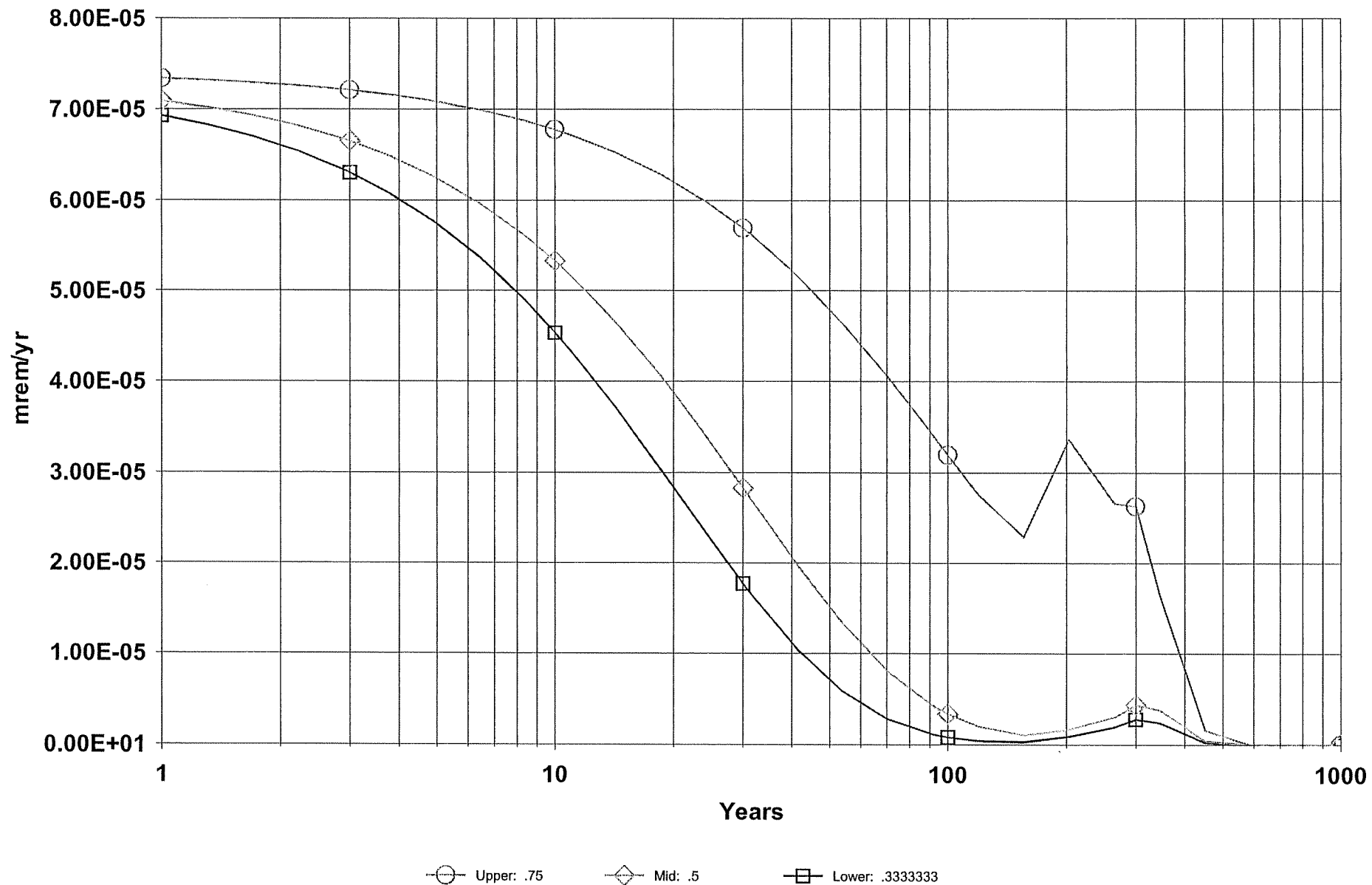
DOSE: All Nuclides Summed, All Pathways Summed With SA on Contaminated zone b parameter



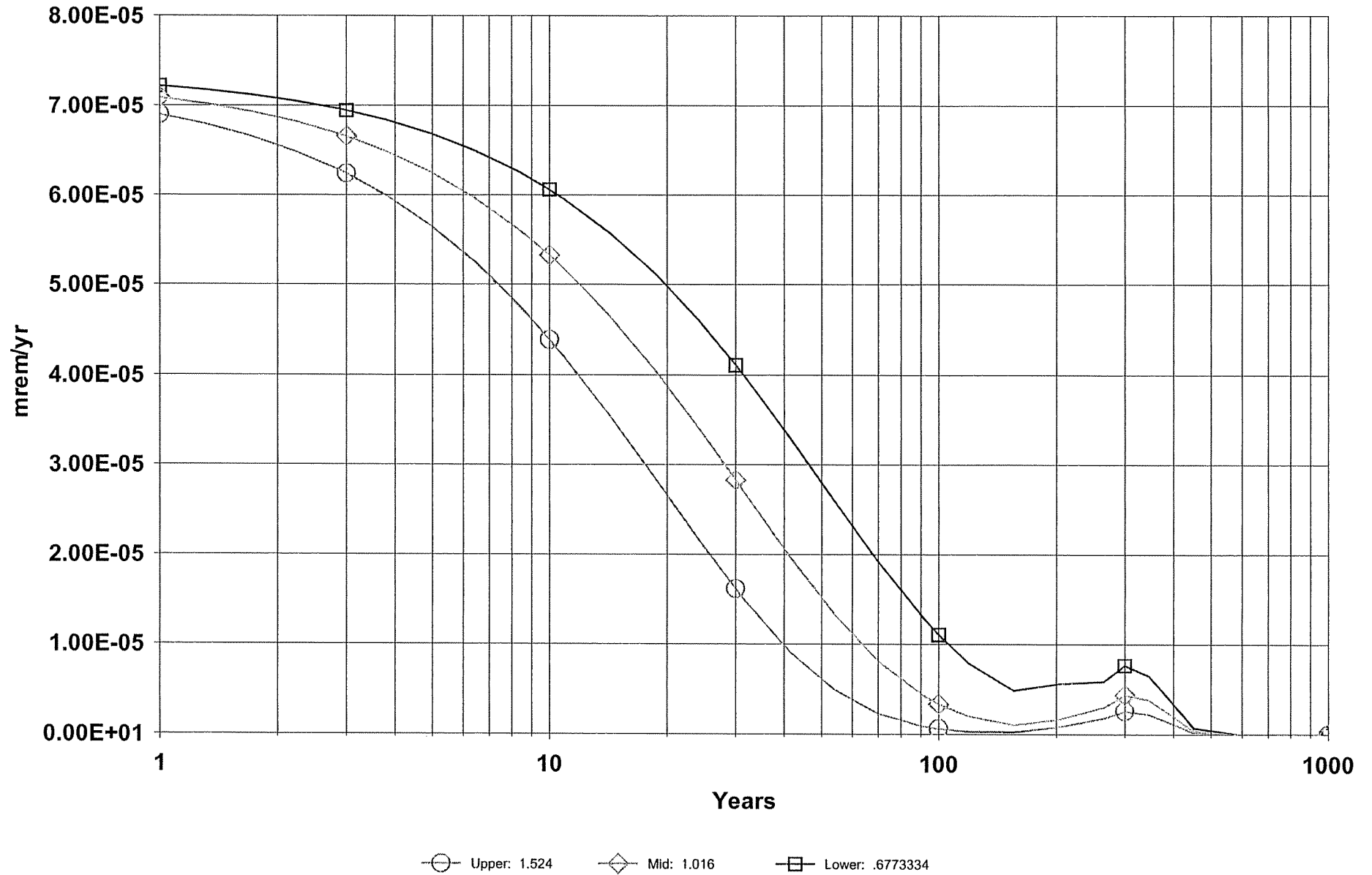
DOSE: All Nuclides Summed, All Pathways Summed With SA on Average annual wind speed



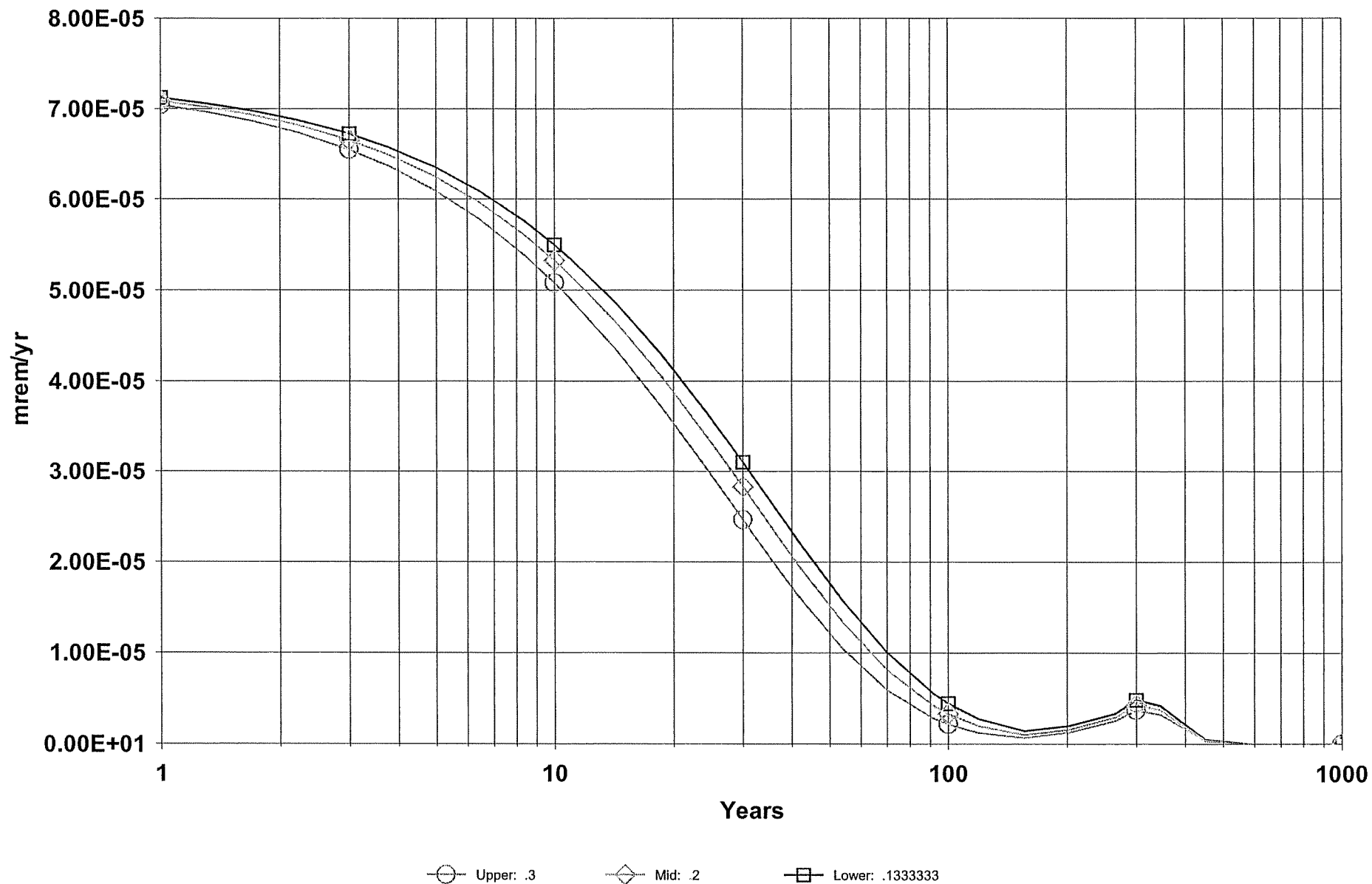
DOSE: All Nuclides Summed, All Pathways Summed With SA on Evapotranspiration coefficient



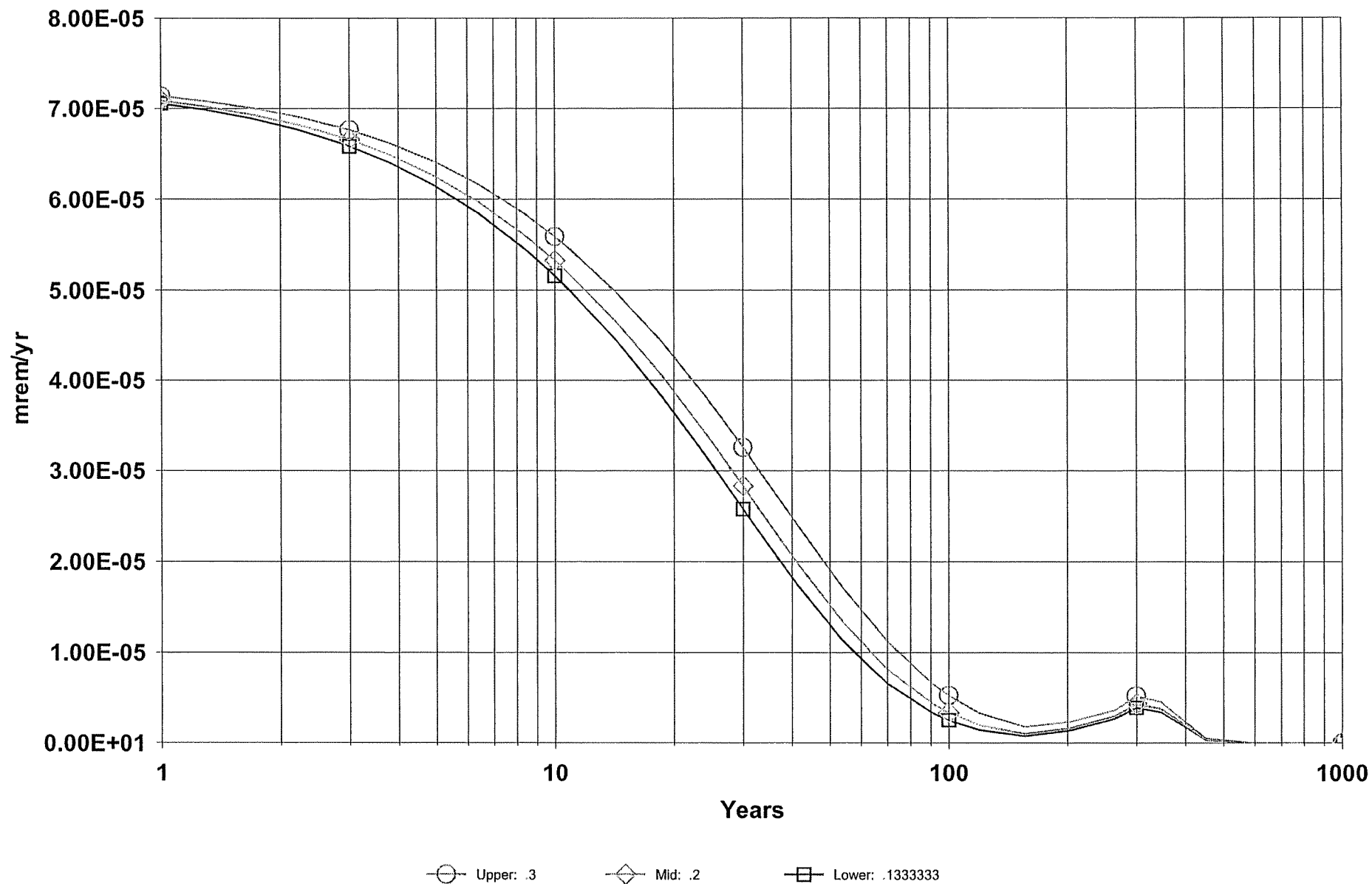
DOSE: All Nuclides Summed, All Pathways Summed With SA on Precipitation



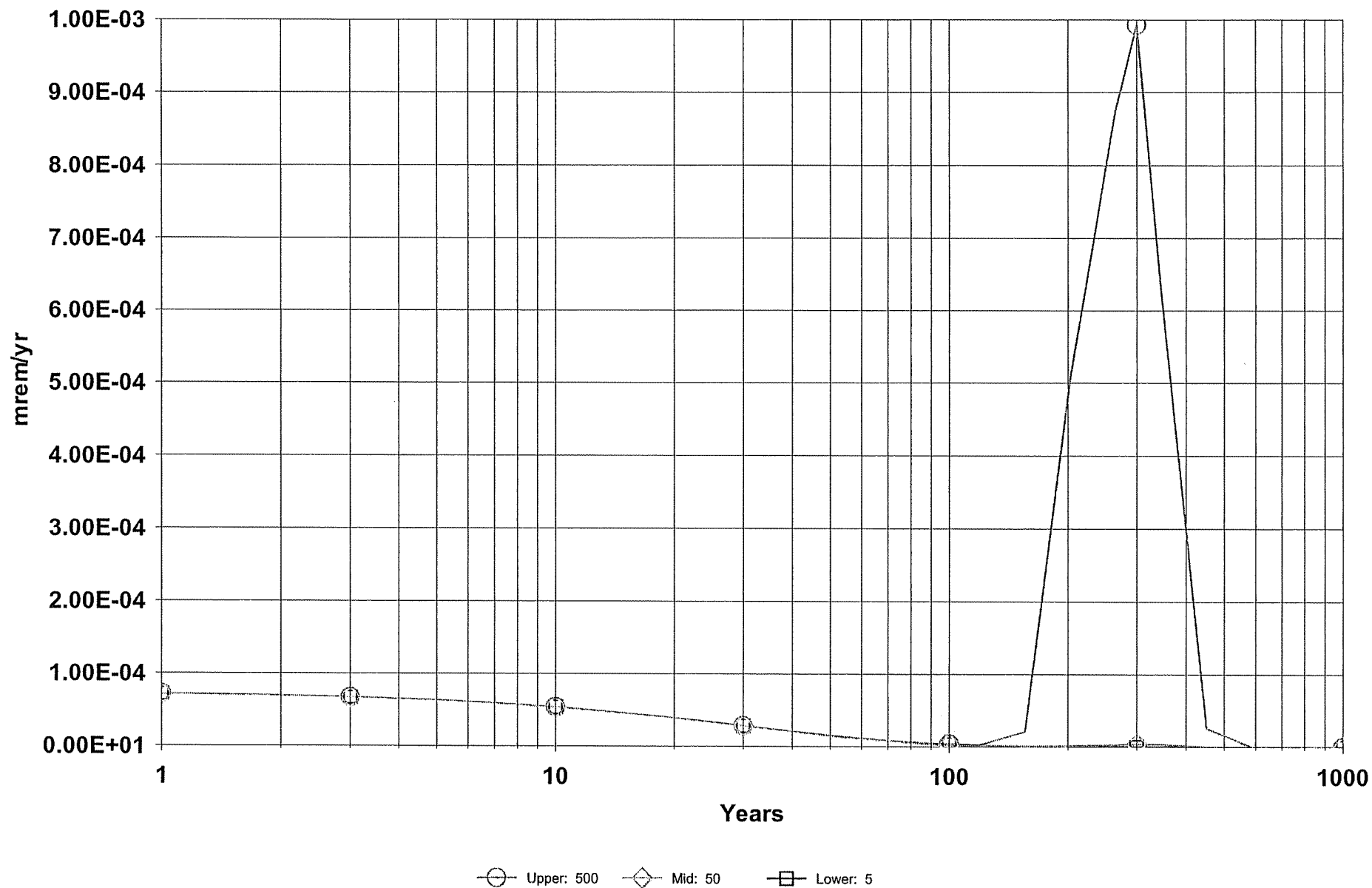
DOSE: All Nuclides Summed, All Pathways Summed With SA on Irrigation



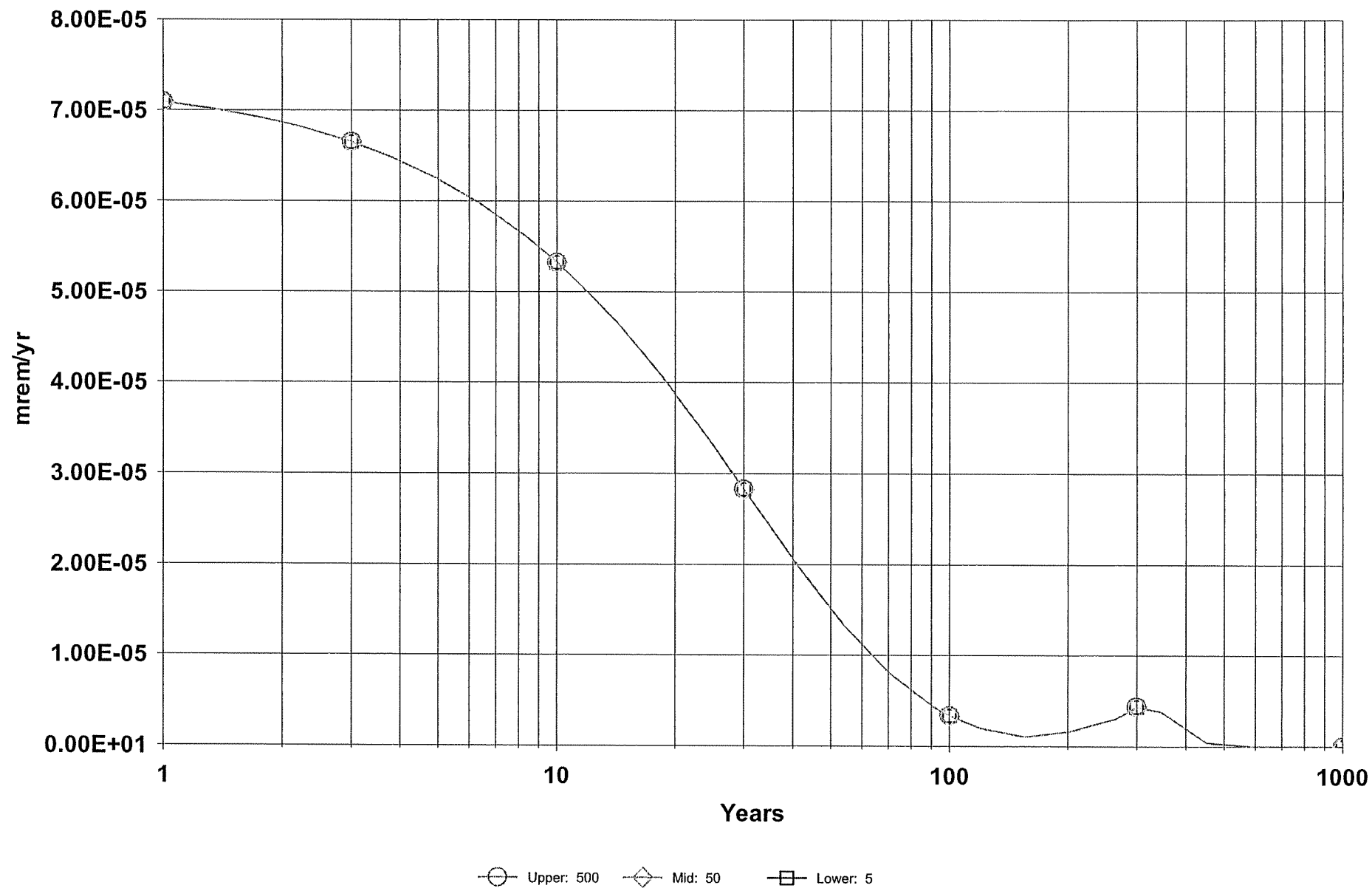
DOSE: All Nuclides Summed, All Pathways Summed With SA on Runoff coefficient



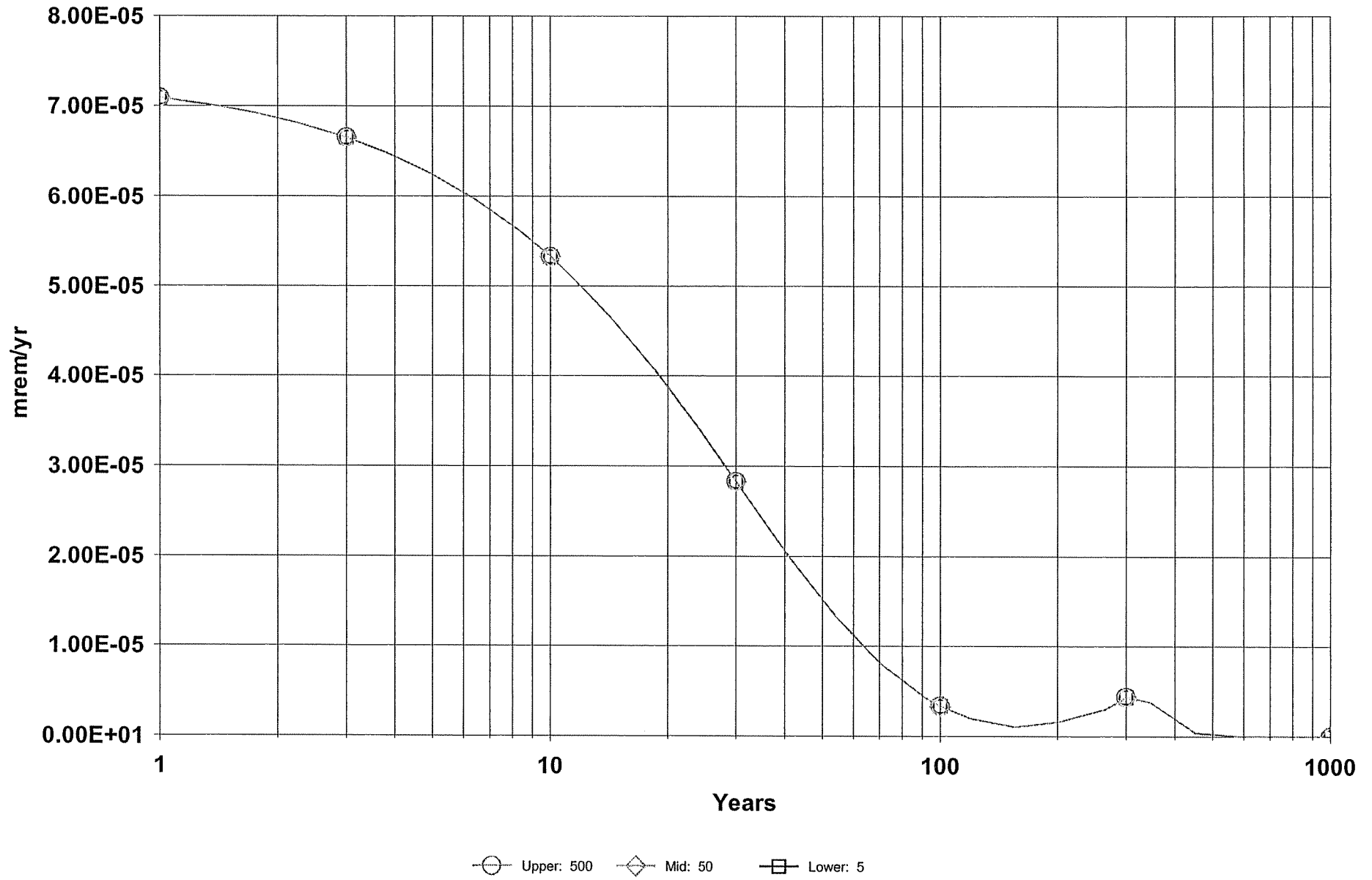
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-234 Contaminated Zone Distribution Coef.



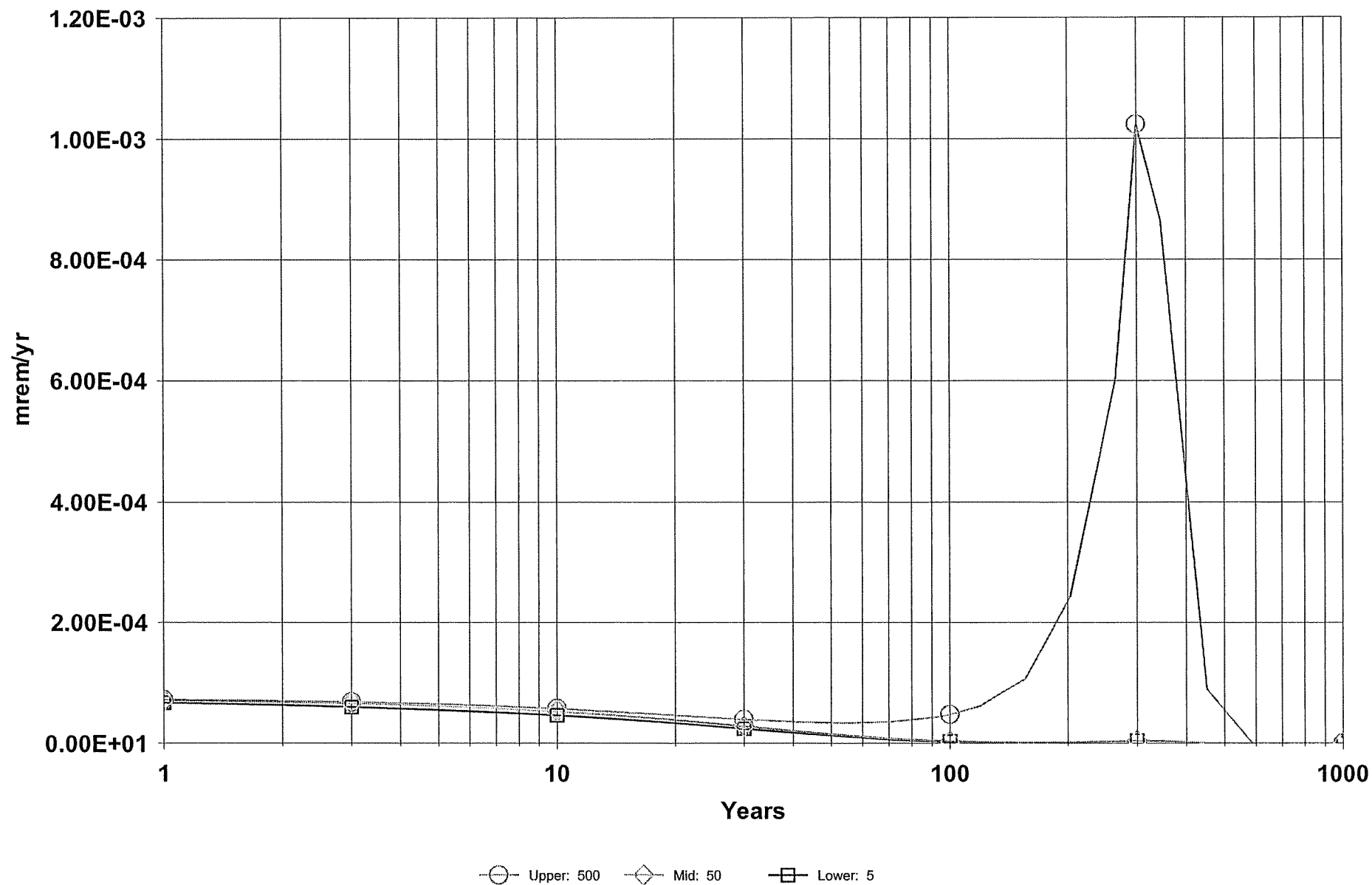
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-234 Unsaturated Zone Distribution Coef.



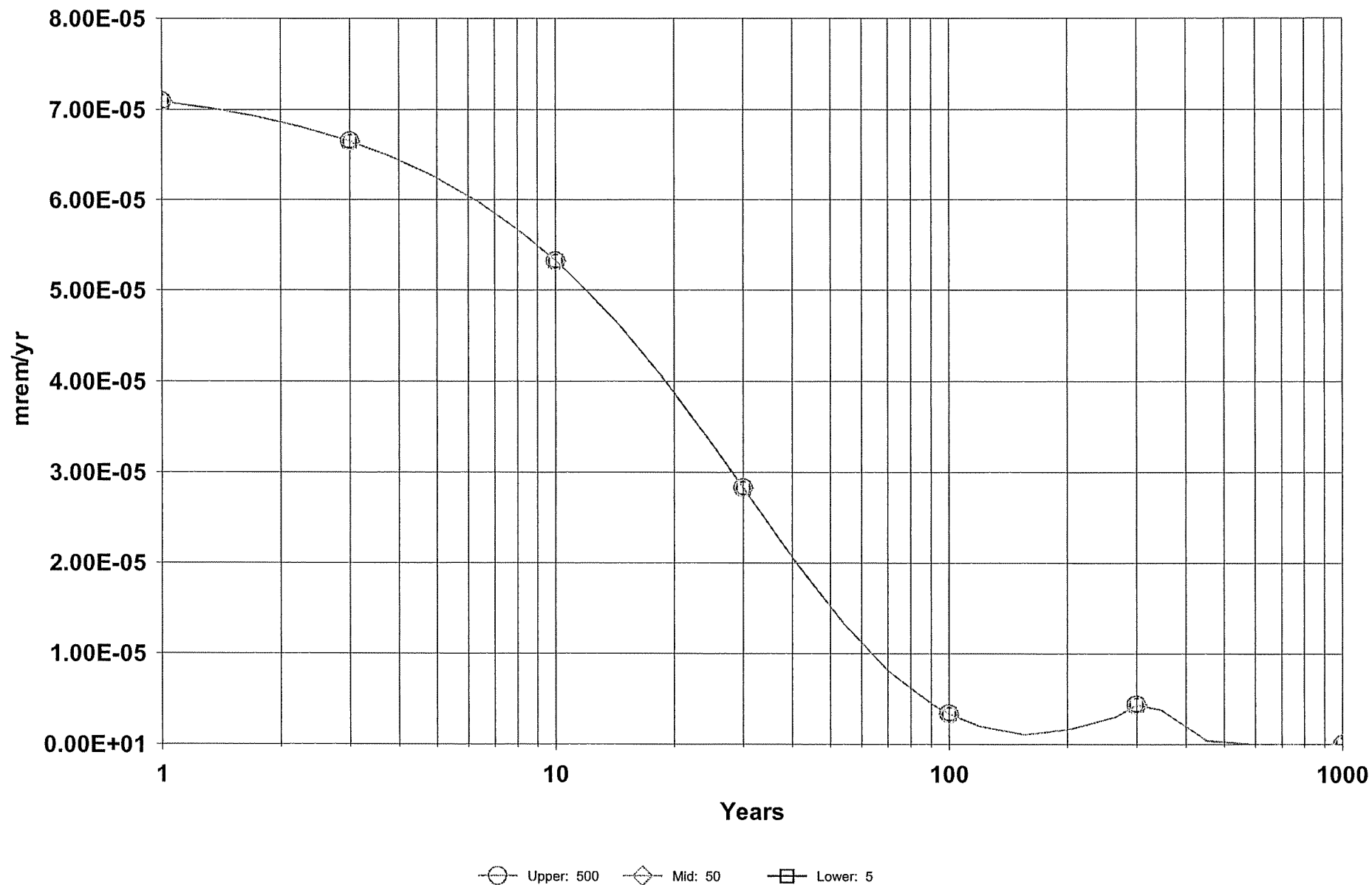
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-234 Saturated Zone Distribution Coef.



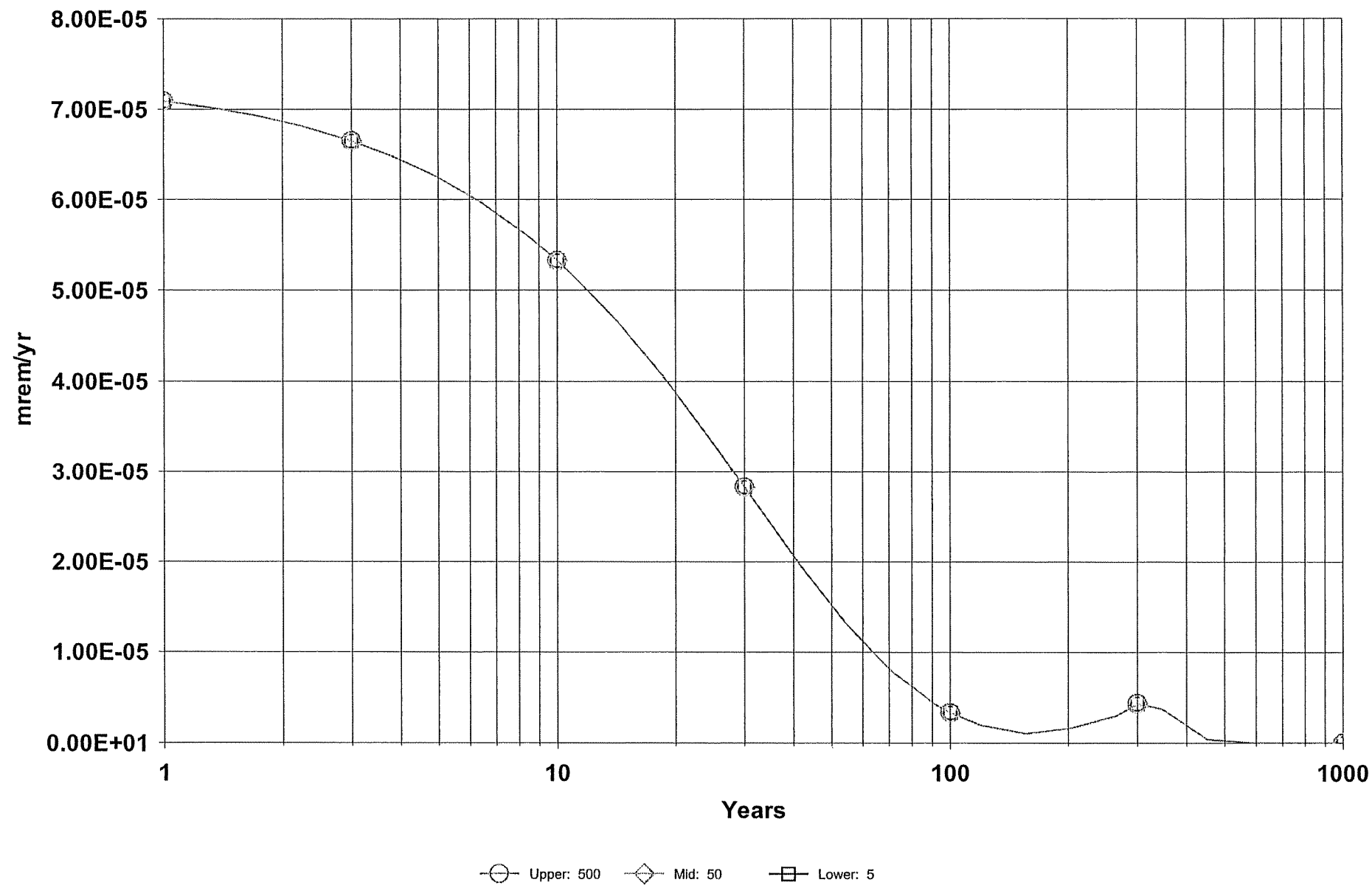
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-235 Contaminated Zone Distribution Coef.



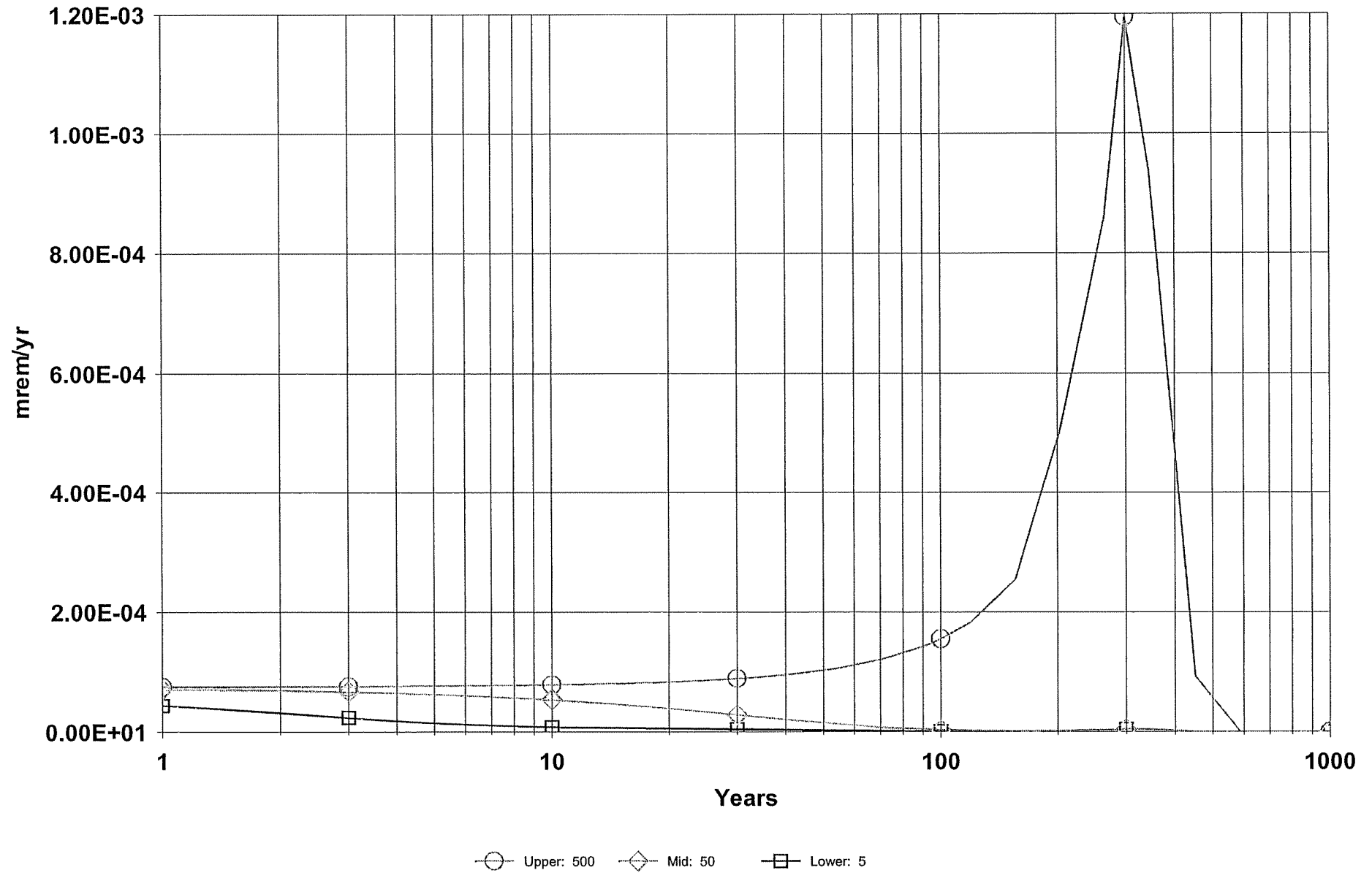
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-235 Unsaturated Zone Distribution Coef.



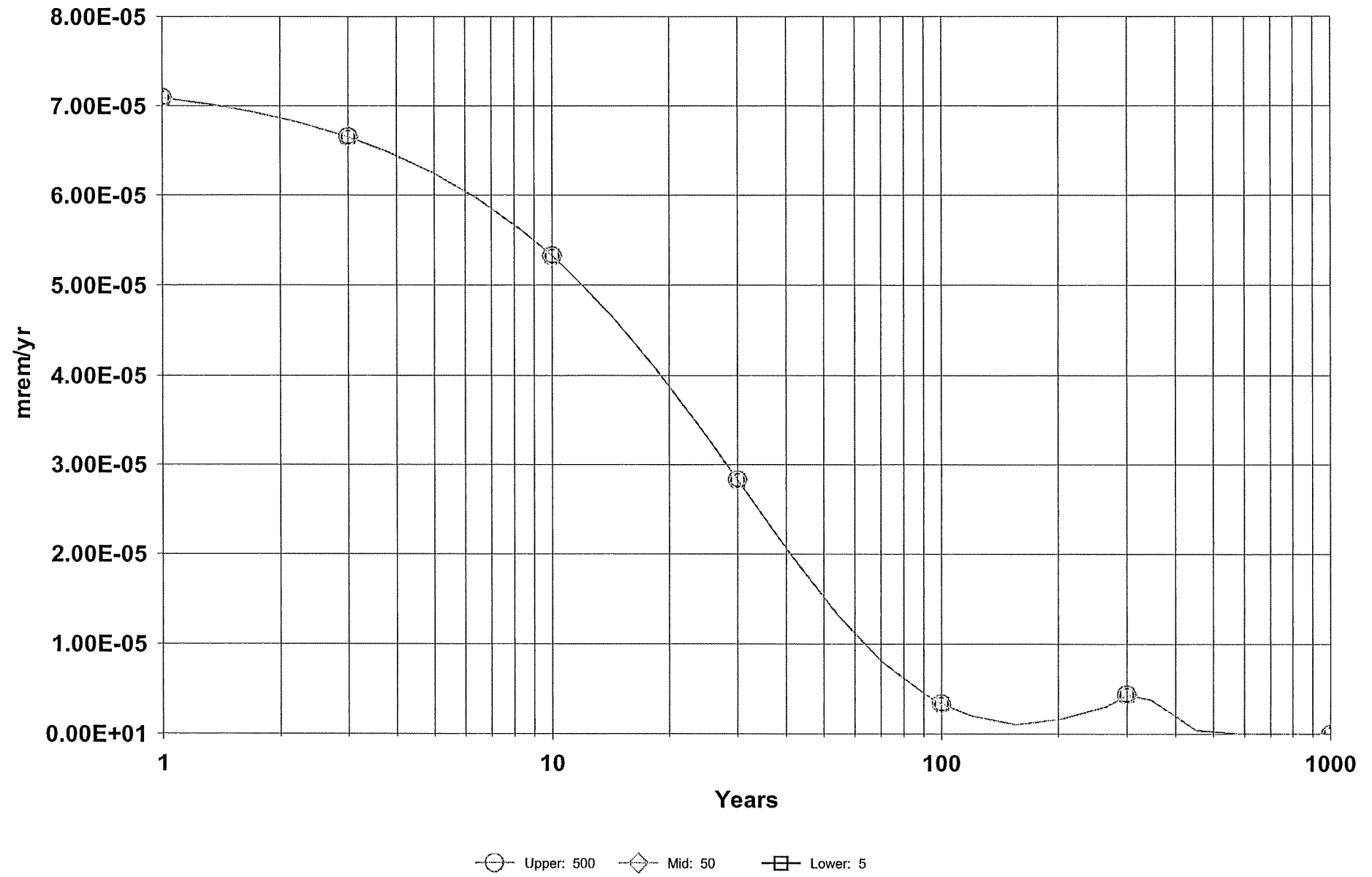
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-235 Saturated Zone Distribution Coef.



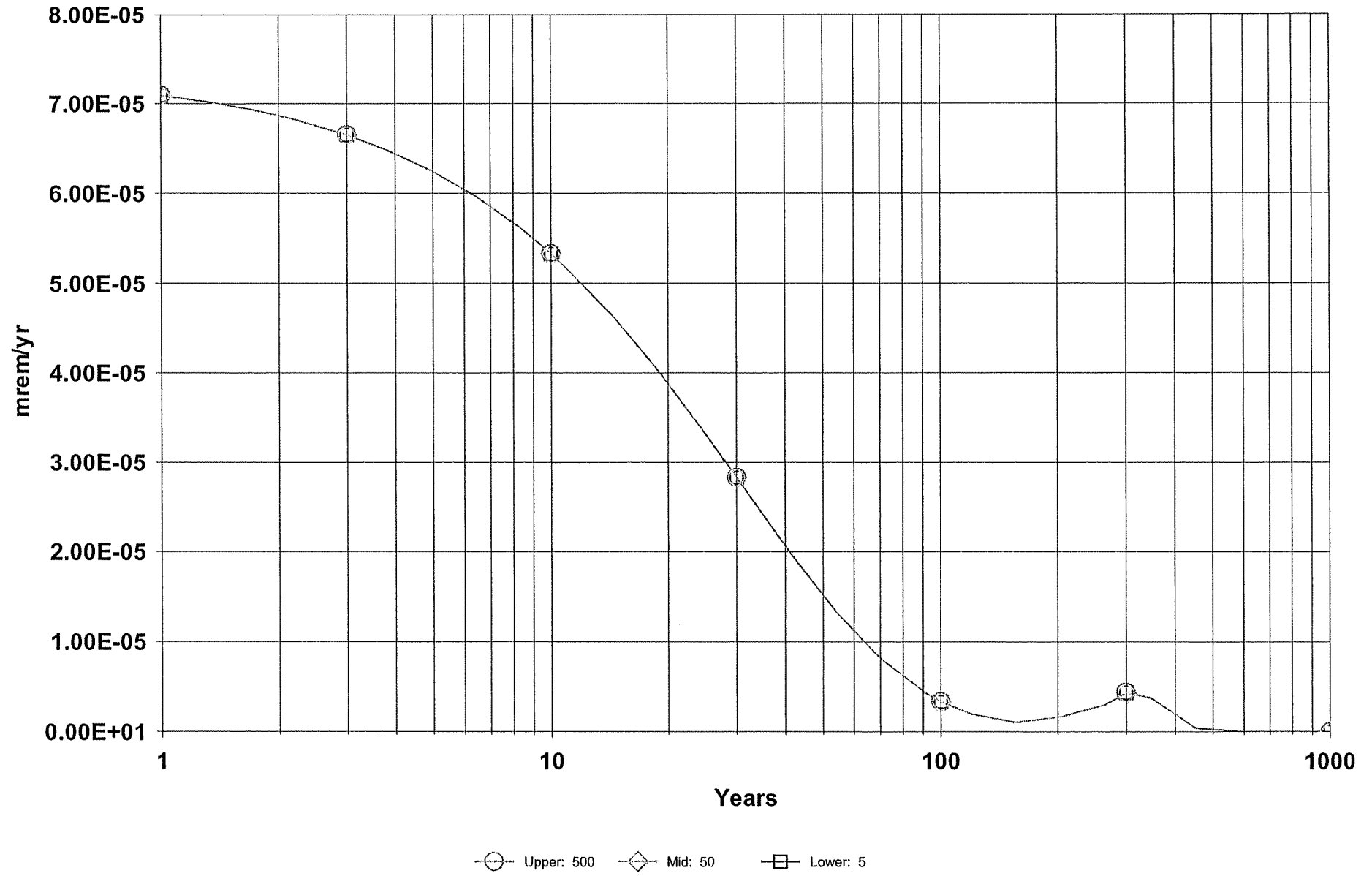
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-238 Contaminated Zone Distribution Coef.



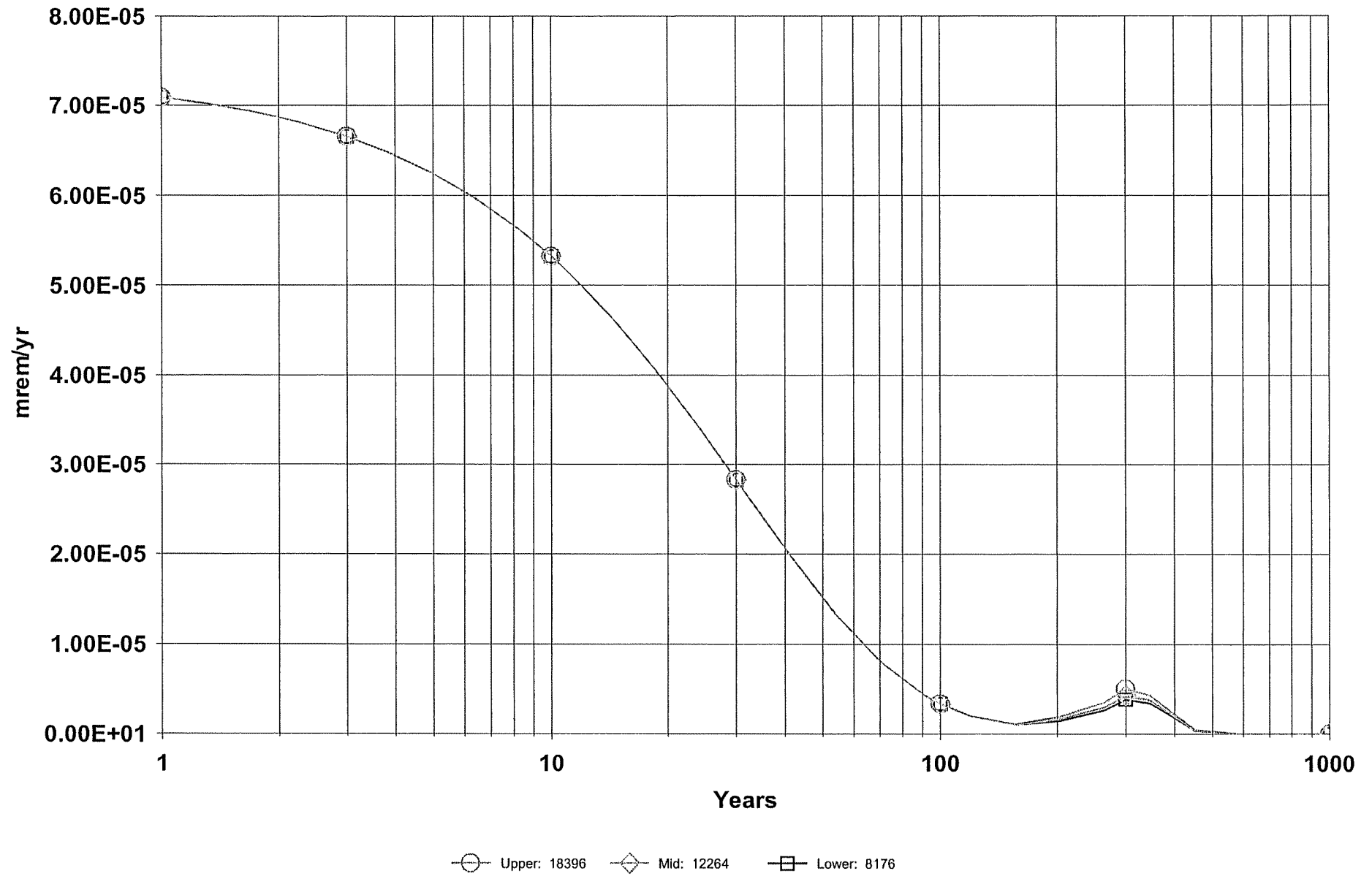
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-238 Unsaturated Zone Distribution Coef.



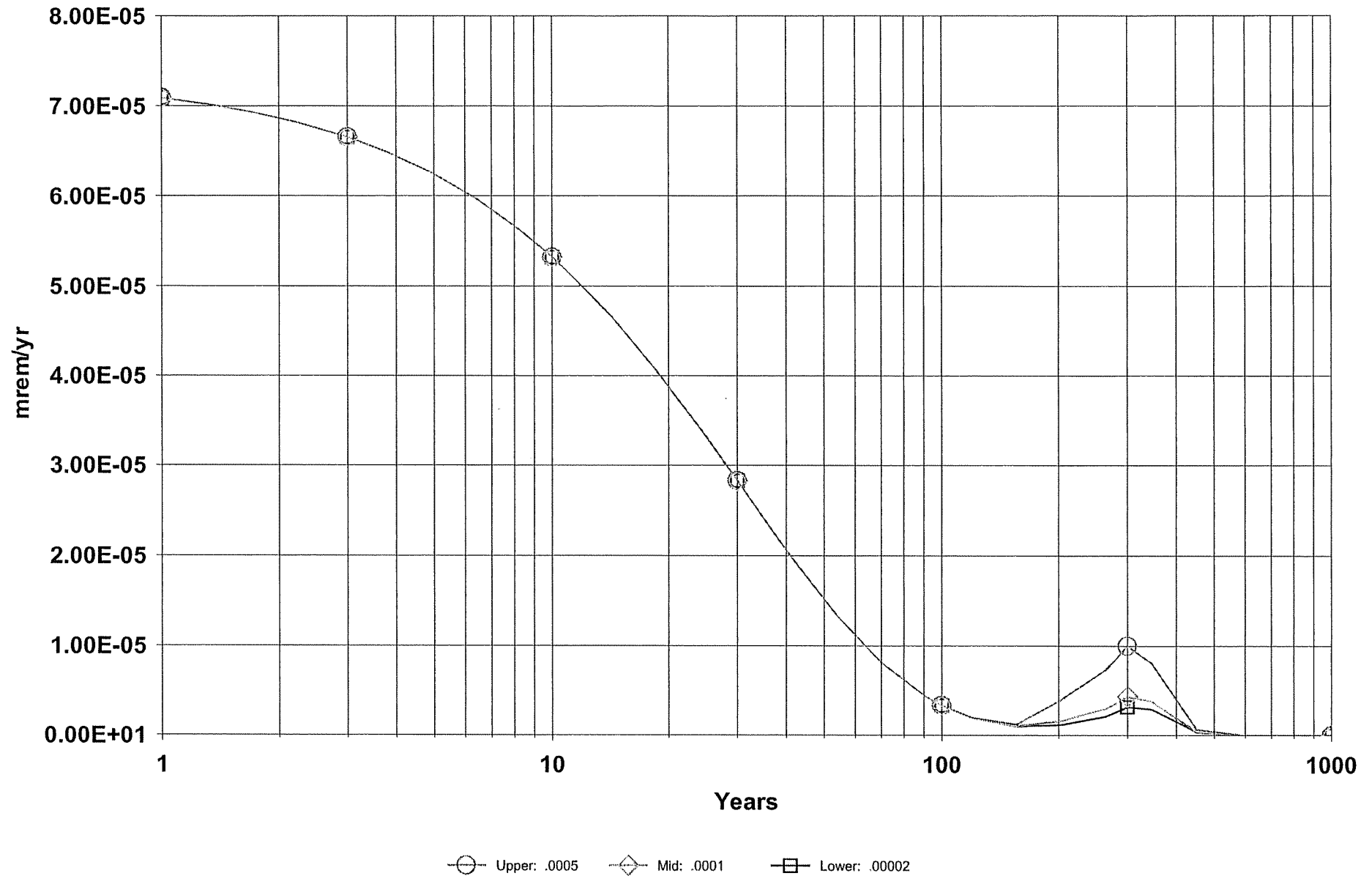
DOSE: All Nuclides Summed, All Pathways Summed With SA on U-238 Saturated Zone Distribution Coef.



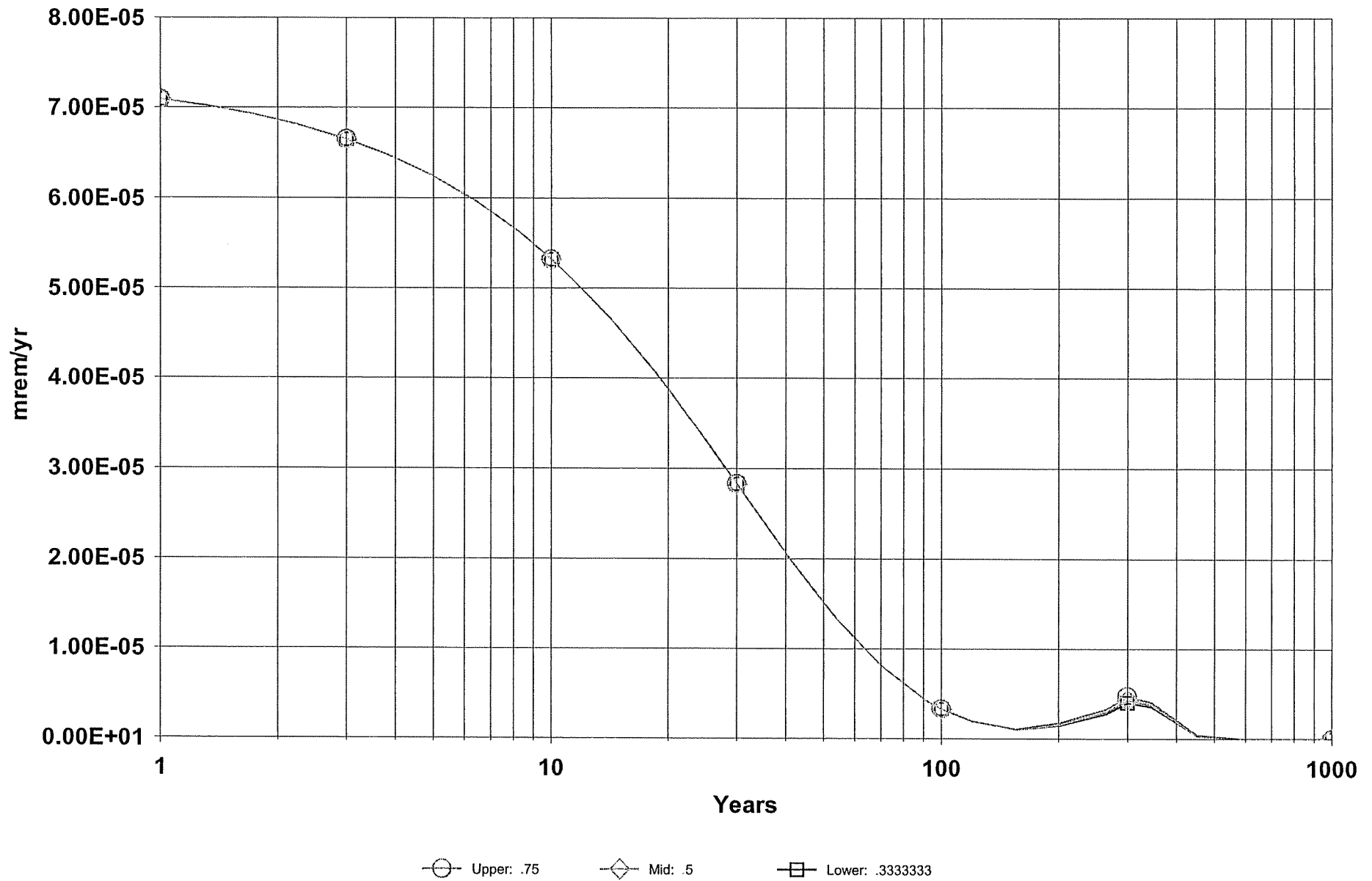
DOSE: All Nuclides Summed, All Pathways Summed With SA on Inhalation rate



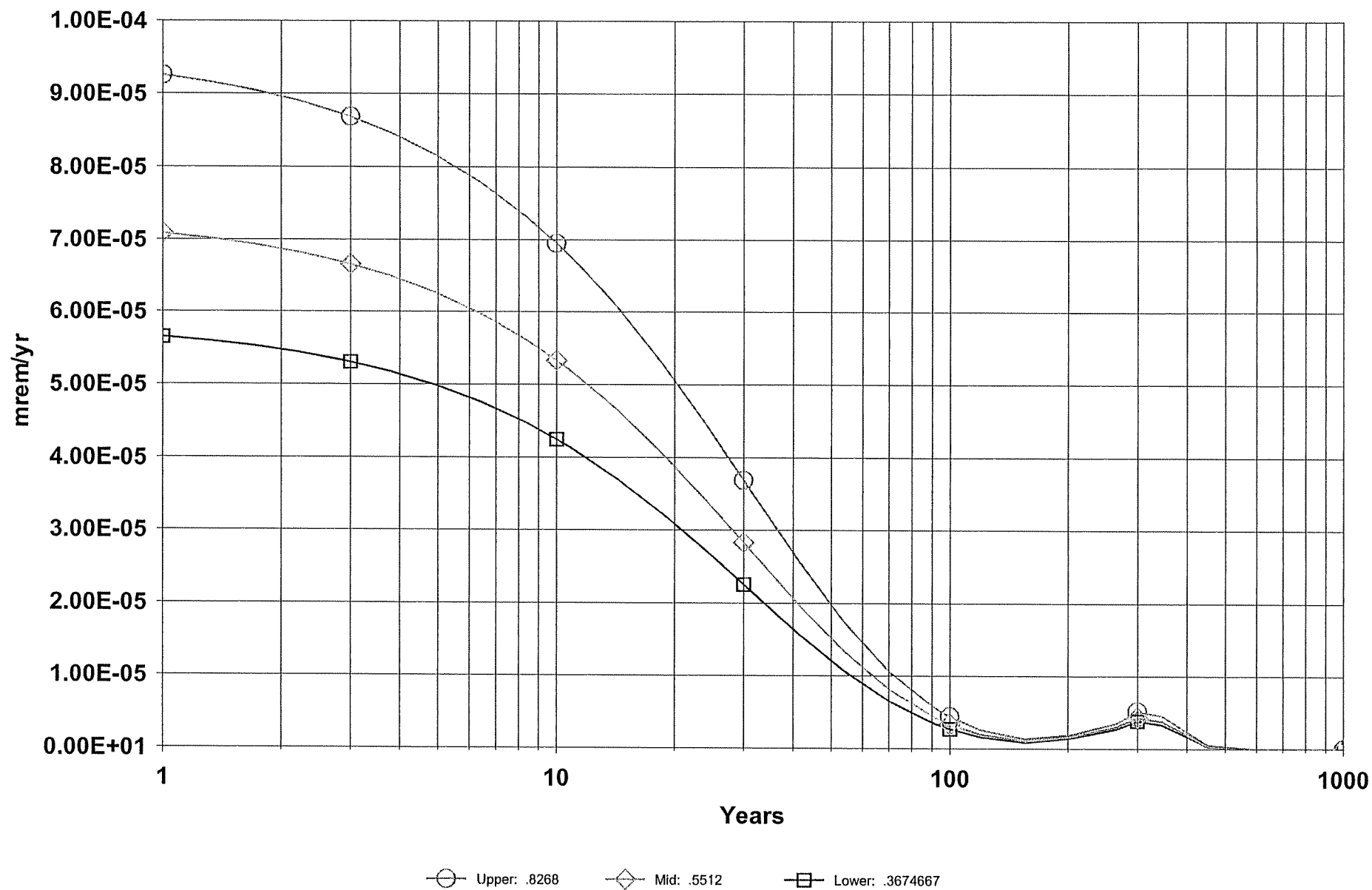
DOSE: All Nuclides Summed, All Pathways Summed With SA on Mass loading for inhalation



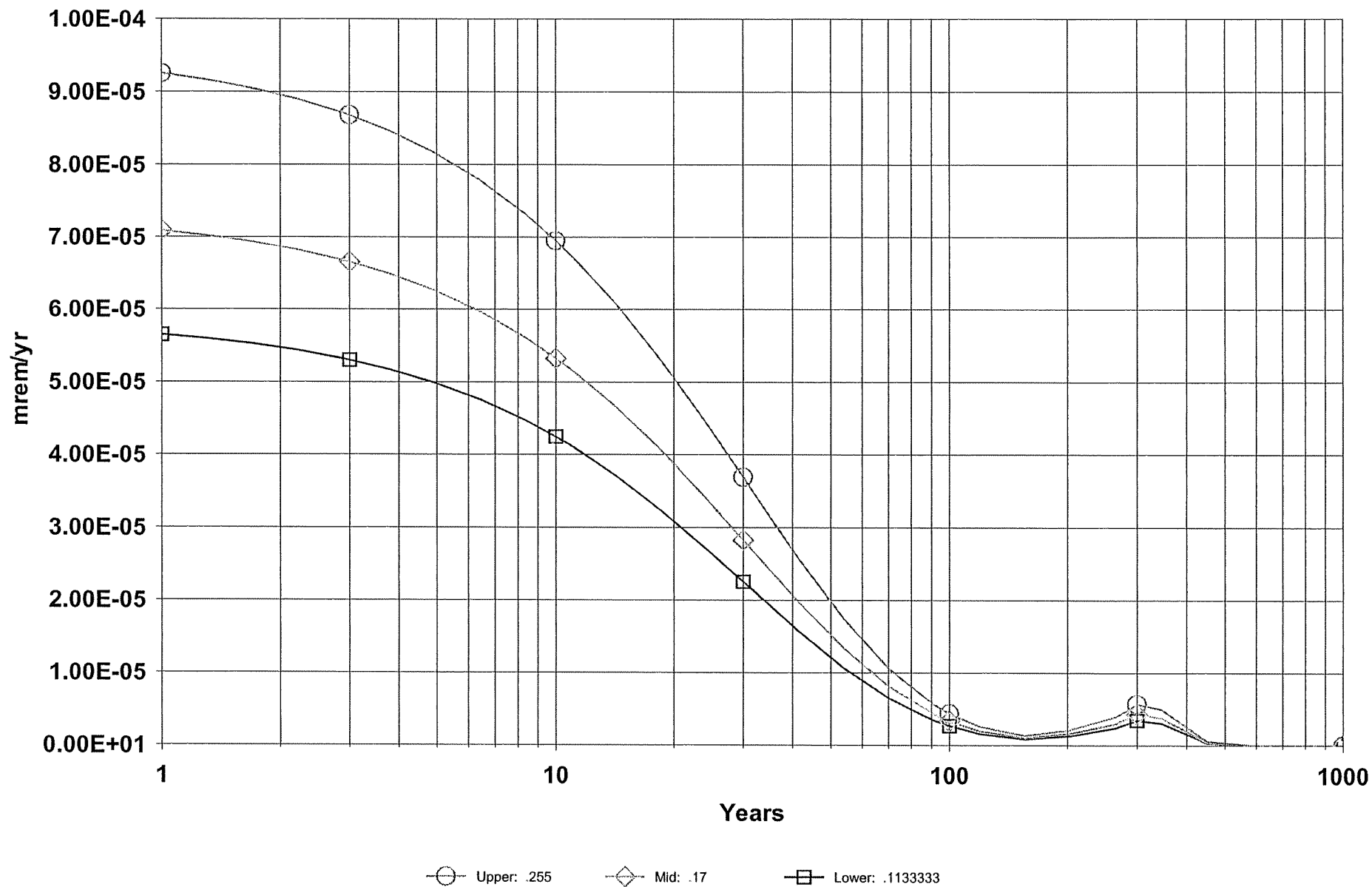
DOSE: All Nuclides Summed, All Pathways Summed With SA on Inhalation Shielding factor



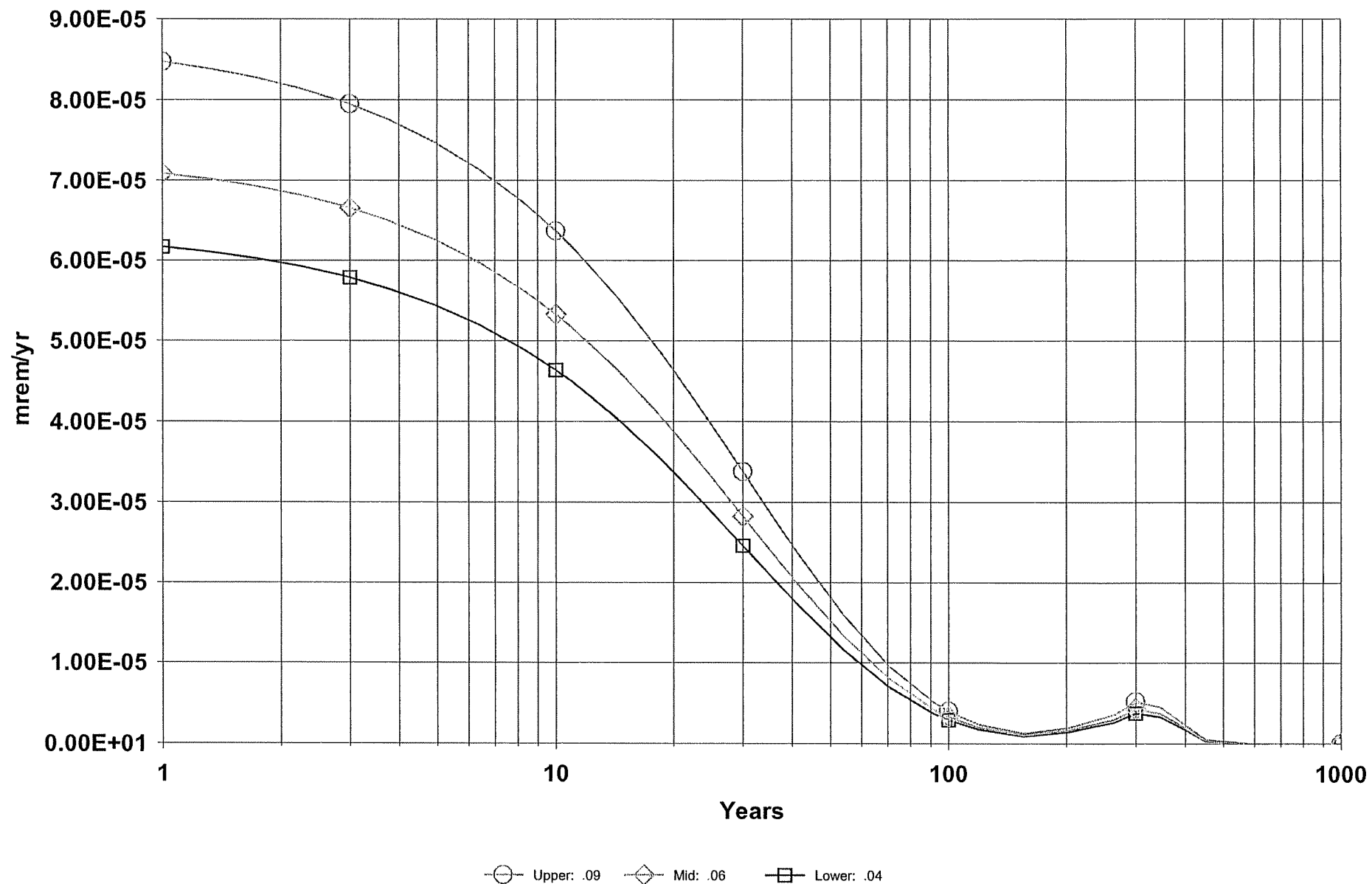
DOSE: All Nuclides Summed, All Pathways Summed With SA on External Gamma Shielding factor



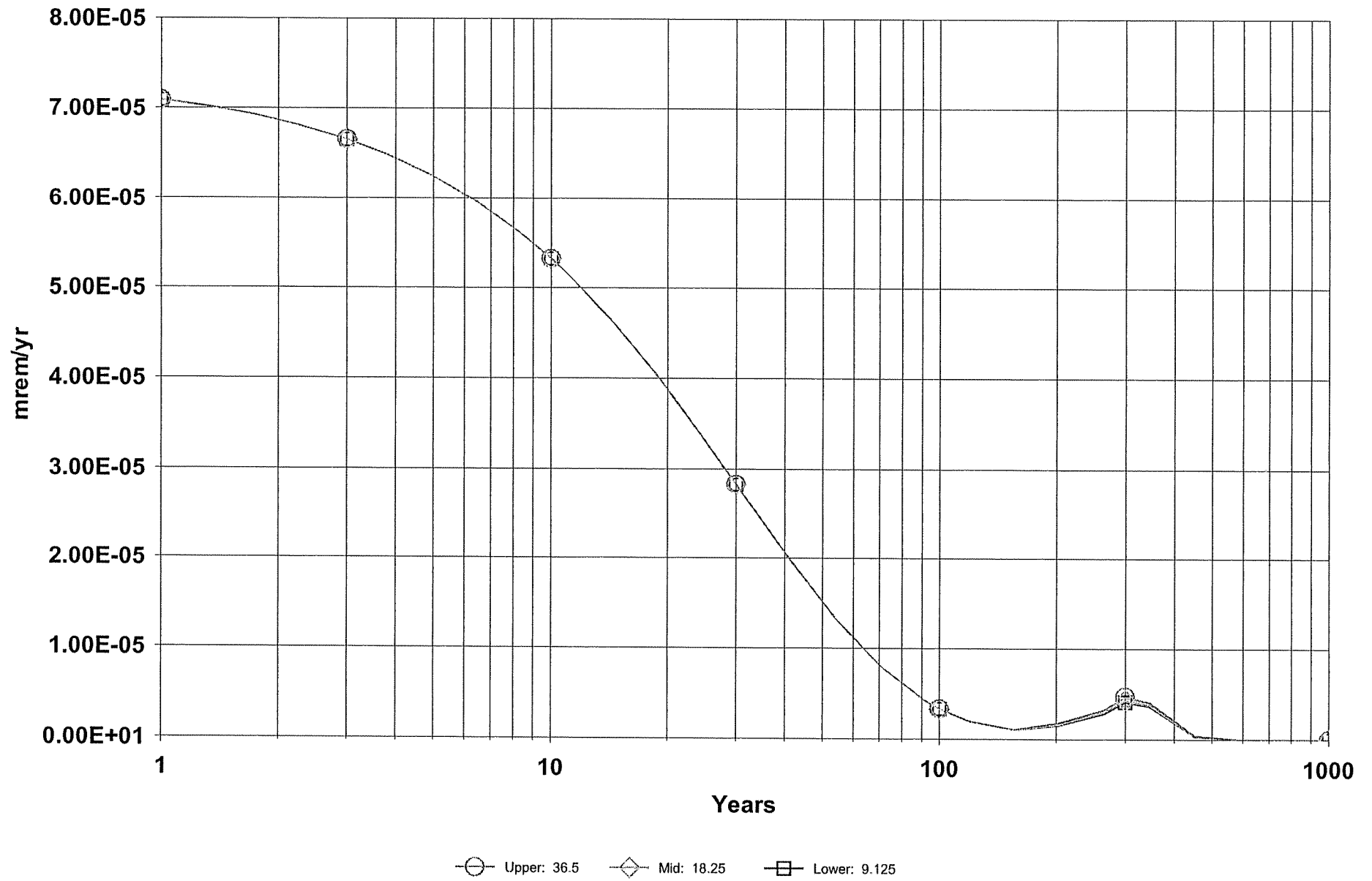
DOSE: All Nuclides Summed, All Pathways Summed With SA on Indoor Time fraction



DOSE: All Nuclides Summed, All Pathways Summed With SA on Outdoor Time fraction



DOSE: All Nuclides Summed, All Pathways Summed With SA on Soil ingestion



DOSE: All Nuclides Summed, All Pathways Summed With SA on Depth of soil mixing layer

