APPENDIX A

SUMMARY OF STUDIES INCLUDED IN THE EARTHWORM BIOACCUMULATION DATABASE

A. MODEL DATA

Reference: Andersen 1979
Analytes Considered: Pb and Cd
Species: *A. chlorotica, A. caliginosa, A. longa, A. rosea, and L. terrestris*
Geographic Location of Study: Denmark
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: nitric and perchloric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented: pH only
Purpose of Study: To evaluate the population parameters and uptake of metals by earthworms in areas treated with municipal sewage sludge
Study Conclusions: Uptake of lead appears to be related to Ca content of soil.

Reference: Andersen and Laursen 1982
Analytes Considered: Ca, Cd, Fe, Pb, Mn, and Zn
Species: *Lumbricus terrestris* and *Aporrectodea longa*
Geographic Location of Study: Denmark
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: atomic absorption/ x-ray fluorescence
Soil Extraction Method**:** nitric/perchloric acid digestions
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : no
Purpose of Study: To evaluate heavy metal accumulation and distribution throughout earthworm body
Study Conclusions: Pb and Cd accumulate in the gut wall and are then transferred to the waste nodules. In *L. terrestris* more Pb than Cd was transferred to waste nodules. Large amounts of Zn also accumulated in the gut wall. In *L. terrestris* the calciferous glands play a large role in regulation and excretion of heavy metals.

Reference: Beyer et al. 1982
Analytes Considered: Pb, Cd, Cu, Ni, and Zn
Species: not stated
Geographic Location of Study: Pennsylvania
Exposure Duration: Resident
Worms Depurated: yes (mostly - authors estimate that ~75% soil removed from gut)
Analytical Method: AA spectroscopy
Soil Extraction Method: nitric/hydrochloric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : pH, CEC and %OM
Purpose of Study: To evaluate the uptake of metals by earthworms in soils treated with sewage sludge
Study Conclusions: Earthworms concentration Cd and Zn relative to soil, but not Cu, Pb, or Ni. High Zn concentrations in soil were negatively correlated with Cd concentrations in earthworms.

Reference: Beyer et al. 1985
Analytes Considered: Pb, Cd, Cu, and Zn
Species: *Dendrobaena rubida and Eisenoides carolinensis*
Geographic Location of Study: Pennsylvania
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : pH, %OM and CEC
Purpose of Study: To evaluate the uptake and transfer of metals by biota in the vicinity of two zinc smelters.
Study Conclusions: Metals are accumulated to higher levels by biota nearer the smelters.

Reference: Beyer and Cromartie 1987
Analytes Considered: Pb, Cu, Zn, Cd, Cr, As, and Se
Species: mixed
Geographic Location of Study: Maryland, Pennsylvania, and Virginia
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: Atomic absorption
Soil Extraction Method: Concentrated HCl and HNO_3
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : yes
Purpose of Study: To determine how concentrations in earthworms compared to that in soils from diverse sites.
Study Conclusions: Correlations between concentrations in soil and those in worms were low. the authors suggest that if worms are to be used as indicators of contamination, it is important to identify worm species, report soil characteristics, and collect similar worms from similar but uncontaminated locations.

Reference: Bull et al. 1977
Analytes Considered: mercury
Species: *Lumbricus terrestris*
Geographic Location of Study: Great Britain
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: nitric./perchloric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : no
Purpose of Study: To evaluate the uptake and transfer of mercury in the foodweb near a chlor-alkali plant.
Study Conclusions: Mercury was found at higher levels in worms near the plant. Methyl mercury concentrations in worms varied from 8-13%.

Reference: Carter 1983
Analytes Considered: Cd, Cu, and Zn
Species: *A. chlorotica and L. rubellus*
Geographic Location of Study: British Columbia
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: nitric/hydrochloric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : pH only
Purpose of Study: To evaluate the uptake and transfer of metals through a pasture food web.
Study Conclusions: Cd was concentrated by earthworms, invertebrate predators and herbivorous slugs over that in their foods. Millipedes concentrated Cu and Zn but not Cd.

Reference: Corp and Morgan 1991
Analytes Considered: Cd, Cu, Pb, and Zn
Species: *Lumbricus rubellus*
Geographic Location of Study: Great Britain
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectrometry
Soil Extraction Method: HNO_3 digestion
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : only pH
Purpose of Study: compare patterns of metal accumulation in field collected earthworms at 9 contaminated field sites to that in "clean" worms added to soil from the sites. Only data from field collected worms were used in development of uptake factor in this report.
Study Conclusions: 1) Pb, Zn, and Cd concentrations were higher in field collected worms than in laboratory worms; 2) the relationship between tissue and soil metal concentrations were similar between the 2 groups of worms; and 3) high soil organic matter reduced Pb bioavailability while low pH increased bioavailability.

Reference: Czarnowska and Jopkiewicz 1978
Analytes Considered: Cd, Cu, Pb, and Zn
Species: *Lumbricus terrestris*
Geographic Location of Study: Warsaw, Poland
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: concentrated acid digestion
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : pH, % OM
Purpose of Study: To study the uptake heavy metals in worms at increasing distances from Warsaw streets.
Study Conclusions: Earthworms accumulated all four metals, Cd in particular.

Reference: Diercxsens et al. 1985
Analytes Considered: PCBs and Cd, Cr, Cu, Pb, and Zn
Species: not stated
Geographic Location of Study: Germany
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method:
Soil Extraction Method: aqua regia digestion
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : pH only
Purpose of Study: to study metal accumulation in earthworms at a nature reserve and at site treated with sewage sludge. Earthworm concentrations reported as wet weight. Dry weight concentrations estimated assuming 84% water content (EPA 1993).
Study Conclusions: PCB concentrations in worm tissue and gut contents were greater than that in soil. Congener profiles in worm tissue and soil differed. Cd and Zn were also found to be accumulated.

Reference: ERT 1987
Analytes Considered: 2,3,7,8 TCDD and 2,3,7,8 TCDF
Species: not stated
Geographic Location of Study: Wisconsin
Exposure Duration: Resident
Worms Depurated: no
Analytical Method: Mass spectroscopy
Soil Extraction Method:
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : none
Purpose of Study: To evaluate the uptake of TCDD by earthworms in forests treated with paper mill sludge.
Study Conclusions: Earthworm abundance was greater in sludge treated plots than in untreated plots. In treated plots, TCDD was accumulated to levels 3.3 times (on average) greater than that in soil.

Reference: Fischer and Koszorus 1992
Analytes Considered: As, Hg, and Se
Species: *Eisnia fetida*
Geographic Location of Study: Laboratory
Exposure Duration: 8 weeks
Worms Depurated: yes
Analytical Method: x-ray spectrometry
Soil Extraction Method: not stated
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : no
Purpose of Study: To evaluate sublethal effects, uptake and elimination of contaminants by earthworms.
Study Conclusions**:** In general, accumulation rates decreased as soil concentrations increased.

Reference: Gish and Christensen 1973
Analytes Considered: Cd, Ni, Pb, and Zn
Species: mixed species - not differentiated
Geographic Location of Study: Maryland, near Washington DC
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectrometry
Soil Extraction Method: HCl digestion
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : yes
Purpose of Study: To determine earthworms near roads are accumulating heavy metals
Study Conclusions: Metal accumulations were higher where traffic volume was greatest. Metal residues in soils were positively correlated to soil organic matter. Accumulations of Pb and Zn were sufficiently high to be potentially toxic to worm predators.

Reference: Helmke et al. 1979
Analytes Considered: 29 elements
Species: *Aporrectodea tuberculata*
Geographic Location of Study: Wisconsin
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: Neutron Activation
Soil Extraction Method: not stated
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : range of pHs in soil only
Purpose of Study: To evaluate the uptake of contaminants by earthworms in sewage sludge amended soils.
Study Conclusions: Concentrations of Cd, Cu, and Zn increase with increasing sludge application rate while Se decreased. Cd appeared to be readily accumulated. Concentrations of Hg and Cr in casts increased with increasing soil concentration while tissue concentrations did not, suggesting that these elements were not bioavailable.

Reference: Ireland 1979
Analytes Considered: Ca, Cd, Cu, Pb, Mn, and Zn
Species: *Lumbricus rubellus, Dendobaena veneta,* and *Eiseniella tetraedra*
Geographic Location of Study: Great Britain
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectrometry
Soil Extraction Method: HNO_3 digestion
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented :none
Purpose of Study: to study metal accumulation in earthworms at metal contaminated sites
Study Conclusions: *Lumbricus rubellus* accumulated and retained Pb. Cu, Zn, and Mn appeared to be regulated by the worms irrespective of soil concentrations.

Reference: Kreis et al. 1987
Analytes Considered: PCBs
Species: *Nicodrilus*
Geographic Location of Study: Switzerland
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: GC
Soil Extraction Method:
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented :
Purpose of Study: to evaluate PCB uptake at sites treated with sewage sludge.

Reference: Ma 1987
Analytes Considered: Cd, Cu, Pb, and Zn
Species: *Lumbricus rubellus*
Geographic Location of Study: Netherlands
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: HCl digestion
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : pH, CEC, % OM
Purpose of Study: To study the uptake and transfer of heavy metals from soil through earthworms to moles.
Study Conclusions: Accumulated levels in earthworms and moles do not consistently reflect metals levels in soil. In acidic, sandy soils, Cd may accumulate in worms and critical levels to moles may be exceeded even when the soil levels are relatively low. Pb is also more readily accumulated by worms and moles associated with acidic soils than limed soils. There is no evidence to suggest that Cd, Pb, or Zn have any influence on Cu tissue levels in either worms or moles.

Reference: Martinucci et al. 1983
Analytes Considered: 2,3,7,8 - TCDD
Species: *A. rosea and A. caliginosa*
Geographic Location of Study: Seveso, Italy
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method:
Soil Extraction Method: not stated
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : no
Purpose of Study: To evaluate the uptake of TCDD by earthworms
Study Conclusions: Earthworms accumulated TCDD to levels 14.5 times (on average) than that in soil. No inter-species differences in accumulation were observed. Earthworm activity may serve to bring TCDD back to the soil surface. Tissue levels generally do not appear to be toxic to the worms.

Reference: Morgan and Morgan 1991
Analytes Considered: Ca, Cd, Pb, and Zn
Species: *Lumbricus rubellus*
Dendrodrilus rubidus
Geographic Location of Study: Great Britain (England and Wales)
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: Atomic absorption
Soil Extraction Method: Concentrated HNO_3
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : no
Purpose of Study: To determine if there are interspecies differences in accumulation in two sympatric, ecologically similar species at 10 different locations.
Study Conclusions: *L. rubellus* contained higher Zn and Ca and lower Pb and Cd than *D. rubidus*. Pb accumulation by both species was higher in soils with lower Ca.

Reference: Morgan and Morris 1982
Analytes Considered: Ca, Cd, Pb, and Zn
Species: *Lumbricus rubellus*
Dendrobaena rubidus
Geographic Location of Study: abandoned lead mine in Wales, Great Britain
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectrometry
Soil Extraction Method: HNO_3 digestion
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : only pH
Purpose of Study: Determine internal distribution of heavy metals in the earthworm
Study Conclusions: The two worm species accumulate metals to different degrees.

Reference: Pietz et al. 1984
Analytes Considered: Pb, Cd, Cr, Cu, Ni, and Zn
Species: mix of species
Geographic Location of Study: Fulton Co., IL
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: nitric/sulfuric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : pH presented (but insufficient information to relate values to correct sample locations).
Purpose of Study: To evaluate the uptake of metals by earthworms at mine sites amended with sewage sludge.
Study Conclusions: Cd and Zn were accumulated to levels greater than that in soil; Cr, Cu, Ni, and Pb were not. Cr in earthworms was negatively related to soil pH.

Reference: Pizl and Josens 1995
Analytes Considered: Pb, Cd, Cu, and Zn
Species: *A. chlorotica, A. caliginosa, A. icterica, A. rosea, L. castanea, L. rubellus, and L. terrestris*
Geographic Location of Study: Brussels Belgium
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: nitric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : pH, P, K, Mg, Na, Ca
Purpose of Study: To evaluate the population parameters and uptake of metals by earthworms along a gradient of urbanization.
Study Conclusions: Earthworm density was negatively correlated to soil Cd and Mg concentrations. Biomass was negatively correlated with Pb, Cu, and Zn and positively with distance from city center. Inter-generic differences in accumulation were observed**:** *Aporrectodea* spp. accumulated Cd and Pb more readily than did *Lumbricus* spp.

Reference: Talmage and Walton 1993
Analytes Considered: Hg
Species: not stated
Geographic Location of Study: East Tennessee (Oak Ridge Reservation)
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: x-ray fluorescence, neutron activation, and AA spectroscopy, depending on concentration
Soil Extraction Method: nitric/perchloric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : no
Purpose of Study: To evaluate the uptake, transfer, and toxicity of inorganic mercury at a contaminated site.
Study Conclusions: Small amounts of mercury were taken up by earthworms. Hg accumulation by shrews approached nephrotoxic levels.

Reference: Van Hook 1974
Analytes Considered: Cd, Pb, and Zn
Species: *Alabophera spp.*, *Lumbricus spp.*, and *Octalasium*. Species not differentiated.
Geographic Location of Study: East Tennessee (Oak Ridge Reservation)
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: isotope dilution spark source mass spectrometry
Soil Extraction Method: aqua regia
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : no
Purpose of Study: To evaluate the differential accumulation of Cd, Pb, and Zn from six soil types in East Tennessee.
Study Conclusions*:* While the earthworm species considered accumulated Cd and Zn to levels higher than that in soil, Pb was not.

Reference: van Rhee 1977
Analytes Considered: Cu
Species: mix of species
Geographic Location of Study: Netherlands
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: not stated
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : no
Purpose of Study: To evaluate the uptake of Cu by earthworms in pastures treated with Cu-contaminated pig wastes
Study Conclusions: Earthworm density was not related to soil Cu, but Cu in worm tissue was highly correlated to that in soil.

Reference: Yeates et al. 1994
Analytes Considered: As, Cr, and Cu
Species: *A. rosea and L. rubellus*
Geographic Location of Study: New Zealand
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: x-ray fluorescence spectroscopy
Soil Extraction Method: not stated
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : pH only
Purpose of Study: To evaluate effects of surface runoff from a CCA wood-treatment plant on soil biota.
Study Conclusions: Earthworms were absent from the site with the highest CCA concentrations. Bioconcentration of As, Cr, or Cu was not observed in either worm species (tissue levels were lower than soil levels).

B. Validation Data

Reference: Efroymson et al. 1996, Jones et al. 1996
Analytes Considered: 5 radionuclides, 2 organics, and 25 inorganics
Species: *not identified*
Geographic Location of Study: Oak Ridge, Tennessee
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: ICP and AA spectroscopy
Soil Extraction Method: nitric and hydrochloric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : pH, CEC, % OM, Ca
Purpose of Study: to determine accumulation of soil contaminants by earthworms inhabiting contaminated habitats on the Oak Ridge Reservation.

Reference: Ireland 1975
Analytes Considered: Pb and Zn
Species: *D. rubida*
Geographic Location of Study: Great Britain
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: nitric and hydrochloric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : pH and Ca
Purpose of Study: to evaluate heavy metal accumulation at an abandoned zinc mine

Reference: Marino et al. 1992
Analytes Considered: Cd, Cu, Pb, and Zn
Species: *A. caliginosa, A. rosea, D. madeirensis, D. octaedra, and L. friendi*
Geographic Location of Study: Spain
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: nitric and perchloric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : no
Purpose of Study: to evaluate heavy metal accumulation adjacent to a roadway.
Notes:

Reference: Morgan and Morgan 1990
Analytes Considered: Cd, Cu, Pb, Zn
Species: *L. rubellus*
Geographic Location of Study: Great Britain
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: nitric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : Ca, pH
Purpose of Study: to evaluate the tissues distributions of metals in *L. rubellus* from one uncontaminated and 4 contaminated sites.

Reference: Morgan and Morgan 1993
Analytes Considered: Cd, Pb, Zn
Species: *L. rubellus, A. caliginosa*
Geographic Location of Study: Great Britain
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: nitric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : Ca
Purpose of Study: to evaluate seasonal changes in heavy metal accumulation by ecologically different earthworm species

Reference: Morris and Morgan 1986
Analytes Considered: Pb
Species: *L. terrestris*
Geographic Location of Study: Great Britain
Exposure Duration: Resident
Worms Depurated: yes
Analytical Method: AA spectroscopy
Soil Extraction Method: nitric and hydrochloric acid
Soil Characteristics (pH, CEC, % OM, % Clay, etc.) Presented : Ca
Purpose of Study: to evaluate relationship of lead uptake and Ca in soil at a abandoned mine site.

APPENDIX B

EARTHWORM BIOACCUMULATION DATABASE

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
2378 TCDD	Wisconsin	NP44	not stated	no						0.000038	0.00001	2.923	Model	ERT 1987
2378 TCDD	Wisconsin	NP82	not stated	no						0.000025	0.00002	1.190	Model	ERT 1987
2378 TCDD	Wisconsin	NP17	not stated	no						0.000043	0.00003	1.720	Model	ERT 1987
2378 TCDD	Wisconsin	NP31	not stated	no						0.000037	1E-05	3.737	Model	ERT 1987
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.0093	0.0014	6.643	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.00076	0.00006	12.667	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.00083	0.00004	20.750	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.00106	0.00004	26.500	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.0017	0.00025	6.800	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.0004	0.00006	6.667	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.0095	0.0007	13.571	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. chlorotica	yes						0.0076	0.0014	5.429	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.007	0.0014	5.000	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.1024	0.0093	11.011	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.1968	0.0093	21.161	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.1049	0.0093	11.280	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. rosea	yes						0.1076	0.0093	11.570	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. caliginosa	yes						0.0731	0.0059	12.390	Model	Martinucci et al. 1983
2378 TCDD	Sveso Italy		A. rosea	yes						0.2482	0.0059	42.068	Model	Martinucci et al. 1983
As	Maryland	Nat C	E. loennbergi (c)	yes	silt loam	4.7	5.1			0.73	1.4	0.521	Model	Beyer and Cromartie 1987
As	Maryland	Tow A	E. loennbergi (a)	yes	silt loam	4.7	8.4			0.23	2.7	0.085	Model	Beyer and Cromartie 1987
As	Maryland	Ind E	A. trapezoides (a)	yes	soil in park	7.2	5.2			0.17	2.8	0.061	Model	Beyer and Cromartie 1987
As	Maryland	Ind H1	A. trapezoides (c)	yes	loam	6.4	3.2			0.23	5.6	0.041	Model	Beyer and Cromartie 1987
As	Maryland	Nat F	E. loennbergi (c)	yes	muck	4.2	14.7			0.31	0.77	0.403	Model	Beyer and Cromartie 1987
As	Maryland	Nat F	E. loennbergi (a)	yes	muck	4.2	14.7			0.22	0.77	0.286	Model	Beyer and Cromartie 1987
As	Maryland	Tow B	E. loennbergi (c)	yes	silt loam	5	4.3			0.59	1.4	0.421	Model	Beyer and Cromartie 1987
As	Maryland	Con B	E. loennbergi (a)	yes	silt loam	4.9	4.9			0.45	1.6	0.281	Model	Beyer and Cromartie 1987
As	Maryland	Nat B	L. rubellus (c)	yes	silt loam	4.8	3.5			0.19	1.9	0.100	Model	Beyer and Cromartie 1987
As	Maryland	Nat D	E. loennbergi (c)	yes	silt loam	5.1	5.5			1.5	2.2	0.682	Model	Beyer and Cromartie 1987
As	Virginia	Nat G	Sparganophilus eiser	yes	alluvium	7.3	3			0.17	3.5	0.049	Model	Beyer and Cromartie 1987
As	Pennsylvania	Ind F2	A. longa (c)	yes	soil in park	5.4	6.9			0.11	6.7	0.016	Model	Beyer and Cromartie 1987
As	Maryland	Con A	E. loennbergi (a)	yes	silt loam	5	2.7			0.73	3.4	0.215	Model	Beyer and Cromartie 1987
As	Maryland	Ind C	A. longa (c)	yes	soil in park	7.2	7.1			0.41	3.1	0.132	Model	Beyer and Cromartie 1987
As	Pennsylvania	Ind F1	A. longa (c)	yes	soil in park	5.6	13			0.19	7.9	0.024	Model	Beyer and Cromartie 1987
As	Pennsylvania	Min C1	Pheretima sp. (c)	yes	material in d	6.9	18			10	20	0.500	Model	Beyer and Cromartie 1987
As	Maryland	Ind A	Aporrectodea spp. (c	yes	soil in park	5.4	7.7			0.81	33	0.025	Model	Beyer and Cromartie 1987
As	Pennsylvania	Ind F2	A. tuberculata (c)	yes	soil in park	5.4	6.9			0.11	6.7	0.016	Model	Beyer and Cromartie 1987
As	Maryland	Ind G	L. rubellus (c)	yes	silt loam	6.6	4.9			0.23	3	0.077	Model	Beyer and Cromartie 1987
As	Maryland	Nat B	E. loennbergi (c)	yes	silt loam	4.8	3.5			0.29	1.9	0.153	Model	Beyer and Cromartie 1987
As	Maryland	Ind B	L. terrestris (a)	yes	soil in park	6	8.1			0.29	8	0.036	Model	Beyer and Cromartie 1987
As	Madison, Wisconsi	1972 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	3	6.95858	0.431	Model	Helmke et. al., 1979
As	Madison, Wisconsi	1971 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	1.9	6.9	0.275	Model	Helmke et. al., 1979
As	Madison, Wisconsi	1972 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	2.2	6.9	0.319	Model	Helmke et. al., 1979
As	Madison, Wisconsi	1972 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	1.6	7.1343	0.224	Model	Helmke et. al., 1979
As	Madison, Wisconsi	1973 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	1.6	6.95858	0.230	Model	Helmke et. al., 1979
As	Madison, Wisconsi	1971 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	2.1	6.95858	0.302	Model	Helmke et. al., 1979
As	Madison, Wisconsi	1972 30 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5922.05	1.7	7.01715	0.242	Model	Helmke et. al., 1979
As	Madison, Wisconsi	1971 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	1.9	7.1343	0.266	Model	Helmke et. al., 1979
As	Madison, Wisconsi	1973 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	1.1	7.1343	0.154	Model	Helmke et. al., 1979
As	Madison, Wisconsi	1973 30 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5922.05	1.6	7.01715	0.228	Model	Helmke et. al., 1979
As	Madison, Wisconsi	1973 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	2.1	6.9	0.304	Model	Helmke et. al., 1979
As	New Zealand	Control	A. rosea	yes	stony silt loa	5.95				8	8.65	0.925	Model	Yeates et al. 1994

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
As	New Zealand	Control	L. rubellus	yes	stony silt loa	5.95				4.4	8.65	0.509	Model	Yeates et al. 1994
As	New Zealand	low	L. rubellus	yes	stony silt loa	5.875				41.4	79.175	0.523	Model	Yeates et al. 1994
As	New Zealand	low	A. rosea	yes	stony silt loa	5.875				40	79.175	0.505	Model	Yeates et al. 1994
Cd	Netherlands	Plot 7	A. rosea	yes		5.7				21.2	0.14	151.429	Model	Andersen 1979
Cd	Netherlands	Plot 1	L. terrestris	yes		5.9				16.9	0.29	58.276	Model	Andersen 1979
Cd	Netherlands	Plot 5	A. rosea	yes		5.8				10.9	0.65	16.769	Model	Andersen 1979
Cd	Netherlands	Plot 5	A. chlorotica	yes		5.8				10.9	0.65	16.769	Model	Andersen 1979
Cd	Netherlands	Plot 5	L. terrestris	yes		5.8				16.8	0.65	25.846	Model	Andersen 1979
Cd	Netherlands	Plot 5	A. longa	yes		5.8				5.7	0.65	8.769	Model	Andersen 1979
Cd	Netherlands	Plot 6	A. longa	yes		6				9.2	0.99	9.293	Model	Andersen 1979
Cd	Netherlands	Plot 5	A. caliginosa	yes		5.8				6.9	0.65	10.615	Model	Andersen 1979
Cd	Netherlands	Plot 6	A. caliginosa	yes		6				10.9	0.99	11.010	Model	Andersen 1979
Cd	Netherlands	Plot 6	A. chlorotica	yes		6				16.2	0.99	16.364	Model	Andersen 1979
Cd	Netherlands	Plot 6	A. rosea	yes		6				19.6	0.99	19.798	Model	Andersen 1979
Cd	Netherlands	Plot 1	A. longa	yes		5.9				11.8	0.29	40.690	Model	Andersen 1979
Cd	Netherlands	Plot 6	L. terrestris	yes		6				8.8	0.99	8.889	Model	Andersen 1979
Cd	Netherlands	Plot 1	A. rosea	yes		5.9				26.9	0.29	92.759	Model	Andersen 1979
Cd	Netherlands	Plot 7	A. longa	yes		5.7				10	0.14	71.429	Model	Andersen 1979
Cd	Denmark	sludge-treated plo	A. longa	yes					23.5	9.2	1	9.200	Model	Andersen and Laursen 1982
Cd	Denmark	Copenhagen gard	L. terrestris	yes					28000	21	1	21.000	Model	Andersen and Laursen 1982
Cd	Pennsylvania	Min C1	Pheretima sp. (c)	yes	material in d	6.9	18			11	8.2	1.341	Model	Beyer and Cromartie 1987
Cd	Maryland	Ind C	A. longa (c)	yes	soil in park	7.2	7.1			12	2.7	4.444	Model	Beyer and Cromartie 1987
Cd	Pennsylvania	Min C3	L. terrestris (a+c)	yes	material in d	6.6	11			18	11	1.636	Model	Beyer and Cromartie 1987
Cd	Maryland	Ind D	A. trapezoides (a)	yes	soil in park	5.8	7.5			6.5	0.46	14.130	Model	Beyer and Cromartie 1987
Cd	Maryland	Ind B	L. terrestris (a)	yes	soil in park	6	8.1			16	1.7	9.412	Model	Beyer and Cromartie 1987
Cd	Pennsylvania	Ind F1	A. longa (c)	yes	soil in park	5.6	13			10	0.47	21.277	Model	Beyer and Cromartie 1987
Cd	Maryland	Ind D	A. trapezoides (c)	yes	soil in park	5.8	7.5			4	0.46	8.696	Model	Beyer and Cromartie 1987
Cd	Pennsylvania	Min C2	L. terrestris (c)	yes	material in d	7	8.9			23	2.8	8.214	Model	Beyer and Cromartie 1987
Cd	Pennsylvania	Min C2	A. tuberculata (a+c)	yes	material in d	7	8.9			8.3	2.8	2.964	Model	Beyer and Cromartie 1987
Cd	Pennsylvania	9 sludged	A. turgida, L. terrestr	yes	loam	4.6	2.8	8		101	1.9	53.158	Model	Beyer et al. 1982
Cd	Pennsylvania	13 sludged	L. terrestris	yes	silt loam	5.5	3.8	11		118	8.2	14.390	Model	Beyer et al. 1982
Cd	Pennsylvania	1 sludged	L. terretris	yes	loam	5.5				51	3.8	13.421	Model	Beyer et al. 1982
Cd	Pennsylvania	4 sludged	A. longa	yes	silt loam	4.9	4.9	13		18	0.91	19.780	Model	Beyer et al. 1982
Cd	Pennsylvania	4 control	A. tuberculata	yes	silt loam	5.4	3	9		5.3	0.18	29.444	Model	Beyer et al. 1982
Cd	Pennsylvania	9 control	A. turgida, L. terrestr	yes	loam	4.9	2.5	8		8.6	0.14	61.429	Model	Beyer et al. 1982
Cd	Pennsylvania	13 control	L. terrestris	yes	silt loam	5.3	2.6	10		3.6	0.09	40.000	Model	Beyer et al. 1982
Cd	Pennsylvania	1 control	A. tuberculata	yes	loam	5.9				4	0.06	66.667	Model	Beyer et al. 1982
Cd	Pennsylvania	Bake oven knob	D. rubida	yes	very stoney l	5	23	19		140	2.7	51.852	Model	Beyer et al. 1985
Cd	Pennsylvania	Bake oven knob	E. carolinensis	yes	very stoney l	5	23	19		62	2.7	22.963	Model	Beyer et al. 1985
Cd	British Columbia	field	L. rubellus (mature a	yes	silty clay loar	4.1				6	0.4	15.000	Model	Carter 1983
Cd	British Columbia	field	L. rubellus (immatur	yes	silty clay loar	4.1				5.1	0.4	12.750	Model	Carter 1983
Cd	British Columbia	field	Aporrectodea spp.	yes	silty clay loar	4.1				8	0.4	20.000	Model	Carter 1983
Cd	British Columbia	field	A. chlorotica	yes	silty clay loar	4.1				8	0.4	20.000	Model	Carter 1983
Cd	Great Britain	Roman Gravels	L. rubellus	yes		7.2			2761	487	318	1.531	Model	Corp and Morgan 1991
Cd	Great Britain	Llantrisant A	L. rubellus	yes		6.6			4910	102.3	8.31	12.310	Model	Corp and Morgan 1991
Cd	Great Britain	Snailbeach	L. rubellus	yes		6.4			55500	331.3	207	1.600	Model	Corp and Morgan 1991
Cd	Great Britain	pennerly	L. rubellus	yes		8.1			176000	214	124	1.726	Model	Corp and Morgan 1991
Cd	Great Britain	Castell	L. rubellus	yes		5.3			1860	205.1	20.8	9.861	Model	Corp and Morgan 1991
Cd	Great Britain	Cwmystwyth 1	L. rubellus	yes		6.4			62100	70.9	94.4	0.751	Model	Corp and Morgan 1991
Cd	Great Britain	Cwmystwyth 3	L. rubellus	yes		6			15400	61	6.75	9.037	Model	Corp and Morgan 1991
Cd	Great Britain	Llantrisant B	L. rubellus	yes		5.2			3200	29.5	3.56	8.287	Model	Corp and Morgan 1991
Cd	Great Britain	Dinas Powys	L. rubellus	yes		5.8			2761	9.3	0.69	13.478	Model	Corp and Morgan 1991

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Cd	Great Britain	Cwmystwyth 2	L. rubellus	yes		3.5			274	10.4	0.46	22.609	Model	Corp and Morgan 1991
Cd	Poland	near street	L. terrestris	yes		6.1	7			0	0.88	0.000	Model	Czarnowska and Jopkiewicz
Cd	Poland	200m from st	L. terrestris	yes		2.8	6.4			0	0.29	0.000	Model	Czarnowska and Jopkiewicz
Cd	Poland	Control	L. terrestris	yes		3.1	6			0	0.11	0.000	Model	Czarnowska and Jopkiewicz
Cd	Germany	Worben w/o sludg	mix	yes						1.875	0.069	27.174	Model	Diercxsens et al. 1985
Cd	Germany	Worben w/sludge	mix	yes						7	0.106	66.038	Model	Diercxsens et al. 1985
Cd	Maryland	US-1 C	mix	yes	loamy sand	6.88	4.8			7.2	0.62	11.613	Model	Gish and Christensen 1973
Cd	Maryland	B-W Parkway B	mix	yes	silt-clay	6.98	4.96			7.8	0.64	12.188	Model	Gish and Christensen 1973
Cd	Maryland	Patuxent E	mix	yes	mix	6.86	3.28			3	0.66	4.545	Model	Gish and Christensen 1973
Cd	Maryland	US-1 D	mix	yes	silt-loam	6.96	6.36			8.7	0.88	9.886	Model	Gish and Christensen 1973
Cd	Maryland	B-W Parkway A	mix	yes	silt-clay	9.96	7.3			10.8	1.14	9.474	Model	Gish and Christensen 1973
Cd	Great Britain	Dolgelllau	L. rubellus	yes					4921	25	4	6.250	Model	Ireland 1979
Cd	Great Britain	Borth	D. veneta	yes					32129	7	4	1.750	Model	Ireland 1979
Cd	Great Britain	Borth	L. rubellus	yes					32129	4	4	1.000	Model	Ireland 1979
Cd	Great Britain	Borth	E. tetraeda	yes					32129	3	4	0.750	Model	Ireland 1979
Cd	Great Britain	Cwmystwyth	L. rubellus	yes					998	15	2	7.500	Model	Ireland 1979
Cd	Netherlands	Budel pasture 3	L. terrestris	yes	podzolic sand	6.5	10.2			114	9.2	12.391	Model	Ma 1987
Cd	Netherlands	Arnhem pasture	L. terrestris	yes	podzolic sand	4	5.7			19	0.1	190.000	Model	Ma 1987
Cd	Netherlands	Budel pasture 2	L. terrestris	yes	podzolic sand	6	7.3			79	6	13.167	Model	Ma 1987
Cd	Great Britain	Llantrisant	L. rubellus	yes					5080	130	19	6.842	Model	Morgan and Morgan 1991
Cd	Great Britain	Cwmystwyth	L. rubellus	yes					170	8	0.09	88.889	Model	Morgan and Morgan 1991
Cd	Great Britain	Dinas Powys	L. rubellus	yes					1790	14	0.9	15.556	Model	Morgan and Morgan 1991
Cd	Great Britain	Snailbeach	L. rubellus	yes					48920	160	80	2.000	Model	Morgan and Morgan 1991
Cd	Great Britain	Cwmystwyth	D. rubidus	yes					170	10	0.09	111.111	Model	Morgan and Morgan 1991
Cd	Great Britain	Cwn Rheidol	D. rubidus	yes					6780	17	0.84	20.238	Model	Morgan and Morgan 1991
Cd	Great Britain	Cwn Rheidol	L. rubellus	yes					6780	14	0.84	16.667	Model	Morgan and Morgan 1991
Cd	Great Britain	Wemyss	D. rubidus	yes					1390	12	1.21	9.917	Model	Morgan and Morgan 1991
Cd	Great Britain	Dinas Powys	D. rubidus	yes					1790	30	0.9	33.333	Model	Morgan and Morgan 1991
Cd	Great Britain	Draethen F	L. rubellus	yes					58120	180	90	2.000	Model	Morgan and Morgan 1991
Cd	Great Britain	Minera-2	L. rubellus	yes					69440	220	50	4.400	Model	Morgan and Morgan 1991
Cd	Great Britain	Minera-2	D. rubidus	yes					69440	320	50	6.400	Model	Morgan and Morgan 1991
Cd	Great Britain	Wemyss	L. rubellus	yes					1390	17	1.21	14.050	Model	Morgan and Morgan 1991
Cd	Great Britain	Snailbeach	D. rubidus	yes					48920	190	80	2.375	Model	Morgan and Morgan 1991
Cd	Great Britain	Llantrisant	D. rubidus	yes					5080	430	19	22.632	Model	Morgan and Morgan 1991
Cd	Great Britain	Minera-1	D. rubidus	yes					91850	270	280	0.964	Model	Morgan and Morgan 1991
Cd	Great Britain	Draethen F	D. rubidus	yes					58120	410	90	4.556	Model	Morgan and Morgan 1991
Cd	Great Britain	Draethen M	D. rubidus	yes					26420	1790	350	5.114	Model	Morgan and Morgan 1991
Cd	Great Britain	Draethen M	L. rubellus	yes					26420	580	350	1.657	Model	Morgan and Morgan 1991
Cd	Great Britain	Minera-1	L. rubellus	yes					91850	120	280	0.429	Model	Morgan and Morgan 1991
Cd	Great Britain	Wales	D. rubidus	yes		6.8			46142	1320	467	2.827	Model	Morgan and Morris 1982
Cd	Great Britain	Wales	L. rubellus	yes		6.8			46142	823	467	1.762	Model	Morgan and Morris 1982
Cd	Illinois	nonmine - w/o slu	A. tuberculata and L.	yes	silt loam					12	1	12.000	Model	Pietz et al. 1984
Cd	Illinois	mine - w/o sludge	A. tuberculata	yes	silt clay loam					3.8	0.6	6.333	Model	Pietz et al. 1984
Cd	Illinois	mine - w/ sludge	A. tuberculata	yes	silt clay loam					22	2	11.000	Model	Pietz et al. 1984
Cd	Illinois	nonmine - w sludg	A. tuberculata and L.	yes	silt loam					36	3.5	10.286	Model	Pietz et al. 1984
Cd	Belgium	site 2	A. chlorotica	yes		7.03			952.336	18.48	0.83	22.265	Model	Pizl and Josens 1995
Cd	Belgium	site 5	L. rubellus	yes		5.93			173.33	14.39	0.28	51.393	Model	Pizl and Josens 1995
Cd	Belgium	site 4	L. castaneus	yes		6.7			532	18.45	0.7	26.357	Model	Pizl and Josens 1995
Cd	Belgium	site 3	L. rubellus	yes		6.97			2039.67	16.68	0.7	23.829	Model	Pizl and Josens 1995
Cd	Belgium	site 2	L. terrestris	yes		7.03			952.336	19.8	0.83	23.855	Model	Pizl and Josens 1995
Cd	Belgium	site 1	L. rubellus	yes		7.13			705	28.24	0.68	41.529	Model	Pizl and Josens 1995
Cd	Belgium	site 6	A. caliginosa	yes		6			228.67	16.89	0.21	80.429	Model	Pizl and Josens 1995

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Cd	Belgium	site 6	A. rosea	yes		6			228.67	9.78	0.21	46.571	Model	Pizl and Josens 1995
Cd	Belgium	site 5	A. rosea	yes		5.93			173.33	45.17	0.28	161.321	Model	Pizl and Josens 1995
Cd	Belgium	site 1	L. terrestris	yes		7.13			705	18.78	0.68	27.618	Model	Pizl and Josens 1995
Cd	Belgium	site 4	L. terrestris	yes		6.7			532	22.68	0.7	32.400	Model	Pizl and Josens 1995
Cd	Belgium	site 6	L. castaneus	yes		6			228.67	3.44	0.21	16.381	Model	Pizl and Josens 1995
Cd	Belgium	site 6	A. icterica	yes		6			228.67	39.9	0.21	190.000	Model	Pizl and Josens 1995
Cd	Belgium	site 6	L. rubellus	yes		6			228.67	8.14	0.21	38.762	Model	Pizl and Josens 1995
Cd	Belgium	site 3	L. castaneus	yes		6.97			2039.67	15.3	0.7	21.857	Model	Pizl and Josens 1995
Cd	Belgium	site 5	L. terrestris	yes		5.93			173.33	15.83	0.28	56.536	Model	Pizl and Josens 1995
Cd	Belgium	site 5	A. caliginosa	yes		5.93			173.33	45.23	0.28	161.536	Model	Pizl and Josens 1995
Cd	East Tennessee	Tarklin	mix	yes						3.4	0.23	14.783	Model	Van Hook 1974
Cd	East Tennessee	Captina	mix	yes						3.1	0.2	15.500	Model	Van Hook 1974
Cd	East Tennessee	Claiborne	mix	yes						6.1	0.28	21.786	Model	Van Hook 1974
Cd	East Tennessee	Bodine	mix	yes						7.2	0.32	22.500	Model	Van Hook 1974
Cd	East Tennessee	Emory	mix	yes						9.3	0.8	11.625	Model	Van Hook 1974
Cd	East Tennessee	Linside	mix	yes						5.1	0.28	18.214	Model	Van Hook 1974
Cr	Maryland	Nat B	L. rubellus (c)	yes	silt loam	4.8	3.5			1.2	11	0.109	Model	Beyer and Cromartie 1987
Cr	Pennsylvania	Ind F2	A. longa (c)	yes	soil in park	5.4	6.9			1.3	15	0.087	Model	Beyer and Cromartie 1987
Cr	Pennsylvania	Ind F2	A. tuberculata (c)	yes	soil in park	5.4	6.9			53	15	3.533	Model	Beyer and Cromartie 1987
Cr	Maryland	Ind H2	A. trapezoides (c)	yes	loam	5.7	7.6			9.8	10	0.980	Model	Beyer and Cromartie 1987
Cr	Maryland	Con A	E. loennbergi (a)	yes	silt loam	5	2.7			15	11	1.364	Model	Beyer and Cromartie 1987
Cr	Maryland	Ind D	A. trapezoides (a)	yes	soil in park	5.8	7.5			2.1	12	0.175	Model	Beyer and Cromartie 1987
Cr	Pennsylvania	Ind F1	A. longa (c)	yes	soil in park	5.6	13			4.9	16	0.306	Model	Beyer and Cromartie 1987
Cr	Maryland	Nat F	E. loennbergi (c)	yes	muck	4.2	14.7			2.1	14	0.150	Model	Beyer and Cromartie 1987
Cr	Maryland	Ind D	A. trapezoides (c)	yes	soil in park	5.8	7.5			11	12	0.917	Model	Beyer and Cromartie 1987
Cr	Maryland	Tow A	E. loennbergi (a)	yes	silt loam	4.7	8.4			39	10	3.900	Model	Beyer and Cromartie 1987
Cr	Maryland	Nat C	E. loennbergi (c)	yes	silt loam	4.7	5.1			14	16	0.875	Model	Beyer and Cromartie 1987
Cr	Pennsylvania	Min C2	L. terrestris (c)	yes	material in d	7	8.9			27	10	2.700	Model	Beyer and Cromartie 1987
Cr	Maryland	Ind G	A. trapezoides (c)	yes	silt loam	6.6	4.9			8.4	32	0.263	Model	Beyer and Cromartie 1987
Cr	Pennsylvania	Min B	A. tuberculata (c)	yes	extremely st	5.5	7.2			13	24	0.542	Model	Beyer and Cromartie 1987
Cr	Pennsylvania	Min C3	L. terrestris (a+c)	yes	material in d	6.6	11			11	6.4	1.719	Model	Beyer and Cromartie 1987
Cr	Maryland	Ind C	A. longa (c)	yes	soil in park	7.2	7.1			6	35	0.171	Model	Beyer and Cromartie 1987
Cr	Maryland	Ind G	L. rubellus (c)	yes	silt loam	6.6	4.9			22	32	0.688	Model	Beyer and Cromartie 1987
Cr	Maryland	Ind H1	A. trapezoides (c)	yes	loam	6.4	3.2			26	9.3	2.796	Model	Beyer and Cromartie 1987
Cr	Maryland	Ind E	A. trapezoides (c)	yes	soil in park	7.2	5.2			20	51	0.392	Model	Beyer and Cromartie 1987
Cr	Maryland	Ind B	L. terrestris (a)	yes	soil in park	6	8.1			1.8	30	0.060	Model	Beyer and Cromartie 1987
Cr	Maryland	Tow B	E. loennbergi (c)	yes	silt loam	5	4.3			51	9.5	5.368	Model	Beyer and Cromartie 1987
Cr	Maryland	Ind A	Aporrectodea spp. (c	yes	soil in park	5.4	7.7			12	30	0.400	Model	Beyer and Cromartie 1987
Cr	Maryland	Con B	E. loennbergi (a)	yes	silt loam	4.9	4.9			12	9.7	1.237	Model	Beyer and Cromartie 1987
Cr	Virginia	Nat E	A. turgida (c)	yes	stony loam	5.6	9.7			1.8	4.9	0.367	Model	Beyer and Cromartie 1987
Cr	Maryland	Ind E	A. trapezoides (a)	yes	soil in park	7.2	5.2			3.6	51	0.071	Model	Beyer and Cromartie 1987
Cr	Maryland	Nat D	E. loennbergi (c)	yes	silt loam	5.1	5.5			16	11	1.455	Model	Beyer and Cromartie 1987
Cr	Maryland	Min A	L. terrestris (c)	yes	very stony lo	6.9	10.2			6	71	0.085	Model	Beyer and Cromartie 1987
Cr	Germany	Worben w/sludge	mix	yes						59.375	62.3	0.953	Model	Diercxsens et al. 1985
Cr	Germany	Worben w/o sludg	mix	yes						59.375	60.7	0.978	Model	Diercxsens et al. 1985
Cr	Madison, Wisconsi	1973 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	3.6	79.8925	0.045	Model	Helmke et. al., 1979
Cr	Madison, Wisconsi	1971 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	2.3	61	0.038	Model	Helmke et. al., 1979
Cr	Madison, Wisconsi	1973 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	3	61	0.049	Model	Helmke et. al., 1979
Cr	Madison, Wisconsi	1972 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	25	79.8925	0.313	Model	Helmke et. al., 1979
Cr	Madison, Wisconsi	1972 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	7.2	61	0.118	Model	Helmke et. al., 1979
Cr	Madison, Wisconsi	1971 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	5.1	79.8925	0.064	Model	Helmke et. al., 1979
Cr	Madison, Wisconsi	1971 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	11.6	136.57	0.085	Model	Helmke et. al., 1979

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Cr	Madison, Wisconsi	1972 30 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5922.05	2.2	98.785	0.022	Model	Helmke et. al., 1979
Cr	Madison, Wisconsi	1973 30 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5922.05	3.4	98.785	0.034	Model	Helmke et. al., 1979
Cr	Madison, Wisconsi	1973 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	2.9	136.57	0.021	Model	Helmke et. al., 1979
Cr	Madison, Wisconsi	1972 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	6.7	136.57	0.049	Model	Helmke et. al., 1979
Cr	Illinois	mine - w/o sludge	A. tuberculata	yes	silt clay loam					1.2	23	0.052	Model	Pietz et al. 1984
Cr	Illinois	nonmine - w/o slu	A. tuberculata and L.	yes	silt loam					0.6	18	0.033	Model	Pietz et al. 1984
Cr	Illinois	nonmine - w sludg	A. tuberculata and L.	yes	silt loam					2.6	45	0.058	Model	Pietz et al. 1984
Cr	Illinois	mine - w/ sludge	A. tuberculata	yes	silt clay loam					2.3	38	0.061	Model	Pietz et al. 1984
Cr	New Zealand	Control	A. rosea	yes	stony silt loa	5.95				2.9	46.05	0.063	Model	Yeates et al. 1994
Cr	New Zealand	Control	L. rubellus	yes	stony silt loa	5.95				2.9	46.05	0.063	Model	Yeates et al. 1994
Cr	New Zealand	low	A. rosea	yes	stony silt loa	5.875				2.9	46.05	0.063	Model	Yeates et al. 1994
Cr	New Zealand	low	L. rubellus	yes	stony silt loa	5.875				9.8	87.075	0.113	Model	Yeates et al. 1994
Cu	Maryland	Min A	L. terrestris (c)	yes	very stony lo	6.9	10.2			31	820	0.038	Model	Beyer and Cromartie 1987
Cu	Maryland	Tow A	E. loennbergi (a)	yes	silt loam	4.7	8.4			9.7	4.9	1.980	Model	Beyer and Cromartie 1987
Cu	Pennsylvania	Ind F2	A. longa (c)	yes	soil in park	5.4	6.9			15	32	0.469	Model	Beyer and Cromartie 1987
Cu	Maryland	Tow B	E. loennbergi (c)	yes	silt loam	5	4.3			13	5.7	2.281	Model	Beyer and Cromartie 1987
Cu	Pennsylvania	Min C2	L. terrestris (c)	yes	material in d	7	8.9			6.6	38	0.174	Model	Beyer and Cromartie 1987
Cu	Pennsylvania	Min C2	A. tuberculata (a+c)	yes	material in d	7	8.9			5.5	38	0.145	Model	Beyer and Cromartie 1987
Cu	Maryland	Ind B	L. terrestris (a)	yes	soil in park	6	8.1			7.8	40	0.195	Model	Beyer and Cromartie 1987
Cu	Maryland	Nat F	E. loennbergi (c)	yes	muck	4.2	14.7			10	8.2	1.220	Model	Beyer and Cromartie 1987
Cu	Maryland	Nat C	E. loennbergi (c)	yes	silt loam	4.7	5.1			14	6.5	2.154	Model	Beyer and Cromartie 1987
Cu	Maryland	Nat A	E.carolinensis (c)	yes	silt loam	4.7	3.6			8.1	3.5	2.314	Model	Beyer and Cromartie 1987
Cu	Pennsylvania	Min C1	Pheretima sp. (c)	yes	material in d	6.9	18			14	450	0.031	Model	Beyer and Cromartie 1987
Cu	Pennsylvania	Ind F2	A. tuberculata (c)	yes	soil in park	5.4	6.9			16	32	0.500	Model	Beyer and Cromartie 1987
Cu	Maryland	Nat F	E. loennbergi (a)	yes	muck	4.2	14.7			5.1	8.2	0.622	Model	Beyer and Cromartie 1987
Cu	Virginia	Nat E	A. turgida (c)	yes	stony loam	5.6	9.7			4.7	8.2	0.573	Model	Beyer and Cromartie 1987
Cu	Maryland	Con A	E. loennbergi (a)	yes	silt loam	5	2.7			2.1	4	0.525	Model	Beyer and Cromartie 1987
Cu	Maryland	Ind C	A. longa (c)	yes	soil in park	7.2	7.1			9.9	45	0.220	Model	Beyer and Cromartie 1987
Cu	Maryland	Ind H1	A. trapezoides (c)	yes	loam	6.4	3.2			4.1	4.5	0.911	Model	Beyer and Cromartie 1987
Cu	Pennsylvania	Min C3	L. terrestris (a+c)	yes	material in d	6.6	11			13	1000	0.013	Model	Beyer and Cromartie 1987
Cu	Maryland	Nat B	L. rubellus (c)	yes	silt loam	4.8	3.5			7.2	5.1	1.412	Model	Beyer and Cromartie 1987
Cu	Pennsylvania	Ind F1	A. longa (c)	yes	soil in park	5.6	13			18	76	0.237	Model	Beyer and Cromartie 1987
Cu	Maryland	Nat D	E. loennbergi (c)	yes	silt loam	5.1	5.5			8.7	5.9	1.475	Model	Beyer and Cromartie 1987
Cu	Virginia	Nat G	Sparganophilus eise	yes	alluvium	7.3	3			5	9	0.556	Model	Beyer and Cromartie 1987
Cu	Maryland	Ind D	A. trapezoides (c)	yes	soil in park	5.8	7.5			12	21	0.571	Model	Beyer and Cromartie 1987
Cu	Maryland	Ind G	A. trapezoides (c)	yes	silt loam	6.6	4.9			5.3	12	0.442	Model	Beyer and Cromartie 1987
Cu	Pennsylvania	Min B	A. tuberculata (c)	yes	extremely stc	5.5	7.2			5.3	12	0.442	Model	Beyer and Cromartie 1987
Cu	Pennsylvania	Min B	A. longa (c)	yes	extremely stc	5.5	7.2			6.8	12	0.567	Model	Beyer and Cromartie 1987
Cu	Maryland	Ind G	L. rubellus (c)	yes	silt loam	6.6	4.9			8.8	12	0.733	Model	Beyer and Cromartie 1987
Cu	Pennsylvania	Min C4	L. terrestris (a)	yes	loam	4.6	15.4			3.9	14	0.279	Model	Beyer and Cromartie 1987
Cu	Maryland	Nat B	E. loennbergi (c)	yes	silt loam	4.8	3.5			13	5.1	2.549	Model	Beyer and Cromartie 1987
Cu	Maryland	Ind A	Aporrectodea spp. (c	yes	soil in park	5.4	7.7			5.6	53	0.106	Model	Beyer and Cromartie 1987
Cu	Maryland	Con B	E. loennbergi (a)	yes	silt loam	4.9	4.9			8.5	5.2	1.635	Model	Beyer and Cromartie 1987
Cu	Maryland	Ind E	A. trapezoides (a)	yes	soil in park	7.2	5.2			4.8	23	0.209	Model	Beyer and Cromartie 1987
Cu	Maryland	Ind E	A. trapezoides (c)	yes	soil in park	7.2	5.2			7.1	23	0.309	Model	Beyer and Cromartie 1987
Cu	Maryland	Ind H2	A. trapezoides (c)	yes	loam	5.7	7.6			6.3	9.1	0.692	Model	Beyer and Cromartie 1987
Cu	Maryland	Ind D	A. trapezoides (a)	yes	soil in park	5.8	7.5			12	21	0.571	Model	Beyer and Cromartie 1987
Cu	Pennsylvania	9 control	A. turgida, L. terrestr	yes	loam	4.9	2.5	8		13	17	0.765	Model	Beyer et al. 1982
Cu	Pennsylvania	1 sludged	L. terretris	yes	loam	5.5				32	46	0.696	Model	Beyer et al. 1982
Cu	Pennsylvania	4 control	A. tuberculata	yes	silt loam	5.4	3	9		12	12	1.000	Model	Beyer et al. 1982
Cu	Pennsylvania	9 sludged	A. turgida, L. terrestr	yes	loam	4.6	2.8	8		28	44	0.636	Model	Beyer et al. 1982
Cu	Pennsylvania	4 sludged	A. longa	yes	silt loam	4.9	4.9	13		38	46	0.826	Model	Beyer et al. 1982

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Cu	Pennsylvania	1 control	A. tuberculata	yes	loam	5.9				12	11	1.091	Model	Beyer et al. 1982
Cu	Pennsylvania	13 control	L. terrestris	yes	silt loam	5.3	2.6	10		13	12	1.083	Model	Beyer et al. 1982
Cu	Pennsylvania	13 sludged	L. terrestris	yes	silt loam	5.5	3.8	11		28	25	1.120	Model	Beyer et al. 1982
Cu	Pennsylvania	Bake oven knob	E. carolinensis	yes	very stoney l	5	23	19		12	18	0.667	Model	Beyer et al. 1985
Cu	Pennsylvania	Bake oven knob	D. rubida	yes	very stoney l	5	23	19		88	18	4.889	Model	Beyer et al. 1985
Cu	British Columbia	field	A. chlorotica	yes	silty clay loar	4.1				8	26	0.308	Model	Carter 1983
Cu	British Columbia	field	L. rubellus (immatur	yes	silty clay loar	4.1				10	26	0.385	Model	Carter 1983
Cu	British Columbia	field	Aporrectodea spp.	yes	silty clay loar	4.1				11	26	0.423	Model	Carter 1983
Cu	British Columbia	field	L. rubellus (mature a	yes	silty clay loar	4.1				10	26	0.385	Model	Carter 1983
Cu	Great Britain	pennerly	L. rubellus	yes		8.1			3200	66	775	0.085	Model	Corp and Morgan 1991
Cu	Great Britain	Castell	L. rubellus	yes		5.3			1860	58.6	154	0.381	Model	Corp and Morgan 1991
Cu	Great Britain	Llantrisant A	L. rubellus	yes		6.6			4910	23.6	22.4	1.054	Model	Corp and Morgan 1991
Cu	Great Britain	Cwmystwyth 3	L. rubellus	yes		6			15400	25.7	103	0.250	Model	Corp and Morgan 1991
Cu	Great Britain	Roman Gravels	L. rubellus	yes		7.2			209000	60.5	318	0.190	Model	Corp and Morgan 1991
Cu	Great Britain	Cwmystwyth 1	L. rubellus	yes		6.4			62100	23.7	94.1	0.252	Model	Corp and Morgan 1991
Cu	Great Britain	Llantrisant B	L. rubellus	yes		5.2			3200	29.8	61.2	0.487	Model	Corp and Morgan 1991
Cu	Great Britain	Snailbeach	L. rubellus	yes		6.4			55500	27.5	31.2	0.881	Model	Corp and Morgan 1991
Cu	Great Britain	Cwmystwyth 2	L. rubellus	yes		3.5			274	18.5	26.4	0.701	Model	Corp and Morgan 1991
Cu	Great Britain	Dinas Powys	L. rubellus	yes		5.8			2761	19	22.5	0.844	Model	Corp and Morgan 1991
Cu	Poland	Control	L. terrestris	yes		3.1	6			0	8.6	0.000	Model	Czarnowska and Jopkiewicz
Cu	Poland	200m from st	L. terrestris	yes		2.8	6.4			0	19.9	0.000	Model	Czarnowska and Jopkiewicz
Cu	Poland	near street	L. terrestris	yes		6.1	7			0	44.3	0.000	Model	Czarnowska and Jopkiewicz
Cu	Germany	Worben w/o sludg	mix	yes						43.125	34	1.268	Model	Diercxsens et al. 1985
Cu	Germany	Worben w/sludge	mix	yes						36.875	36.7	1.005	Model	Diercxsens et al. 1985
Cu	Great Britain	Cwmystwyth	L. rubellus	yes					998	13	20	0.650	Model	Ireland 1979
Cu	Great Britain	Borth	E. tetraeda	yes					32129	8	252	0.032	Model	Ireland 1979
Cu	Great Britain	Borth	D. veneta	yes					32129	14	252	0.056	Model	Ireland 1979
Cu	Great Britain	Borth	L. rubellus	yes					32129	11	252	0.044	Model	Ireland 1979
Cu	Great Britain	Dolgelllau	L. rubellus	yes					4921	11	335	0.033	Model	Ireland 1979
Cu	Netherlands	Arnhem pasture	L. terrestris	yes	podzolic sand	4	5.7			20	7	2.857	Model	Ma 1987
Cu	Netherlands	Budel pasture 3	L. terrestris	yes	podzolic sand	6.5	10.2			28	40	0.700	Model	Ma 1987
Cu	Netherlands	Budel pasture 2	L. terrestris	yes	podzolic sand	6	7.3			28	25	1.120	Model	Ma 1987
Cu	Illinois	mine - w/o sludge	A. tuberculata	yes	silt clay loam					7	22	0.318	Model	Pietz et al. 1984
Cu	Illinois	nonmine - w/o slu	A. tuberculata and L.	yes	silt loam					6.4	34	0.188	Model	Pietz et al. 1984
Cu	Illinois	mine - w/ sludge	A. tuberculata	yes	silt clay loam					10	36	0.278	Model	Pietz et al. 1984
Cu	Illinois	nonmine - w sludg	A. tuberculata and L.	yes	silt loam					11	33	0.333	Model	Pietz et al. 1984
Cu	Belgium	site 2	A. chlorotica	yes		7.03			952.336	14.59	28.83	0.506	Model	Pizl and Josens 1995
Cu	Belgium	site 4	L. castaneus	yes		6.7			532	11.74	7.67	1.531	Model	Pizl and Josens 1995
Cu	Belgium	site 6	L. castaneus	yes		6			228.67	13.76	3.43	4.012	Model	Pizl and Josens 1995
Cu	Belgium	site 5	A. rosea	yes		5.93			173.33	14.34	5.83	2.460	Model	Pizl and Josens 1995
Cu	Belgium	site 1	L. terrestris	yes		7.13			705	13.07	19.13	0.683	Model	Pizl and Josens 1995
Cu	Belgium	site 4	L. terrestris	yes		6.7			532	10.95	7.67	1.428	Model	Pizl and Josens 1995
Cu	Belgium	site 1	L. rubellus	yes		7.13			705	16.71	19.13	0.873	Model	Pizl and Josens 1995
Cu	Belgium	site 5	L. rubellus	yes		5.93			173.33	11.83	5.83	2.029	Model	Pizl and Josens 1995
Cu	Belgium	site 2	L. terrestris	yes		7.03			952.336	10.71	28.83	0.371	Model	Pizl and Josens 1995
Cu	Belgium	site 5	A. caliginosa	yes		5.93			173.33	11.8	5.83	2.024	Model	Pizl and Josens 1995
Cu	Belgium	site 3	L. castaneus	yes		6.97			2039.67	12.24	10.9	1.123	Model	Pizl and Josens 1995
Cu	Belgium	site 6	L. rubellus	yes		6			228.67	10.88	3.43	3.172	Model	Pizl and Josens 1995
Cu	Belgium	site 3	L. rubellus	yes		6.97			2039.67	13.16	10.9	1.207	Model	Pizl and Josens 1995
Cu	Belgium	site 5	L. terrestris	yes		5.93			173.33	10.53	5.83	1.806	Model	Pizl and Josens 1995
Cu	Belgium	site 6	A. caliginosa	yes		6			228.67	10.52	3.43	3.067	Model	Pizl and Josens 1995
Cu	Belgium	site 6	A. rosea	yes		6			228.67	11.56	3.43	3.370	Model	Pizl and Josens 1995

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Cu	Belgium	site 6	A. icterica	yes		6			228.67	8.76	3.43	2.554	Model	Pizl and Josens 1995
Cu	Netherlands	7	mix	yes						14	17.6	0.795	Model	Van Rhee 1977
Cu	Netherlands	1	mix	yes						63	109.7	0.574	Model	Van Rhee 1977
Cu	Netherlands	2	mix	yes						39	98.9	0.394	Model	Van Rhee 1977
Cu	Netherlands	3	mix	yes						20	43.7	0.458	Model	Van Rhee 1977
Cu	Netherlands	4	mix	yes						19	26.8	0.709	Model	Van Rhee 1977
Cu	Netherlands	5	mix	yes						19	25.5	0.745	Model	Van Rhee 1977
Cu	Netherlands	6	mix	yes						16	25.4	0.630	Model	Van Rhee 1977
Cu	Netherlands	8	mix	yes						12	14.4	0.833	Model	Van Rhee 1977
Cu	Netherlands	9	mix	yes						10	6.7	1.493	Model	Van Rhee 1977
Cu	New Zealand	low	A. rosea	yes	stony silt loa	5.875				13.3	52.1	0.255	Model	Yeates et al. 1994
Cu	New Zealand	low	L. rubellus	yes	stony silt loa	5.875				17.6	52.1	0.338	Model	Yeates et al. 1994
Cu	New Zealand	Control	L. rubellus	yes	stony silt loa	5.95				7	16.15	0.433	Model	Yeates et al. 1994
Cu	New Zealand	Control	A. rosea	yes	stony silt loa	5.95				7	16.15	0.433	Model	Yeates et al. 1994
Hg	Madison, Wisconsi	1973 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	0.65	0.0761	8.541	Model	Helmke et. al., 1979
Hg	Madison, Wisconsi	1973 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	0.42	0.2444	1.718	Model	Helmke et. al., 1979
Hg	Madison, Wisconsi	1971 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	0.45	0.0761	5.913	Model	Helmke et. al., 1979
Hg	Madison, Wisconsi	1972 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	0.4	0.0761	5.256	Model	Helmke et. al., 1979
Hg	Madison, Wisconsi	1972 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	0.66	0.2444	2.700	Model	Helmke et. al., 1979
Hg	Madison, Wisconsi	1972 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	0.6	0.02	30.000	Model	Helmke et. al., 1979
Hg	Madison, Wisconsi	1971 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	0.5	0.02	25.000	Model	Helmke et. al., 1979
Hg	Madison, Wisconsi	1973 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	0.66	0.02	33.000	Model	Helmke et. al., 1979
Hg	Madison, Wisconsi	1972 30 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5922.05	0.68	0.1322	5.144	Model	Helmke et. al., 1979
Hg	Madison, Wisconsi	1973 30 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5922.05	0.52	0.1322	3.933	Model	Helmke et. al., 1979
Hg	Madison, Wisconsi	1971 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	0.76	0.2444	3.110	Model	Helmke et. al., 1979
Hg	Great Britain	10-30km from chl	L. terrestris	yes						0.041	0.106	0.387	Model	Bull et. al., 1977
Hg	Great Britain	0.5km from chlor	L. terrestris	yes						1.29	3.81	0.339	Model	Bull et. al., 1977
Hg	Hungary	lab	E. foetida	yes	peaty marshland soil/horse manure					156			Model	Fischer and Koszorus, 1992
Hg	East Tennessee	Oak Ridge	Oligochaeta	yes						0.675	0.21	3.214	Model	Talmadge and Walton, 1993
Hg	East Tennessee	Oak Ridge	Oligochaeta	yes						13.125	269	0.049	Model	Talmadge and Walton, 1993
Mn	Madison, Wisconsi	1973 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	29	969.62	0.030	Model	Helmke et. al., 1979
Mn	Madison, Wisconsi	1972 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	34	969.62	0.035	Model	Helmke et. al., 1979
Mn	Madison, Wisconsi	1971 60 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			6544.1	81	969.62	0.084	Model	Helmke et. al., 1979
Mn	Madison, Wisconsi	1973 30 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5922.05	37	967.31	0.038	Model	Helmke et. al., 1979
Mn	Madison, Wisconsi	1973 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	24	965	0.025	Model	Helmke et. al., 1979
Mn	Madison, Wisconsi	1972 30 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5922.05	49	967.31	0.051	Model	Helmke et. al., 1979
Mn	Madison, Wisconsi	1973 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	41	966.155	0.042	Model	Helmke et. al., 1979
Mn	Madison, Wisconsi	1972 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	220	966.155	0.228	Model	Helmke et. al., 1979
Mn	Madison, Wisconsi	1971 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	29	965	0.030	Model	Helmke et. al., 1979
Mn	Madison, Wisconsi	1972 0 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5300	75	965	0.078	Model	Helmke et. al., 1979
Mn	Madison, Wisconsi	1971 15 ton/ha	A. tuberculata	yes	silt loam	4.8-5.2			5611.025	56	966.155	0.058	Model	Helmke et. al., 1979
Mn	Great Britain	Borth	D. veneta	yes					32129	15	226	0.066	Model	Ireland 1979
Mn	Great Britain	Borth	L. rubellus	yes					32129	28	226	0.124	Model	Ireland 1979
Mn	Great Britain	Borth	E. tetraeda	yes					32129	16	226	0.071	Model	Ireland 1979
Mn	Great Britain	Dolgelllau	L. rubellus	yes					4921	27	164	0.165	Model	Ireland 1979
Mn	Great Britain	Cwmystwyth	L. rubellus	yes					998	82	1300	0.063	Model	Ireland 1979
Ni	Pennsylvania	13 sludged	L. terrestris	yes	silt loam	5.5	3.8	11		15	24	0.625	Model	Beyer et al. 1982
Ni	Pennsylvania	4 control	A. tuberculata	yes	silt loam	5.4	3	9		15	12	1.250	Model	Beyer et al. 1982
Ni	Pennsylvania	1 sludged	L. terretris	yes	loam	5.5				13	17	0.765	Model	Beyer et al. 1982
Ni	Pennsylvania	1 control	A. tuberculata	yes	loam	5.9				16	14	1.143	Model	Beyer et al. 1982
Ni	Pennsylvania	9 control	A. turgida, L. terrestr	yes	loam	4.9	2.5	8		11	13	0.846	Model	Beyer et al. 1982
Ni	Pennsylvania	4 sludged	A. longa	yes	silt loam	4.9	4.9	13		14	18	0.778	Model	Beyer et al. 1982

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Ni	Pennsylvania	9 sludged	A. turgida, L. terrestr	yes	loam	4.6	2.8	8		14	20	0.700	Model	Beyer et al. 1982
Ni	Pennsylvania	13 control	L. terrestris	yes	silt loam	5.3	2.6	10		12	16	0.750	Model	Beyer et al. 1982
Ni	Maryland	B-W Parkway B	mix	yes	silt-clay	6.98	4.96			32.3	11.4	2.833	Model	Gish and Christensen 1973
Ni	Maryland	US-1 D	mix	yes	silt-loam	6.96	6.36			17.3	19.2	0.901	Model	Gish and Christensen 1973
Ni	Maryland	B-W Parkway A	mix	yes	silt-clay	9.96	7.3			26.8	25.3	1.059	Model	Gish and Christensen 1973
Ni	Maryland	US-1 C	mix	yes	loamy sand	6.88	4.8			25.3	13.4	1.888	Model	Gish and Christensen 1973
Ni	Maryland	Patuxent E	mix	yes	mix	6.86	3.28			25.2	13.6	1.853	Model	Gish and Christensen 1973
Ni	Illinois	mine - w/o sludge	A. tuberculata	yes	silt clay loam					3.2	40	0.080	Model	Pietz et al. 1984
Ni	Illinois	mine - w/ sludge	A. tuberculata	yes	silt clay loam					3.2	57	0.056	Model	Pietz et al. 1984
Ni	Illinois	nonmine - w/o slu	A. tuberculata and L.	yes	silt loam					1.2	36	0.033	Model	Pietz et al. 1984
Ni	Illinois	nonmine - w sludg	A. tuberculata and L.	yes	silt loam					2.8	35	0.080	Model	Pietz et al. 1984
Pb	Netherlands	Plot 6	A. chlorotica	yes		6				5.8	38.9	0.149	Model	Andersen 1979
Pb	Netherlands	Plot 5	A. caliginosa	yes		5.8				6.4	28.2	0.227	Model	Andersen 1979
Pb	Netherlands	Plot 6	L. terrestris	yes		6				5.1	38.9	0.131	Model	Andersen 1979
Pb	Netherlands	Plot 6	A. caliginosa	yes		6				9.2	38.9	0.237	Model	Andersen 1979
Pb	Netherlands	Plot 5	A. chlorotica	yes		5.8				4.6	28.2	0.163	Model	Andersen 1979
Pb	Netherlands	Plot 5	A. rosea	yes		5.8				4.7	28.2	0.167	Model	Andersen 1979
Pb	Netherlands	Plot 1	A. rosea	yes		5.9				3.2	15.3	0.209	Model	Andersen 1979
Pb	Netherlands	Plot 1	L. terrestris	yes		5.9				11.5	15.3	0.752	Model	Andersen 1979
Pb	Netherlands	Plot 5	A. longa	yes		5.8				4.6	28.2	0.163	Model	Andersen 1979
Pb	Netherlands	Plot 7	A. rosea	yes		5.7				3.2	16.2	0.198	Model	Andersen 1979
Pb	Netherlands	Plot 7	A. longa	yes		5.7				5.6	16.2	0.346	Model	Andersen 1979
Pb	Netherlands	Plot 1	A. longa	yes		5.9				3.8	15.3	0.248	Model	Andersen 1979
Pb	Netherlands	Plot 6	A. rosea	yes		6				5.5	38.9	0.141	Model	Andersen 1979
Pb	Netherlands	Plot 5	L. terrestris	yes		5.8				11	28.2	0.390	Model	Andersen 1979
Pb	Netherlands	Plot 6	A. longa	yes		6				5.9	38.9	0.152	Model	Andersen 1979
Pb	Denmark	Copenhagen gard	L. terrestris	yes					23.5	24	197	0.122	Model	Andersen and Laursen 1982
Pb	Denmark	sludge-treated plo	A. longa	yes					28000	5.9	39	0.151	Model	Andersen and Laursen 1982
Pb	Maryland	Tow A	E. loennbergi (a)	yes	silt loam	4.7	8.4			560	9.7	57.732	Model	Beyer and Cromartie 1987
Pb	Maryland	Con B	E. loennbergi (a)	yes	silt loam	4.9	4.9			800	6.1	131.148	Model	Beyer and Cromartie 1987
Pb	Virginia	Nat E	A. turgida (c)	yes	stony loam	5.6	9.7			2	30	0.067	Model	Beyer and Cromartie 1987
Pb	Maryland	Con A	E. loennbergi (a)	yes	silt loam	5	2.7			190	11	17.273	Model	Beyer and Cromartie 1987
Pb	Maryland	Ind H1	A. trapezoides (c)	yes	loam	6.4	3.2			0.79	7.3	0.108	Model	Beyer and Cromartie 1987
Pb	Pennsylvania	Min B	A. longa (c)	yes	extremely stc	5.5	7.2			5.6	38	0.147	Model	Beyer and Cromartie 1987
Pb	Maryland	Ind D	A. trapezoides (c)	yes	soil in park	5.8	7.5			8.9	38	0.234	Model	Beyer and Cromartie 1987
Pb	Pennsylvania	Min C2	L. terrestris (c)	yes	material in d	7	8.9			7.2	140	0.051	Model	Beyer and Cromartie 1987
Pb	Maryland	Ind D	A. trapezoides (a)	yes	soil in park	5.8	7.5			7.6	38	0.200	Model	Beyer and Cromartie 1987
Pb	Maryland	Ind G	L. rubellus (c)	yes	silt loam	6.6	4.9			33	46	0.717	Model	Beyer and Cromartie 1987
Pb	Maryland	Ind G	A. trapezoides (c)	yes	silt loam	6.6	4.9			18	46	0.391	Model	Beyer and Cromartie 1987
Pb	Maryland	Ind B	L. terrestris (a)	yes	soil in park	6	8.1			15	120	0.125	Model	Beyer and Cromartie 1987
Pb	Pennsylvania	Min C4	L. terrestris (a)	yes	loam	4.6	15.4			9.4	120	0.078	Model	Beyer and Cromartie 1987
Pb	Pennsylvania	Min B	A. tuberculata (c)	yes	extremely stc	5.5	7.2			30	38	0.789	Model	Beyer and Cromartie 1987
Pb	Maryland	Nat A	E.carolinensis (c)	yes	silt loam	4.7	3.6			2100	9.2	228.261	Model	Beyer and Cromartie 1987
Pb	Maryland	Nat B	E. loennbergi (c)	yes	silt loam	4.8	3.5			480	11	43.636	Model	Beyer and Cromartie 1987
Pb	Maryland	Nat C	E. loennbergi (c)	yes	silt loam	4.7	5.1			640	11	58.182	Model	Beyer and Cromartie 1987
Pb	Maryland	Ind A	Aporrectodea spp. (c	yes	soil in park	5.4	7.7			12	58	0.207	Model	Beyer and Cromartie 1987
Pb	Maryland	Tow B	E. loennbergi (c)	yes	silt loam	5	4.3			1200	14	85.714	Model	Beyer and Cromartie 1987
Pb	Pennsylvania	Min C1	Pheretima sp. (c)	yes	material in d	6.9	18			8.6	780	0.011	Model	Beyer and Cromartie 1987
Pb	Pennsylvania	Ind F1	A. longa (c)	yes	soil in park	5.6	13			47	350	0.134	Model	Beyer and Cromartie 1987
Pb	Pennsylvania	Min C2	A. tuberculata (a+c)	yes	material in d	7	8.9			4.3	140	0.031	Model	Beyer and Cromartie 1987
Pb	Maryland	Ind C	A. longa (c)	yes	soil in park	7.2	7.1			14	228	0.061	Model	Beyer and Cromartie 1987
Pb	Maryland	Ind H2	A. trapezoides (c)	yes	loam	5.7	7.6			6	11	0.545	Model	Beyer and Cromartie 1987

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Pb	Pennsylvania	Ind F2	A. longa (c)	yes	soil in park	5.4	6.9			26	74	0.351	Model	Beyer and Cromartie 1987
Pb	Pennsylvania	Ind F2	A. tuberculata (c)	yes	soil in park	5.4	6.9			320	74	4.324	Model	Beyer and Cromartie 1987
Pb	Maryland	Nat D	E. loennbergi (c)	yes	silt loam	5.1	5.5			240	4.2	57.143	Model	Beyer and Cromartie 1987
Pb	Maryland	Nat F	E. loennbergi (a)	yes	muck	4.2	14.7			67	15	4.467	Model	Beyer and Cromartie 1987
Pb	Virginia	Nat G	Sparganophilus eise	yes	alluvium	7.3	3			1.4	5.1	0.275	Model	Beyer and Cromartie 1987
Pb	Maryland	Min A	L. terrestris (c)	yes	very stony lo	6.9	10.2			3.2	120	0.027	Model	Beyer and Cromartie 1987
Pb	Maryland	Ind E	A. trapezoides (c)	yes	soil in park	7.2	5.2			1.2	51	0.024	Model	Beyer and Cromartie 1987
Pb	Pennsylvania	Min C3	L. terrestris (a+c)	yes	material in d	6.6	11			49	2700	0.018	Model	Beyer and Cromartie 1987
Pb	Maryland	Nat B	L. rubellus (c)	yes	silt loam	4.8	3.5			36	11	3.273	Model	Beyer and Cromartie 1987
Pb	Maryland	Ind E	A. trapezoides (a)	yes	soil in park	7.2	5.2			1.4	51	0.027	Model	Beyer and Cromartie 1987
Pb	Maryland	Nat F	E. loennbergi (c)	yes	muck	4.2	14.7			130	15	8.667	Model	Beyer and Cromartie 1987
Pb	Pennsylvania	9 sludged	A. turgida, L. terrestr	yes	loam	4.6	2.8	8		16	23	0.696	Model	Beyer et al. 1982
Pb	Pennsylvania	1 control	A. tuberculata	yes	loam	5.9				14	16	0.875	Model	Beyer et al. 1982
Pb	Pennsylvania	4 sludged	A. longa	yes	silt loam	4.9	4.9	13		28	43	0.651	Model	Beyer et al. 1982
Pb	Pennsylvania	4 control	A. tuberculata	yes	silt loam	5.4	3	9		24	34	0.706	Model	Beyer et al. 1982
Pb	Pennsylvania	1 sludged	L. terretris	yes	loam	5.5				17	41	0.415	Model	Beyer et al. 1982
Pb	Pennsylvania	13 sludged	L. terrestris	yes	silt loam	5.5	3.8	11		22	22	1.000	Model	Beyer et al. 1982
Pb	Pennsylvania	13 control	L. terrestris	yes	silt loam	5.3	2.6	10		16	23	0.696	Model	Beyer et al. 1982
Pb	Pennsylvania	9 control	A. turgida, L. terrestr	yes	loam	4.9	2.5	8		16	22	0.727	Model	Beyer et al. 1982
Pb	Pennsylvania	Bake oven knob	D. rubida	yes	very stoney l	5	23	19		0.1	150	0.001	Model	Beyer et al. 1985
Pb	Pennsylvania	Bake oven knob	E. carolinensis	yes	very stoney l	5	23	19		310	150	2.067	Model	Beyer et al. 1985
Pb	Great Britain	Llantrisant A b	L. rubellus	yes		6.6			4910	1311	6260	0.209	Model	Corp and Morgan 1991
Pb	Great Britain	Cwmystwyth 1 f	L. rubellus	yes		6.4			62100	4178	13900	0.301	Model	Corp and Morgan 1991
Pb	Great Britain	Llantrisant B c	L. rubellus	yes		5.2			3200	2953	11900	0.248	Model	Corp and Morgan 1991
Pb	Great Britain	Cwmystwyth 3 h	L. rubellus	yes		6			15400	1415	4640	0.305	Model	Corp and Morgan 1991
Pb	Great Britain	Cwmystwyth 2 g	L. rubellus	yes		3.5			176000	2603	667	3.903	Model	Corp and Morgan 1991
Pb	Great Britain	Castell e	L. rubellus	yes		5.3			274	420	445	0.944	Model	Corp and Morgan 1991
Pb	Great Britain	pennerly k	L. rubellus	yes		8.1			176000	1772	16700	0.106	Model	Corp and Morgan 1991
Pb	Great Britain	Roman Gravels l	L. rubellus	yes		7.2			209000	1492	7230	0.206	Model	Corp and Morgan 1991
Pb	Great Britain	Dinas Powys a	L. rubellus	yes		5.8			2761	26	91	0.286	Model	Corp and Morgan 1991
Pb	Great Britain	Snailbeach i	L. rubellus	yes		6.4			55500	1478	7320	0.202	Model	Corp and Morgan 1991
Pb	Poland	near street	L. terrestris	yes		6.1	7			0	156.67	0.000	Model	Czarnowska and Jopkiewicz
Pb	Poland	200m from st	L. terrestris	yes		2.8	6.4			0	44.33	0.000	Model	Czarnowska and Jopkiewicz
Pb	Poland	Control	L. terrestris	yes		3.1	6			0	20	0.000	Model	Czarnowska and Jopkiewicz
Pb	Germany	Worben w/o sludg	mix	yes						56.25	55	1.023	Model	Diercxsens et al. 1985
Pb	Germany	Worben w/sludge	mix	yes						83.125	50	1.663	Model	Diercxsens et al. 1985
Pb	Maryland	B-W Parkway B	mix	yes	silt-clay	6.98	4.96			106.5	93.4	1.140	Model	Gish and Christensen 1973
Pb	Maryland	US-1 D	mix	yes	silt-loam	6.96	6.36			76.7	83.5	0.919	Model	Gish and Christensen 1973
Pb	Maryland	US-1 C	mix	yes	loamy sand	6.88	4.8			64	63.7	1.005	Model	Gish and Christensen 1973
Pb	Maryland	Patuxent E	mix	yes	mix	6.86	3.28			12	14.3	0.839	Model	Gish and Christensen 1973
Pb	Maryland	B-W Parkway A	mix	yes	silt-clay	9.96	7.3			120.9	227.8	0.531	Model	Gish and Christensen 1973
Pb	Great Britain	Dolgelllau	L. rubellus	yes					4921	28	42	0.667	Model	Ireland 1979
Pb	Great Britain	Borth	L. rubellus	yes					32129	9	629	0.014	Model	Ireland 1979
Pb	Great Britain	Borth	E. tetraeda	yes					32129	20	629	0.032	Model	Ireland 1979
Pb	Great Britain	Borth	D. veneta	yes					32129	18	629	0.029	Model	Ireland 1979
Pb	Great Britain	Cwmystwyth	L. rubellus	yes					998	3592	1314	2.734	Model	Ireland 1979
Pb	Netherlands	Budel pasture 2	L. terrestris	yes	podzolic san	6	7.3			25	115	0.217	Model	Ma 1987
Pb	Netherlands	Arnhem pasture	L. terrestris	yes	podzolic san	4	5.7			12	24	0.500	Model	Ma 1987
Pb	Netherlands	Budel pasture 3	L. terrestris	yes	podzolic san	6.5	10.2			25	135	0.185	Model	Ma 1987
Pb	Great Britain	Minera-2	L. rubellus	yes					69440	990	5090	0.194	Model	Morgan and Morgan 1991
Pb	Great Britain	Cwmystwyth	L. rubellus	yes					170	2580	850	3.035	Model	Morgan and Morgan 1991
Pb	Great Britain	Cwn Rheidol	D. rubidus	yes					6780	40	220	0.182	Model	Morgan and Morgan 1991

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Pb	Great Britain	Cwn Rheidol	L. rubellus	yes					6780	14	220	0.064	Model	Morgan and Morgan 1991
Pb	Great Britain	Snailbeach	L. rubellus	yes					48920	2150	10050	0.214	Model	Morgan and Morgan 1991
Pb	Great Britain	Wemyss	L. rubellus	yes					1390	10410	12370	0.842	Model	Morgan and Morgan 1991
Pb	Great Britain	Draethen F	L. rubellus	yes					58120	700	16590	0.042	Model	Morgan and Morgan 1991
Pb	Great Britain	Minera-2	D. rubidus	yes					69440	2050	5090	0.403	Model	Morgan and Morgan 1991
Pb	Great Britain	Cwmystwyth	D. rubidus	yes					170	7780	850	9.153	Model	Morgan and Morgan 1991
Pb	Great Britain	Snailbeach	D. rubidus	yes					48920	3080	10050	0.306	Model	Morgan and Morgan 1991
Pb	Great Britain	Llantrisant	L. rubellus	yes					5080	780	6930	0.113	Model	Morgan and Morgan 1991
Pb	Great Britain	Draethen M	L. rubellus	yes					26420	630	5330	0.118	Model	Morgan and Morgan 1991
Pb	Great Britain	Wemyss	D. rubidus	yes					1390	13042	12370	1.054	Model	Morgan and Morgan 1991
Pb	Great Britain	Llantrisant	D. rubidus	yes					5080	1340	6930	0.193	Model	Morgan and Morgan 1991
Pb	Great Britain	Draethen F	D. rubidus	yes					58120	2620	16590	0.158	Model	Morgan and Morgan 1991
Pb	Great Britain	Minera-1	D. rubidus	yes					91850	3070	24550	0.125	Model	Morgan and Morgan 1991
Pb	Great Britain	Minera-1	L. rubellus	yes					91850	1240	24550	0.051	Model	Morgan and Morgan 1991
Pb	Great Britain	Draethen M	D. rubidus	yes					26420	3380	5330	0.634	Model	Morgan and Morgan 1991
Pb	Great Britain	Dinas Powys	D. rubidus	yes					1790	12	170	0.071	Model	Morgan and Morgan 1991
Pb	Great Britain	Dinas Powys	L. rubellus	yes					1790	4	170	0.024	Model	Morgan and Morgan 1991
Pb	Great Britain	Wales	D. rubidus	yes		6.8			46142	813	5486	0.148	Model	Morgan and Morris 1982
Pb	Great Britain	Wales	L. rubellus	yes		6.8			46142	2259	5486	0.412	Model	Morgan and Morris 1982
Pb	Illinois	nonmine - w sludg	A. tuberculata and L.	yes	silt loam					0.55	28	0.020	Model	Pietz et al. 1984
Pb	Illinois	mine - w/ sludge	A. tuberculata	yes	silt clay loam					0.5	18	0.028	Model	Pietz et al. 1984
Pb	Illinois	mine - w/o sludge	A. tuberculata	yes	silt clay loam					0.44	13	0.034	Model	Pietz et al. 1984
Pb	Illinois	nonmine - w/o slu	A. tuberculata and L.	yes	silt loam					0.2	18	0.011	Model	Pietz et al. 1984
Pb	East Tennessee	Emory	mix	yes						5.5	50	0.110	Model	Van Hook 1974
Pb	East Tennessee	Tarklin	mix	yes						4	27	0.148	Model	Van Hook 1974
Pb	East Tennessee	Bodine	mix	yes						4.6	26	0.177	Model	Van Hook 1974
Pb	East Tennessee	Claiborne	mix	yes						5.4	24	0.225	Model	Van Hook 1974
Pb	East Tennessee	Linside	mix	yes						4	18	0.222	Model	Van Hook 1974
Pb	East Tennessee	Captina	mix	yes						4.5	15	0.300	Model	Van Hook 1974
PCB	Germany	Chardonne	mix	yes						3587.5	55	65.227	Model	Diercxsens et al. 1985
PCB	Germany	Chardonne	mix	yes						2062.5	139	14.838	Model	Diercxsens et al. 1985
PCB	Germany	Chardonne	mix	yes						3218.75	137	23.495	Model	Diercxsens et al. 1985
PCB	Germany	Buren	mix	yes						95	12.5	7.600	Model	Diercxsens et al. 1985
PCB	Germany	Buren	mix	yes						58.75	8	7.344	Model	Diercxsens et al. 1985
PCB	Germany	Buren	mix	yes						87.5	5.5	15.909	Model	Diercxsens et al. 1985
PCB	Switzerland	treated	Nicodrilus	yes						174	13	13.385	Model	Kreis et al. 1987
PCB	Switzerland	treated	Nicodrilus	yes						57	5	11.400	Model	Kreis et al. 1987
PCB	Switzerland	treated	Nicodrilus	yes						22	4	5.500	Model	Kreis et al. 1987
PCB	Switzerland	untreated	Nicodrilus	yes						11	1	11.000	Model	Kreis et al. 1987
PCB	Switzerland	untreated	Nicodrilus	yes						22	3	7.333	Model	Kreis et al. 1987
PCB	Switzerland	untreated	Nicodrilus	yes						31	3	10.333	Model	Kreis et al. 1987
PCB	Switzerland	untreated	Nicodrilus	yes						13	3	4.333	Model	Kreis et al. 1987
PCB	Switzerland	treated	Nicodrilus	yes						61	6	10.167	Model	Kreis et al. 1987
PCB	Switzerland	treated	Nicodrilus	yes						76	6	12.667	Model	Kreis et al. 1987
PCB	Switzerland	untreated	Nicodrilus	yes						19	3	6.333	Model	Kreis et al. 1987
Zn	Pennsylvania	Min C1	Pheretima sp. (c)	yes	material in d	6.9	18			200	2100	0.095	Model	Beyer and Cromartie 1987
Zn	Pennsylvania	Min C4	L. terrestris (a)	yes	loam	4.6	15.4			390	100	3.900	Model	Beyer and Cromartie 1987
Zn	Pennsylvania	Min B	A. tuberculata (c)	yes	extremely sto	5.5	7.2			390	100	3.900	Model	Beyer and Cromartie 1987
Zn	Pennsylvania	Min B	A. longa (c)	yes	extremely sto	5.5	7.2			510	100	5.100	Model	Beyer and Cromartie 1987
Zn	Maryland	Ind E	A. trapezoides (c)	yes	soil in park	7.2	5.2			830	100	8.300	Model	Beyer and Cromartie 1987
Zn	Virginia	Nat G	Sparganophilus eisei	yes	alluvium	7.3	3			120	77	1.558	Model	Beyer and Cromartie 1987
Zn	Pennsylvania	Ind F2	A. longa (c)	yes	soil in park	5.4	6.9			700	100	7.000	Model	Beyer and Cromartie 1987

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Zn	Maryland	Ind G	A. trapezoides (c)	yes	silt loam	6.6	4.9			580	64	9.063	Model	Beyer and Cromartie 1987
Zn	Maryland	Ind G	L. rubellus (c)	yes	silt loam	6.6	4.9			1600	64	25.000	Model	Beyer and Cromartie 1987
Zn	Maryland	Ind D	A. trapezoides (a)	yes	soil in park	5.8	7.5			670	52	12.885	Model	Beyer and Cromartie 1987
Zn	Pennsylvania	Ind F2	A. tuberculata (c)	yes	soil in park	5.4	6.9			890	100	8.900	Model	Beyer and Cromartie 1987
Zn	Maryland	Ind A	Aporrectodea spp. (c	yes	soil in park	5.4	7.7			530	100	5.300	Model	Beyer and Cromartie 1987
Zn	Maryland	Ind E	A. trapezoides (a)	yes	soil in park	7.2	5.2			660	100	6.600	Model	Beyer and Cromartie 1987
Zn	Pennsylvania	Min C3	L. terrestris (a+c)	yes	material in d	6.6	11			680	2500	0.272	Model	Beyer and Cromartie 1987
Zn	Virginia	Nat E	A. turgida (c)	yes	stony loam	5.6	9.7			420	220	1.909	Model	Beyer and Cromartie 1987
Zn	Maryland	Tow B	E. loennbergi (c)	yes	silt loam	5	4.3			690	270	2.556	Model	Beyer and Cromartie 1987
Zn	Maryland	Con A	E. loennbergi (a)	yes	silt loam	5	2.7			340	261	1.303	Model	Beyer and Cromartie 1987
Zn	Pennsylvania	Ind F1	A. longa (c)	yes	soil in park	5.6	13			890	260	3.423	Model	Beyer and Cromartie 1987
Zn	Pennsylvania	Min C2	L. terrestris (c)	yes	material in d	7	8.9			670	700	0.957	Model	Beyer and Cromartie 1987
Zn	Maryland	Ind B	L. terrestris (a)	yes	soil in park	6	8.1			960	110	8.727	Model	Beyer and Cromartie 1987
Zn	Pennsylvania	Min C2	A. tuberculata (a+c)	yes	material in d	7	8.9			950	700	1.357	Model	Beyer and Cromartie 1987
Zn	Maryland	Min A	L. terrestris (c)	yes	very stony lo	6.9	10.2			390	120	3.250	Model	Beyer and Cromartie 1987
Zn	Maryland	Tow A	E. loennbergi (a)	yes	silt loam	4.7	8.4			460	110	4.182	Model	Beyer and Cromartie 1987
Zn	Maryland	Ind D	A. trapezoides (c)	yes	soil in park	5.8	7.5			480	52	9.231	Model	Beyer and Cromartie 1987
Zn	Maryland	Ind C	A. longa (c)	yes	soil in park	7.2	7.1			1100	320	3.438	Model	Beyer and Cromartie 1987
Zn	Maryland	Nat B	E. loennbergi (c)	yes	silt loam	4.8	3.5			440	25	17.600	Model	Beyer and Cromartie 1987
Zn	Maryland	Ind H1	A. trapezoides (c)	yes	loam	6.4	3.2			320	28	11.429	Model	Beyer and Cromartie 1987
Zn	Maryland	Nat C	E. loennbergi (c)	yes	silt loam	4.7	5.1			280	40	7.000	Model	Beyer and Cromartie 1987
Zn	Maryland	Nat B	L. rubellus (c)	yes	silt loam	4.8	3.5			650	25	26.000	Model	Beyer and Cromartie 1987
Zn	Maryland	Nat D	E. loennbergi (c)	yes	silt loam	5.1	5.5			240	25	9.600	Model	Beyer and Cromartie 1987
Zn	Maryland	Nat F	E. loennbergi (a)	yes	muck	4.2	14.7			325	29	11.207	Model	Beyer and Cromartie 1987
Zn	Maryland	Nat A	E.carolinensis (c)	yes	silt loam	4.7	3.6			200	23	8.696	Model	Beyer and Cromartie 1987
Zn	Maryland	Nat F	E. loennbergi (c)	yes	muck	4.2	14.7			450	29	15.517	Model	Beyer and Cromartie 1987
Zn	Maryland	Ind H2	A. trapezoides (c)	yes	loam	5.7	7.6			660	34	19.412	Model	Beyer and Cromartie 1987
Zn	Maryland	Con B	E. loennbergi (a)	yes	silt loam	4.9	4.9			380	28	13.571	Model	Beyer and Cromartie 1987
Zn	Pennsylvania	9 control	A. turgida, L. terrestr	yes	loam	4.9	2.5	8		225	51	4.412	Model	Beyer et al. 1982
Zn	Pennsylvania	1 sludged	L. terretris	yes	loam	5.5				393	175	2.246	Model	Beyer et al. 1982
Zn	Pennsylvania	13 control	L. terrestris	yes	silt loam	5.3	2.6	10		186	56	3.321	Model	Beyer et al. 1982
Zn	Pennsylvania	4 control	A. tuberculata	yes	silt loam	5.4	3	9		241	67	3.597	Model	Beyer et al. 1982
Zn	Pennsylvania	1 control	A. tuberculata	yes	loam	5.9				256	51	5.020	Model	Beyer et al. 1982
Zn	Pennsylvania	9 sludged	A. turgida, L. terrestr	yes	loam	4.6	2.8	8		353	86	4.105	Model	Beyer et al. 1982
Zn	Pennsylvania	13 sludged	L. terrestris	yes	silt loam	5.5	3.8	11		430	137	3.139	Model	Beyer et al. 1982
Zn	Pennsylvania	4 sludged	A. longa	yes	silt loam	4.9	4.9	13		702	150	4.680	Model	Beyer et al. 1982
Zn	Pennsylvania	Bake oven knob	E. carolinensis	yes	very stoney l	5	23	19		280	230	1.217	Model	Beyer et al. 1985
Zn	Pennsylvania	Bake oven knob	D. rubida	yes	very stoney l	5	23	19		300	230	1.304	Model	Beyer et al. 1985
Zn	British Columbia	field	Aporrectodea spp.	yes	silty clay loar	4.1				380	83	4.578	Model	Carter 1983
Zn	British Columbia	field	L. rubellus (mature a	yes	silty clay loar	4.1				320	83	3.855	Model	Carter 1983
Zn	British Columbia	field	A. chlorotica	yes	silty clay loar	4.1				210	83	2.530	Model	Carter 1983
Zn	British Columbia	field	L. rubellus (immatur	yes	silty clay loar	4.1				260	83	3.133	Model	Carter 1983
Zn	Great Britain	Snailbeach	L. rubellus	yes		6.4			55500	2510	79300	0.032	Model	Corp and Morgan 1991
Zn	Great Britain	Dinas Powys	L. rubellus	yes		5.8			1860	498	416	1.197	Model	Corp and Morgan 1991
Zn	Great Britain	Cwmystwyth 2	L. rubellus	yes		3.5			274	719	520	1.383	Model	Corp and Morgan 1991
Zn	Great Britain	Llantrisant B	L. rubellus	yes		5.2			209000	788	792	0.995	Model	Corp and Morgan 1991
Zn	Great Britain	Llantrisant A	L. rubellus	yes		6.6			4910	2349	904	2.598	Model	Corp and Morgan 1991
Zn	Great Britain	Cwmystwyth 1	L. rubellus	yes		6.4			62100	5170	183000	0.028	Model	Corp and Morgan 1991
Zn	Great Britain	pennerly	L. rubellus	yes		8.1			176000	3270	52500	0.062	Model	Corp and Morgan 1991
Zn	Great Britain	Roman Gravels	L. rubellus	yes		7.2			209000	5270	96800	0.054	Model	Corp and Morgan 1991
Zn	Great Britain	Cwmystwyth 3	L. rubellus	yes		6			15400	2088	3180	0.657	Model	Corp and Morgan 1991
Zn	Great Britain	Castell	L. rubellus	yes		5.3			1860	3450	4650	0.742	Model	Corp and Morgan 1991

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Zn	Poland	Control	L. terrestris	yes		3.1	6			0	40	0.000	Model	Czarnowska and Jopkiewicz
Zn	Poland	near street	L. terrestris	yes		6.1	7			0	223.33	0.000	Model	Czarnowska and Jopkiewicz
Zn	Poland	200m from st	L. terrestris	yes		2.8	6.4			0	88.33	0.000	Model	Czarnowska and Jopkiewicz
Zn	Germany	Worben w/o sludg	mix	yes						565.625	64	8.838	Model	Diercxsens et al. 1985
Zn	Germany	Worben w/sludge	mix	yes						870.625	78.7	11.063	Model	Diercxsens et al. 1985
Zn	Maryland	US-1 D	mix	yes	silt-loam	6.96	6.36			324.6	81.2	3.998	Model	Gish and Christensen 1973
Zn	Maryland	B-W Parkway A	mix	yes	silt-clay	9.96	7.3			520.1	134.6	3.864	Model	Gish and Christensen 1973
Zn	Maryland	Patuxent E	mix	yes	mix	6.86	3.28			223.8	42.3	5.291	Model	Gish and Christensen 1973
Zn	Maryland	US-1 C	mix	yes	loamy sand	6.88	4.8			296.7	57.5	5.160	Model	Gish and Christensen 1973
Zn	Maryland	B-W Parkway B	mix	yes	silt-clay	6.98	4.96			397.8	55	7.233	Model	Gish and Christensen 1973
Zn	Great Britain	Borth	L. rubellus	yes					32129	676	992	0.681	Model	Ireland 1979
Zn	Great Britain	Borth	D. veneta	yes					32129	134	992	0.135	Model	Ireland 1979
Zn	Great Britain	Cwmystwyth	L. rubellus	yes					998	739	138	5.355	Model	Ireland 1979
Zn	Great Britain	Dolgelllau	L. rubellus	yes					4921	416	100	4.160	Model	Ireland 1979
Zn	Great Britain	Borth	E. tetraeda	yes					32129	353	992	0.356	Model	Ireland 1979
Zn	Netherlands	Arnhem pasture	L. terrestris	yes	podzolic sand	4	5.7			730	35	20.857	Model	Ma 1987
Zn	Netherlands	Budel pasture 2	L. terrestris	yes	podzolic sand	6	7.3			1474	737	2.000	Model	Ma 1987
Zn	Netherlands	Budel pasture 3	L. terrestris	yes	podzolic sand	6.5	10.2			1789	1015	1.763	Model	Ma 1987
Zn	Great Britain	Draethen F	D. rubidus	yes					58120	870	5470	0.159	Model	Morgan and Morgan 1991
Zn	Great Britain	Cwmystwyth	L. rubellus	yes					170	460	160	2.875	Model	Morgan and Morgan 1991
Zn	Great Britain	Minera-1	D. rubidus	yes					91850	1110	44970	0.025	Model	Morgan and Morgan 1991
Zn	Great Britain	Minera-1	L. rubellus	yes					91850	1300	44970	0.029	Model	Morgan and Morgan 1991
Zn	Great Britain	Cwmystwyth	D. rubidus	yes					170	460	160	2.875	Model	Morgan and Morgan 1991
Zn	Great Britain	Snailbeach	L. rubellus	yes					48920	3870	6910	0.560	Model	Morgan and Morgan 1991
Zn	Great Britain	Cwn Rheidol	L. rubellus	yes					6780	610	210	2.905	Model	Morgan and Morgan 1991
Zn	Great Britain	Dinas Powys	D. rubidus	yes					1790	310	190	1.632	Model	Morgan and Morgan 1991
Zn	Great Britain	Wemyss	L. rubellus	yes					1390	1140	690	1.652	Model	Morgan and Morgan 1991
Zn	Great Britain	Snailbeach	D. rubidus	yes					48920	1130	6910	0.164	Model	Morgan and Morgan 1991
Zn	Great Britain	Draethen F	L. rubellus	yes					58120	2360	5470	0.431	Model	Morgan and Morgan 1991
Zn	Great Britain	Llantrisant	L. rubellus	yes					5080	1300	2030	0.640	Model	Morgan and Morgan 1991
Zn	Great Britain	Llantrisant	D. rubidus	yes					5080	765	2030	0.377	Model	Morgan and Morgan 1991
Zn	Great Britain	Wemyss	D. rubidus	yes					1390	490	690	0.710	Model	Morgan and Morgan 1991
Zn	Great Britain	Dinas Powys	L. rubellus	yes					1790	390	190	2.053	Model	Morgan and Morgan 1991
Zn	Great Britain	Cwn Rheidol	D. rubidus	yes					6780	470	210	2.238	Model	Morgan and Morgan 1991
Zn	Great Britain	Minera-2	D. rubidus	yes					69440	690	12410	0.056	Model	Morgan and Morgan 1991
Zn	Great Britain	Minera-2	L. rubellus	yes					69440	1500	12410	0.121	Model	Morgan and Morgan 1991
Zn	Great Britain	Draethen M	L. rubellus	yes					26420	3110	16370	0.190	Model	Morgan and Morgan 1991
Zn	Great Britain	Draethen M	D. rubidus	yes					26420	1680	16370	0.103	Model	Morgan and Morgan 1991
Zn	Great Britain	Wales	L. rubellus	yes		6.8			46142	2763	29270	0.094	Model	Morgan and Morris 1982
Zn	Great Britain	Wales	D. rubidus	yes		6.8			46142	1876	29270	0.064	Model	Morgan and Morris 1982
Zn	Illinois	mine - w/o sludge	A. tuberculata	yes	silt clay loam					174	50	3.480	Model	Pietz et al. 1984
Zn	Illinois	nonmine - w/o slu	A. tuberculata and L.	yes	silt loam					264	72	3.667	Model	Pietz et al. 1984
Zn	Illinois	nonmine - w sludg	A. tuberculata and L.	yes	silt loam					329	87	3.782	Model	Pietz et al. 1984
Zn	Illinois	mine - w/ sludge	A. tuberculata	yes	silt clay loam					231	78	2.962	Model	Pietz et al. 1984
Zn	Belgium	site 2	A. chlorotica	yes		7.03			952.336	233.46	33.37	6.996	Model	Pizl and Josens 1995
Zn	Belgium	site 3	L. rubellus	yes		6.97			2039.67	754.65	27.9	27.048	Model	Pizl and Josens 1995
Zn	Belgium	site 6	A. caliginosa	yes		6			228.67	561.6	12.5	44.928	Model	Pizl and Josens 1995
Zn	Belgium	site 5	A. caliginosa	yes		5.93			173.33	701.56	14.17	49.510	Model	Pizl and Josens 1995
Zn	Belgium	site 5	L. rubellus	yes		5.93			173.33	519.04	14.17	36.629	Model	Pizl and Josens 1995
Zn	Belgium	site 4	L. terrestris	yes		6.7			532	1303.58	32.2	40.484	Model	Pizl and Josens 1995
Zn	Belgium	site 5	A. rosea	yes		5.93			173.33	524.17	14.17	36.992	Model	Pizl and Josens 1995
Zn	Belgium	site 5	L. terrestris	yes		5.93			173.33	606.7	14.17	42.816	Model	Pizl and Josens 1995

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Zn	Belgium	site 6	L. rubellus	yes		6			228.67	401.08	12.5	32.086	Model	Pizl and Josens 1995
Zn	Belgium	site 6	A. icterica	yes		6			228.67	272.4	12.5	21.792	Model	Pizl and Josens 1995
Zn	Belgium	site 3	L. castaneus	yes		6.97			2039.67	693.59	27.9	24.860	Model	Pizl and Josens 1995
Zn	Belgium	site 6	A. rosea	yes		6			228.67	177.81	12.5	14.225	Model	Pizl and Josens 1995
Zn	Belgium	site 4	L. castaneus	yes		6.7			532	897.5	32.2	27.873	Model	Pizl and Josens 1995
Zn	Belgium	site 1	L. rubellus	yes		7.13			705	1416.7	34.43	41.147	Model	Pizl and Josens 1995
Zn	Belgium	site 2	L. terrestris	yes		7.03			952.336	1071.28	33.37	32.103	Model	Pizl and Josens 1995
Zn	Belgium	site 6	L. castaneus	yes		6			228.67	252.18	12.5	20.174	Model	Pizl and Josens 1995
Zn	Belgium	site 1	L. terrestris	yes		7.13			705	669.61	34.43	19.448	Model	Pizl and Josens 1995
Zn	East Tennessee	Linside	mix	yes						375	41	9.146	Model	Van Hook 1974
Zn	East Tennessee	Captina	mix	yes						93	30	3.100	Model	Van Hook 1974
Zn	East Tennessee	Emory	mix	yes						253	57	4.439	Model	Van Hook 1974
Zn	East Tennessee	Bodine	mix	yes						498	37	13.459	Model	Van Hook 1974
Zn	East Tennessee	Tarklin	mix	yes						178	50	3.560	Model	Van Hook 1974
Zn	East Tennessee	Claiborne	mix	yes						502	40	12.550	Model	Van Hook 1974
As	Tennessee	Bear Creek	mix	yes		6.767	1.86		832.75	0.457	1.63	0.280	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes		6.633	3.01		3030	0.267	2.5	0.107	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes		6.900	2.32		1362.5	0.387	2.65	0.146	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes		5.133	1.97		549.75	0.242	2.98	0.081	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes						1.8	3.2	0.563	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes						3	3.3	0.909	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes		6.82			3180	3	3.7	0.811	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes		7.000	3		3275	0.296	4.33	0.068	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes						2	4.5	0.444	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes		6.667	3.03		3500	0.306	4.65	0.066	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes		7.64			6850	2.3	5.3	0.434	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes		6.867	3.16		3422.5	0.481	5.33	0.090	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes					5570	0.254	5.75	0.044	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes		6.900	6.65		2717.5	0.108	6.38	0.017	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes		6.833	3		1234.5	0.533	13.8	0.039	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes					40600	0.223	40	0.006	Validation	Efroymson et al. 1996, Jones
As	Tennessee	Bear Creek	mix	yes					28400	0.815	40	0.020	Validation	Efroymson et al. 1996, Jones
Cd	Great Britain	Cwmystwyth	L. rubellus	yes		4.31			168	9.3	0.1	93.000	Validation	Morgan and Morgan 1990
Cd	Spain	30 m my	L. friendi	yes						0.79	0.15	5.267	Validation	Marino et al. 1992
Cd	Spain	30 m my	D. octaedra	yes						1.06	0.15	7.067	Validation	Marino et al. 1992
Cd	Spain	30 m my	A. caliginosa	yes						0.86	0.15	5.733	Validation	Marino et al. 1992
Cd	Spain	30 m my	L. friendi	yes						0.76	0.15	5.067	Validation	Marino et al. 1992
Cd	Spain	30 m my	A. rosea	yes						1.7	0.15	11.333	Validation	Marino et al. 1992
Cd	Spain	30 m my	D. octaedra	yes						0.86	0.15	5.733	Validation	Marino et al. 1992
Cd	Spain	30 m my	A. caliginosa	yes						0.83	0.15	5.533	Validation	Marino et al. 1992
Cd	Spain	30 m Fb	D. madeirensis	yes						2.48	0.24	10.333	Validation	Marino et al. 1992
Cd	Spain	30 m Fb	A. caliginosa	yes						1.18	0.24	4.917	Validation	Marino et al. 1992
Cd	Spain	30 m Fb	A. rosea	yes						1.27	0.24	5.292	Validation	Marino et al. 1992
Cd	Spain	30 m Fb	A. rosea	yes						2	0.24	8.333	Validation	Marino et al. 1992
Cd	Spain	30 m Fb	A. caliginosa	yes						1.34	0.24	5.583	Validation	Marino et al. 1992
Cd	Spain	30 m Fb	D. octaedra	yes						0.92	0.24	3.833	Validation	Marino et al. 1992
Cd	Spain	30 m Fb	L. friendi	yes						0.78	0.24	3.250	Validation	Marino et al. 1992
Cd	Tennessee	Bear Creek	mix	yes						1.4	0.29	4.828	Validation	Efroymson et al. 1996, Jones
Cd	Tennessee	Bear Creek	mix	yes		5.967	1.95		1173	1.57	0.29	5.414	Validation	Efroymson et al. 1996, Jones
Cd	Tennessee	Bear Creek	mix	yes		6.767	1.86		832.75	13.7	0.31	44.194	Validation	Efroymson et al. 1996, Jones
Cd	Spain	15 m Fb	L. friendi	yes						0.98	0.35	2.800	Validation	Marino et al. 1992

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Cd	Spain	15 m Fb	D. madeirensis	yes						1.57	0.35	4.486	Validation	Marino et al. 1992
Cd	Spain	15 m Fb	A. rosea	yes						1.06	0.35	3.029	Validation	Marino et al. 1992
Cd	Spain	15 m Fb	A. caliginosa	yes						1.3	0.35	3.714	Validation	Marino et al. 1992
Cd	Spain	15 m Fb	A. caliginosa	yes						1.14	0.35	3.257	Validation	Marino et al. 1992
Cd	Spain	15 m Fb	A. rosea	yes						1.98	0.35	5.657	Validation	Marino et al. 1992
Cd	Spain	15 m Fb	D. madeirensis	yes						0.74	0.35	2.114	Validation	Marino et al. 1992
Cd	Spain	15 m Fb	L. friendi	yes						1.22	0.35	3.486	Validation	Marino et al. 1992
Cd	Spain	15 m Nv	L. friendi	yes						1.14	0.37	3.081	Validation	Marino et al. 1992
Cd	Spain	15 m Nv	A. rosea	yes						3.25	0.37	8.784	Validation	Marino et al. 1992
Cd	Spain	15 m Nv	A. caliginosa	yes						1.79	0.37	4.838	Validation	Marino et al. 1992
Cd	Spain	15 m Nv	D. octaedra	yes						0.59	0.37	1.595	Validation	Marino et al. 1992
Cd	Spain	15 m Nv	A. caliginosa	yes						1.33	0.37	3.595	Validation	Marino et al. 1992
Cd	Spain	15 m Nv	A. rosea	yes						0.22	0.37	0.595	Validation	Marino et al. 1992
Cd	Spain	15 m Nv	L. friendi	yes						0.89	0.37	2.405	Validation	Marino et al. 1992
Cd	Spain	15 m Nv	D. madeirensis	yes						1.69	0.37	4.568	Validation	Marino et al. 1992
Cd	Spain	15 m Nv	D. madeirensis	yes						2.06	0.37	5.568	Validation	Marino et al. 1992
Cd	Spain	15 m my	A. caliginosa	yes						1.09	0.39	2.795	Validation	Marino et al. 1992
Cd	Spain	15 m my	D. octaedra	yes						0.32	0.39	0.821	Validation	Marino et al. 1992
Cd	Spain	15 m my	L. friendi	yes						1.09	0.39	2.795	Validation	Marino et al. 1992
Cd	Spain	15 m my	D. madeirensis	yes						1.85	0.39	4.744	Validation	Marino et al. 1992
Cd	Spain	15 m my	D. madeirensis	yes						1.25	0.39	3.205	Validation	Marino et al. 1992
Cd	Spain	15 m my	A. rosea	yes						1.8	0.39	4.615	Validation	Marino et al. 1992
Cd	Spain	15 m my	A. caliginosa	yes						1.01	0.39	2.590	Validation	Marino et al. 1992
Cd	Spain	15 m my	L. friendi	yes						0.63	0.39	1.615	Validation	Marino et al. 1992
Cd	Spain	30 m Nv	A. rosea	yes						3.21	0.43	7.465	Validation	Marino et al. 1992
Cd	Spain	30 m Nv	A. caliginosa	yes						1.32	0.43	3.070	Validation	Marino et al. 1992
Cd	Spain	30 m Nv	A. rosea	yes						2.9	0.43	6.744	Validation	Marino et al. 1992
Cd	Spain	30 m Nv	L. friendi	yes						0.39	0.43	0.907	Validation	Marino et al. 1992
Cd	Spain	30 m Nv	A. caliginosa	yes						1.52	0.43	3.535	Validation	Marino et al. 1992
Cd	Spain	30 m Nv	L. friendi	yes						0.33	0.43	0.767	Validation	Marino et al. 1992
Cd	Spain	30 m Nv	D. madeirensis	yes						2.63	0.43	6.116	Validation	Marino et al. 1992
Cd	Spain	3 m Fb	L. friendi	yes						0.63	0.435	1.448	Validation	Marino et al. 1992
Cd	Spain	3 m Fb	A. caliginosa	yes						1.16	0.435	2.667	Validation	Marino et al. 1992
Cd	Spain	3 m my	D. octaedra	yes						1.56	0.435	3.586	Validation	Marino et al. 1992
Cd	Spain	3 m Fb	D. madeirensis	yes						3.49	0.435	8.023	Validation	Marino et al. 1992
Cd	Spain	3 m my	L. friendi	yes						1.19	0.435	2.736	Validation	Marino et al. 1992
Cd	Spain	3 m Fb	D. madeirensis	yes						1.53	0.435	3.517	Validation	Marino et al. 1992
Cd	Spain	3 m my	L. friendi	yes						0.8	0.435	1.839	Validation	Marino et al. 1992
Cd	Spain	3 m my	D. madeirensis	yes						1.76	0.435	4.046	Validation	Marino et al. 1992
Cd	Spain	3 m Fb	L. friendi	yes						0.72	0.435	1.655	Validation	Marino et al. 1992
Cd	Spain	3 m my	D. octaedra	yes						1.53	0.435	3.517	Validation	Marino et al. 1992
Cd	Spain	3 m Fb	D. octaedra	yes						4.03	0.435	9.264	Validation	Marino et al. 1992
Cd	Spain	3 m Fb	D. octaedra	yes						0.83	0.435	1.908	Validation	Marino et al. 1992
Cd	Spain	3 m my	A. caliginosa	yes						1.4	0.435	3.218	Validation	Marino et al. 1992
Cd	Spain	3 m my	D. madeirensis	yes						1.52	0.435	3.494	Validation	Marino et al. 1992
Cd	Spain	3 m Fb	A. caliginosa	yes						1.5	0.435	3.448	Validation	Marino et al. 1992
Cd	Spain	3 m my	A. caliginosa	yes						1.72	0.435	3.954	Validation	Marino et al. 1992
Cd	Tennessee	Bear Creek	mix	yes						3.2	0.54	5.926	Validation	Efroymson et al. 1996, Jones
Cd	Spain	3 m Nv	D. octaedra	yes						1.37	0.66	2.076	Validation	Marino et al. 1992
Cd	Spain	3 m Nv	A. caliginosa	yes						1	0.66	1.515	Validation	Marino et al. 1992
Cd	Spain	3 m Nv	L. friendi	yes						1.14	0.66	1.727	Validation	Marino et al. 1992
Cd	Spain	3 m Nv	D. madeirensis	yes						3.42	0.66	5.182	Validation	Marino et al. 1992

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Cd	Spain	3 m Nv	A. caliginosa	yes						1.17	0.66	1.773	Validation	Marino et al. 1992
Cd	Spain	3 m Nv	L. friendi	yes						0.85	0.66	1.288	Validation	Marino et al. 1992
Cd	Tennessee	Bear Creek	mix	yes		7.64			6850	5	0.78	6.410	Validation	Efroymson et al. 1996, Jones
Cd	Great Britain	Dinas Powys	L. rubellus	yes		5.19			1791	12.3	0.9	13.667	Validation	Morgan and Morgan 1990
Cd	Tennessee	Bear Creek	mix	yes					3870	2.4	1	2.400	Validation	Efroymson et al. 1996, Jones
Cd	Tennessee	Bear Creek	mix	yes					5570	1.32	1.1	1.200	Validation	Efroymson et al. 1996, Jones
Cd	Tennessee	Bear Creek	mix	yes		6.82			3180	2.5	1.2	2.083	Validation	Efroymson et al. 1996, Jones
Cd	Tennessee	Bear Creek	mix	yes		6.900	2.32		1362.5	6.93	1.34	5.172	Validation	Efroymson et al. 1996, Jones
Cd	Tennessee	Bear Creek	mix	yes		6.900	6.65		2717.5	11.9	4.5	2.644	Validation	Efroymson et al. 1996, Jones
Cd	Tennessee	Bear Creek	mix	yes		7.000	3		3275	12.2	10.33	1.181	Validation	Efroymson et al. 1996, Jones
Cd	Tennessee	Bear Creek	mix	yes		6.867	3.16		3422.5	12.8	10.5	1.219	Validation	Efroymson et al. 1996, Jones
Cd	Tennessee	Bear Creek	mix	yes					28400	4.05	16	0.253	Validation	Efroymson et al. 1996, Jones
Cd	Great Britain	Jan 85	A. caliginosa	yes						360	17	21.176	Validation	Morgan and Morgan 1993
Cd	Great Britain	Aug 84	L. rubellus	yes						120	17	7.059	Validation	Morgan and Morgan 1993
Cd	Great Britain	Jan 85	L. rubellus	yes						180	17	10.588	Validation	Morgan and Morgan 1993
Cd	Great Britain	Mar 85	A. caliginosa	yes						330	19	17.368	Validation	Morgan and Morgan 1993
Cd	Great Britain	Oct 84	L. rubellus	yes						100	19	5.263	Validation	Morgan and Morgan 1993
Cd	Great Britain	July 84	A. caliginosa	yes						180	19	9.474	Validation	Morgan and Morgan 1993
Cd	Great Britain	Mar 85	L. rubellus	yes						170	19	8.947	Validation	Morgan and Morgan 1993
Cd	Great Britain	May 84	A. caliginosa	yes						410	19	21.579	Validation	Morgan and Morgan 1993
Cd	Great Britain	May 84	L. rubellus	yes						140	19	7.368	Validation	Morgan and Morgan 1993
Cd	Great Britain	Oct 84	A. caliginosa	yes						330	19	17.368	Validation	Morgan and Morgan 1993
Cd	Great Britain	Llantrisant	L. rubellus	yes		6.75			5083	169	19	8.895	Validation	Morgan and Morgan 1990
Cd	Great Britain	July 84	L. rubellus	yes						100	19	5.263	Validation	Morgan and Morgan 1993
Cd	Great Britain	April 84	A. caliginosa	yes						380	21	18.095	Validation	Morgan and Morgan 1993
Cd	Great Britain	April 84	L. rubellus	yes						170	21	8.095	Validation	Morgan and Morgan 1993
Cd	Great Britain	Dec 84	A. caliginosa	yes						330	22	15.000	Validation	Morgan and Morgan 1993
Cd	Great Britain	Dec 84	L. rubellus	yes						120	22	5.455	Validation	Morgan and Morgan 1993
Cd	Great Britain	Nov 84	L. rubellus	yes						150	23	6.522	Validation	Morgan and Morgan 1993
Cd	Great Britain	Nov 84	A. caliginosa	yes						340	23	14.783	Validation	Morgan and Morgan 1993
Cd	Great Britain	June 84	L. rubellus	yes						120	23	5.217	Validation	Morgan and Morgan 1993
Cd	Great Britain	Apr 85	A. caliginosa	yes						380	23	16.522	Validation	Morgan and Morgan 1993
Cd	Great Britain	June 84	A. caliginosa	yes						389	23	16.913	Validation	Morgan and Morgan 1993
Cd	Great Britain	Apr 85	L. rubellus	yes						190	23	8.261	Validation	Morgan and Morgan 1993
Cd	Great Britain	Feb 85	A. caliginosa	yes						370	24	15.417	Validation	Morgan and Morgan 1993
Cd	Great Britain	Feb 85	L. rubellus	yes						190	24	7.917	Validation	Morgan and Morgan 1993
Cd	Great Britain	Sept 84	L. rubellus	yes						140	25	5.600	Validation	Morgan and Morgan 1993
Cd	Great Britain	Sept 84	A. caliginosa	yes						410	25	16.400	Validation	Morgan and Morgan 1993
Cd	Tennessee	Bear Creek	mix	yes					40600	24.4	30	0.813	Validation	Efroymson et al. 1996, Jones
Cd	Great Britain	Ecton	L. rubellus	yes		7.1			31277	100	157	0.637	Validation	Morgan and Morgan 1990
Cd	Great Britain	Draethen	L. rubellus	yes		6.49			26421	811.5	347	2.339	Validation	Morgan and Morgan 1990
Cr	Tennessee	Bear Creek	mix	yes		6.767	1.86		832.75	33.3	10.53	3.162	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes		5.133	1.97		549.75	7.53	11.2	0.672	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes		6.900	2.32		1362.5	129	11.3	11.416	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes		6.833	3		1234.5	19.3	13.28	1.453	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes		7.000	3		3275	27.9	14.15	1.972	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes		6.900	6.65		2717.5	2.42	14.73	0.164	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes		6.867	3.16		3422.5	141	16.92	8.333	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes		6.667	3.03		3500	44.4	17.9	2.480	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes		6.633	3.01		3030	107	19.85	5.390	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes		6.82			3180	7.7	22	0.350	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes		5.967	1.95		1173	28	23.05	1.215	Validation	Efroymson et al. 1996, Jones

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Cr	Tennessee	Bear Creek	mix	yes		7.64			6850	7.5	26	0.288	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes						5.9	31.1	0.190	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes						14.4	31.5	0.457	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes						8	49.8	0.161	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes					5570	62.5	52.65	1.187	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes					3870	60.5	95.3	0.635	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes					28400	18.5	277	0.067	Validation	Efroymson et al. 1996, Jones
Cr	Tennessee	Bear Creek	mix	yes					40600	39.9	619	0.064	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes		5.133	1.97		549.75	0.44	4.85	0.091	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes		6.767	1.86		832.75	29	5.28	5.492	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes		6.900	2.32		1362.5	4.42	7.83	0.564	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes		5.967	1.95		1173	2.14	9.03	0.237	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes		6.667	3.03		3500	1.8	10.48	0.172	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes		7.64			6850	9.5	10.9	0.872	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes		6.633	3.01		3030	3.4	11.45	0.297	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes		6.833	3		1234.5	2.88	15.03	0.192	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes		6.82			3180	12.5	16	0.781	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes						7	16.6	0.422	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes		6.900	6.65		2717.5	1.44	16.9	0.085	Validation	Efroymson et al. 1996, Jones
Cu	Spain	30 m my	L. friendi	yes						9.89	17.01	0.581	Validation	Marino et al. 1992
Cu	Spain	30 m my	L. friendi	yes						9.3	17.01	0.547	Validation	Marino et al. 1992
Cu	Spain	30 m my	D. octaedra	yes						13.33	17.01	0.784	Validation	Marino et al. 1992
Cu	Spain	30 m my	A. caliginosa	yes						8.04	17.01	0.473	Validation	Marino et al. 1992
Cu	Spain	30 m my	D. octaedra	yes						8.03	17.01	0.472	Validation	Marino et al. 1992
Cu	Spain	30 m my	A. caliginosa	yes						5.08	17.01	0.299	Validation	Marino et al. 1992
Cu	Spain	30 m my	A. rosea	yes						18.57	17.01	1.092	Validation	Marino et al. 1992
Cu	Spain	30 m Fb	A. rosea	yes						15.13	18.03	0.839	Validation	Marino et al. 1992
Cu	Spain	30 m Fb	A. caliginosa	yes						7.35	18.03	0.408	Validation	Marino et al. 1992
Cu	Spain	30 m Fb	D. madeirensis	yes						20.02	18.03	1.110	Validation	Marino et al. 1992
Cu	Spain	30 m Fb	A. caliginosa	yes						9.81	18.03	0.544	Validation	Marino et al. 1992
Cu	Spain	30 m Fb	L. friendi	yes						11.87	18.03	0.658	Validation	Marino et al. 1992
Cu	Spain	30 m Fb	D. octaedra	yes						6.66	18.03	0.369	Validation	Marino et al. 1992
Cu	Spain	30 m Fb	A. rosea	yes						6.66	18.03	0.369	Validation	Marino et al. 1992
Cu	Spain	15 m my	A. caliginosa	yes						12.42	18.89	0.657	Validation	Marino et al. 1992
Cu	Spain	15 m my	D. madeirensis	yes						29.59	18.89	1.566	Validation	Marino et al. 1992
Cu	Spain	15 m my	D. octaedra	yes						16.96	18.89	0.898	Validation	Marino et al. 1992
Cu	Spain	15 m my	A. caliginosa	yes						11.51	18.89	0.609	Validation	Marino et al. 1992
Cu	Spain	15 m my	D. madeirensis	yes						22.05	18.89	1.167	Validation	Marino et al. 1992
Cu	Spain	15 m my	L. friendi	yes						10.17	18.89	0.538	Validation	Marino et al. 1992
Cu	Spain	15 m my	L. friendi	yes						9.24	18.89	0.489	Validation	Marino et al. 1992
Cu	Spain	15 m my	A. rosea	yes						19.56	18.89	1.035	Validation	Marino et al. 1992
Cu	Spain	15 m Nv	A. caliginosa	yes						9.34	19.41	0.481	Validation	Marino et al. 1992
Cu	Spain	15 m Nv	L. friendi	yes						9.37	19.41	0.483	Validation	Marino et al. 1992
Cu	Spain	15 m Nv	A. rosea	yes						21.14	19.41	1.089	Validation	Marino et al. 1992
Cu	Spain	15 m Nv	D. octaedra	yes						7.96	19.41	0.410	Validation	Marino et al. 1992
Cu	Spain	15 m Nv	A. caliginosa	yes						12.32	19.41	0.635	Validation	Marino et al. 1992
Cu	Spain	15 m Nv	L. friendi	yes						23.23	19.41	1.197	Validation	Marino et al. 1992
Cu	Spain	15 m Nv	D. madeirensis	yes						21.14	19.41	1.089	Validation	Marino et al. 1992
Cu	Spain	15 m Nv	A. rosea	yes						15.62	19.41	0.805	Validation	Marino et al. 1992
Cu	Spain	15 m Nv	D. madeirensis	yes						13.96	19.41	0.719	Validation	Marino et al. 1992
Cu	Spain	30 m Nv	A. rosea	yes						13.63	20.64	0.660	Validation	Marino et al. 1992
Cu	Spain	30 m Nv	A. rosea	yes						28.39	20.64	1.375	Validation	Marino et al. 1992

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Cu	Spain	30 m Nv	A. caliginosa	yes						5.14	20.64	0.249	Validation	Marino et al. 1992
Cu	Spain	30 m Nv	L. friendi	yes						6.92	20.64	0.335	Validation	Marino et al. 1992
Cu	Spain	30 m Nv	L. friendi	yes						8.53	20.64	0.413	Validation	Marino et al. 1992
Cu	Spain	30 m Nv	A. caliginosa	yes						25.47	20.64	1.234	Validation	Marino et al. 1992
Cu	Spain	30 m Nv	D. madeirensis	yes						17.67	20.64	0.856	Validation	Marino et al. 1992
Cu	Tennessee	Bear Creek	mix	yes		7.000	3		3275	2.07	20.68	0.100	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes		6.867	3.16		3422.5	4.62	21.08	0.219	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes						8.5	21.9	0.388	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes					5570	2.65	22.3	0.119	Validation	Efroymson et al. 1996, Jones
Cu	Great Britain	Cwmystwyth	L. rubellus	yes		4.31			168	13.5	24	0.563	Validation	Morgan and Morgan 1990
Cu	Tennessee	Bear Creek	mix	yes						9.8	25.1	0.390	Validation	Efroymson et al. 1996, Jones
Cu	Great Britain	Dinas Powys	L. rubellus	yes		5.19			1791	13.4	26	0.515	Validation	Morgan and Morgan 1990
Cu	Spain	15 m Fb	D. madeirensis	yes						30.11	29.18	1.032	Validation	Marino et al. 1992
Cu	Spain	15 m Fb	D. madeirensis	yes						25.63	29.18	0.878	Validation	Marino et al. 1992
Cu	Spain	15 m Fb	L. friendi	yes						12.52	29.18	0.429	Validation	Marino et al. 1992
Cu	Spain	15 m Fb	A. caliginosa	yes						18.66	29.18	0.639	Validation	Marino et al. 1992
Cu	Spain	15 m Fb	L. friendi	yes						12.11	29.18	0.415	Validation	Marino et al. 1992
Cu	Spain	15 m Fb	A. rosea	yes						12.41	29.18	0.425	Validation	Marino et al. 1992
Cu	Spain	15 m Fb	A. rosea	yes						15.51	29.18	0.532	Validation	Marino et al. 1992
Cu	Spain	15 m Fb	A. caliginosa	yes						10.83	29.18	0.371	Validation	Marino et al. 1992
Cu	Spain	15 m Fb	D. octaedra	yes						27.77	29.18	0.952	Validation	Marino et al. 1992
Cu	Great Britain	Llantrisant	L. rubellus	yes		6.75			5083	12.8	32	0.400	Validation	Morgan and Morgan 1990
Cu	Tennessee	Bear Creek	mix	yes					3870	2.87	35.2	0.082	Validation	Efroymson et al. 1996, Jones
Cu	Spain	3 m Fb	D. octaedra	yes						29.24	69.82	0.419	Validation	Marino et al. 1992
Cu	Spain	3 m Fb	A. caliginosa	yes						22.88	69.82	0.328	Validation	Marino et al. 1992
Cu	Spain	3 m Fb	D. octaedra	yes						27.36	69.82	0.392	Validation	Marino et al. 1992
Cu	Spain	3 m Fb	L. friendi	yes						16.96	69.82	0.243	Validation	Marino et al. 1992
Cu	Spain	3 m Fb	A. caliginosa	yes						25.44	69.82	0.364	Validation	Marino et al. 1992
Cu	Spain	3 m Fb	D. madeirensis	yes						60.58	69.82	0.868	Validation	Marino et al. 1992
Cu	Spain	3 m Fb	D. madeirensis	yes						38.99	69.82	0.558	Validation	Marino et al. 1992
Cu	Spain	3 m Fb	L. friendi	yes						18.5	69.82	0.265	Validation	Marino et al. 1992
Cu	Spain	3 m Nv	L. friendi	yes						15.27	85.96	0.178	Validation	Marino et al. 1992
Cu	Spain	3 m Nv	D. octaedra	yes						25.86	85.96	0.301	Validation	Marino et al. 1992
Cu	Spain	3 m Nv	D. madeirensis	yes						23.8	85.96	0.277	Validation	Marino et al. 1992
Cu	Spain	3 m Nv	A. caliginosa	yes						27.77	85.96	0.323	Validation	Marino et al. 1992
Cu	Spain	3 m Nv	A. caliginosa	yes						22.06	85.96	0.257	Validation	Marino et al. 1992
Cu	Spain	3 m Nv	L. friendi	yes						8.56	85.96	0.100	Validation	Marino et al. 1992
Cu	Tennessee	Bear Creek	mix	yes						20.7	86.7	0.239	Validation	Efroymson et al. 1996, Jones
Cu	Great Britain	Draethen	L. rubellus	yes		6.49			26421	16.9	88	0.192	Validation	Morgan and Morgan 1990
Cu	Spain	3 m my	A. caliginosa	yes						32.23	113.19	0.285	Validation	Marino et al. 1992
Cu	Spain	3 m my	A. caliginosa	yes						27.49	113.19	0.243	Validation	Marino et al. 1992
Cu	Spain	3 m my	D. madeirensis	yes						34.04	113.19	0.301	Validation	Marino et al. 1992
Cu	Spain	3 m my	D. madeirensis	yes						51.67	113.19	0.456	Validation	Marino et al. 1992
Cu	Spain	3 m my	L. friendi	yes						23.36	113.19	0.206	Validation	Marino et al. 1992
Cu	Spain	3 m my	D. octaedra	yes						32.23	113.19	0.285	Validation	Marino et al. 1992
Cu	Spain	3 m my	D. octaedra	yes						44.64	113.19	0.394	Validation	Marino et al. 1992
Cu	Spain	3 m my	L. friendi	yes						16.59	113.19	0.147	Validation	Marino et al. 1992
Cu	Great Britain	Ecton	L. rubellus	yes		7.1			31277	38.9	2740	0.014	Validation	Morgan and Morgan 1990
Cu	Tennessee	Bear Creek	mix	yes					40600	6.72	2900	0.002	Validation	Efroymson et al. 1996, Jones
Cu	Tennessee	Bear Creek	mix	yes					28400	10.8	3500	0.003	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes						1.3	0.08	16.250	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes		6.82			3180	0.4	0.09	4.444	Validation	Efroymson et al. 1996, Jones

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Hg	Tennessee	Bear Creek	mix	yes		6.667	3.03		3500	0.19	0.2	0.950	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes		6.767	1.86		832.75	0.4	0.24	1.667	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes		6.633	3.01		3030	0.44	0.43	1.023	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes		6.833	3		1234.5	0.34	0.43	0.791	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes		6.900	2.32		1362.5	0.23	0.43	0.535	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes						1.3	0.62	2.097	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes		5.967	1.95		1173	0.18	0.71	0.254	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes		7.64			6850	0.47	1.7	0.276	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes		6.867	3.16		3422.5	0.3	2.2	0.136	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes		7.000	3		3275	0.23	2.3	0.100	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes		6.900	6.65		2717.5	0.11	3.03	0.036	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes					3870	0.11	3.7	0.030	Validation	Efroymson et al. 1996, Jones
Hg	Tennessee	Bear Creek	mix	yes					5570	0.4	9.9	0.040	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		6.767	1.86		832.75	44.1	347.75	0.127	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		6.667	3.03		3500	55.2	724.75	0.076	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes						53.7	762	0.070	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes						70.2	785	0.089	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		6.900	2.32		1362.5	64.5	796	0.081	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		5.133	1.97		549.75	39.5	878	0.045	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		6.633	3.01		3030	53.5	910	0.059	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes					5570	19.4	1060	0.018	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		5.967	1.95		1173	13.3	1065	0.012	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		7.64			6850	101	1080	0.094	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes					40600	22.7	1090	0.021	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes						40.2	1170	0.034	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		6.833	3		1234.5	43.6	1265	0.034	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes					3870	25.6	1280	0.020	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		6.900	6.65		2717.5	51.1	1635	0.031	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		7.000	3		3275	46.7	1857.5	0.025	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		6.867	3.16		3422.5	57.3	1862.5	0.031	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes					28400	25.6	1870	0.014	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes						426	3710	0.115	Validation	Efroymson et al. 1996, Jones
Mn	Tennessee	Bear Creek	mix	yes		6.82			3180	663	5540	0.120	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes		6.767	1.86		832.75	41.2	7.13	5.778	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes		5.133	1.97		549.75	37.6	7.95	4.730	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes		5.967	1.95		1173	20.1	10.7	1.879	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes		6.900	2.32		1362.5	86.6	11.1	7.802	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes		6.833	3		1234.5	18.7	11.65	1.605	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes		6.667	3.03		3500	30.3	15.15	2.000	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes		6.633	3.01		3030	76.8	15.33	5.010	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes					5570	41.7	19.75	2.111	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes		6.900	6.65		2717.5	6.93	19.83	0.349	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes					3870	45.1	20.6	2.189	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes		7.000	3		3275	21	54.5	0.385	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes		6.867	3.16		3422.5	98.6	55.85	1.765	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes					28400	11.4	302	0.038	Validation	Efroymson et al. 1996, Jones
Ni	Tennessee	Bear Creek	mix	yes					40600	27.4	462	0.059	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes		6.767	1.86		832.75	1.77	10.83	0.163	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes		5.133	1.97		549.75	0.84	12.05	0.070	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes		6.667	3.03		3500	0.92	12.65	0.073	Validation	Efroymson et al. 1996, Jones
Pb	Spain	30 m my	A. caliginosa	yes						10.1	12.87	0.785	Validation	Marino et al. 1992
Pb	Spain	30 m my	A. rosea	yes						19.66	12.87	1.528	Validation	Marino et al. 1992

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Pb	Spain	30 m my	D. octaedra	yes						9.82	12.87	0.763	Validation	Marino et al. 1992
Pb	Spain	30 m my	L. friendi	yes						4.98	12.87	0.387	Validation	Marino et al. 1992
Pb	Spain	30 m my	D. octaedra	yes						6.66	12.87	0.517	Validation	Marino et al. 1992
Pb	Spain	30 m my	L. friendi	yes						4.01	12.87	0.312	Validation	Marino et al. 1992
Pb	Spain	30 m my	A. caliginosa	yes						7.93	12.87	0.616	Validation	Marino et al. 1992
Pb	Tennessee	Bear Creek	mix	yes		6.633	3.01		3030	30	14.38	2.086	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes		6.900	2.32		1362.5	0.61	14.55	0.042	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes						2.2	14.7	0.150	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes		5.967	1.95		1173	0.5	20.6	0.024	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes		7.000	3		3275	0.52	21.95	0.024	Validation	Efroymson et al. 1996, Jones
Pb	Spain	30 m Fb	A. caliginosa	yes						15.54	22.47	0.692	Validation	Marino et al. 1992
Pb	Spain	30 m Fb	A. caliginosa	yes						8.09	22.47	0.360	Validation	Marino et al. 1992
Pb	Spain	30 m Fb	D. octaedra	yes						15.65	22.47	0.696	Validation	Marino et al. 1992
Pb	Spain	30 m Fb	D. madeirensis	yes						45.45	22.47	2.023	Validation	Marino et al. 1992
Pb	Spain	30 m Fb	L. friendi	yes						5.95	22.47	0.265	Validation	Marino et al. 1992
Pb	Spain	30 m Fb	A. rosea	yes						23.36	22.47	1.040	Validation	Marino et al. 1992
Pb	Spain	30 m Fb	A. rosea	yes						11.25	22.47	0.501	Validation	Marino et al. 1992
Pb	Tennessee	Bear Creek	mix	yes		6.867	3.16		3422.5	0.94	22.75	0.041	Validation	Efroymson et al. 1996, Jones
Pb	Spain	15 m Nv	A. rosea	yes						11.71	23.33	0.502	Validation	Marino et al. 1992
Pb	Spain	15 m Nv	L. friendi	yes						18.51	23.33	0.793	Validation	Marino et al. 1992
Pb	Spain	15 m Nv	D. octaedra	yes						25.47	23.33	1.092	Validation	Marino et al. 1992
Pb	Spain	15 m Nv	D. madeirensis	yes						14.82	23.33	0.635	Validation	Marino et al. 1992
Pb	Spain	15 m Nv	A. caliginosa	yes						35.5	23.33	1.522	Validation	Marino et al. 1992
Pb	Spain	15 m Nv	A. caliginosa	yes						26.26	23.33	1.126	Validation	Marino et al. 1992
Pb	Spain	15 m Nv	D. madeirensis	yes						32.91	23.33	1.411	Validation	Marino et al. 1992
Pb	Spain	15 m Nv	L. friendi	yes						9.7	23.33	0.416	Validation	Marino et al. 1992
Pb	Spain	15 m Nv	A. rosea	yes						29.22	23.33	1.252	Validation	Marino et al. 1992
Pb	Tennessee	Bear Creek	mix	yes						3.5	24.5	0.143	Validation	Efroymson et al. 1996, Jones
Pb	Spain	15 m my	A. caliginosa	yes						15.54	25.48	0.610	Validation	Marino et al. 1992
Pb	Spain	15 m my	D. octaedra	yes						36.78	25.48	1.443	Validation	Marino et al. 1992
Pb	Spain	15 m my	D. madeirensis	yes						24.09	25.48	0.945	Validation	Marino et al. 1992
Pb	Spain	15 m my	D. madeirensis	yes						48	25.48	1.884	Validation	Marino et al. 1992
Pb	Spain	15 m my	L. friendi	yes						5.52	25.48	0.217	Validation	Marino et al. 1992
Pb	Spain	15 m my	L. friendi	yes						9.57	25.48	0.376	Validation	Marino et al. 1992
Pb	Spain	15 m my	A. rosea	yes						22.2	25.48	0.871	Validation	Marino et al. 1992
Pb	Spain	15 m my	A. caliginosa	yes						15.37	25.48	0.603	Validation	Marino et al. 1992
Pb	Tennessee	Bear Creek	mix	yes					6850	3.2	26.1	0.123	Validation	Efroymson et al. 1996, Jones
Pb	Spain	30 m Nv	A. rosea	yes						31.85	32.08	0.993	Validation	Marino et al. 1992
Pb	Spain	30 m Nv	A. rosea	yes						18.98	32.08	0.592	Validation	Marino et al. 1992
Pb	Spain	30 m Nv	L. friendi	yes						7.23	32.08	0.225	Validation	Marino et al. 1992
Pb	Spain	30 m Nv	D. madeirensis	yes						43.95	32.08	1.370	Validation	Marino et al. 1992
Pb	Spain	30 m Nv	A. caliginosa	yes						39.08	32.08	1.218	Validation	Marino et al. 1992
Pb	Spain	30 m Nv	A. caliginosa	yes						34.39	32.08	1.072	Validation	Marino et al. 1992
Pb	Spain	30 m Nv	L. friendi	yes						15.29	32.08	0.477	Validation	Marino et al. 1992
Pb	Spain	15 m Fb	L. friendi	yes						9.13	35.52	0.257	Validation	Marino et al. 1992
Pb	Spain	15 m Fb	D. octaedra	yes						14.37	35.52	0.405	Validation	Marino et al. 1992
Pb	Spain	15 m Fb	A. rosea	yes						34.9	35.52	0.983	Validation	Marino et al. 1992
Pb	Spain	15 m Fb	D. madeirensis	yes						28.03	35.52	0.789	Validation	Marino et al. 1992
Pb	Spain	15 m Fb	A. caliginosa	yes						23.98	35.52	0.675	Validation	Marino et al. 1992
Pb	Spain	15 m Fb	A. rosea	yes						15	35.52	0.422	Validation	Marino et al. 1992
Pb	Spain	15 m Fb	L. friendi	yes						6.5	35.52	0.183	Validation	Marino et al. 1992
Pb	Spain	15 m Fb	A. caliginosa	yes						12.26	35.52	0.345	Validation	Marino et al. 1992

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Pb	Spain	15 m Fb	D. madeirensis	yes						47.09	35.52	1.326	Validation	Marino et al. 1992
Pb	Tennessee	Bear Creek	mix	yes						3.8	37.9	0.100	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes						4.7	40.3	0.117	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes					3870	0.46	41.3	0.011	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes		6.833	3		1234.5	2.11	45.65	0.046	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes		6.900	6.65		2717.5	0.36	49.13	0.007	Validation	Efroymson et al. 1996, Jones
Pb	Tennessee	Bear Creek	mix	yes					5570	0.77	57.25	0.013	Validation	Efroymson et al. 1996, Jones
Pb	Spain	3 m Fb	L. friendi	yes						16.58	63.75	0.260	Validation	Marino et al. 1992
Pb	Spain	3 m Fb	D. madeirensis	yes						64.35	63.75	1.009	Validation	Marino et al. 1992
Pb	Spain	3 m Fb	A. caliginosa	yes						27.76	63.75	0.435	Validation	Marino et al. 1992
Pb	Spain	3 m Fb	D. octaedra	yes						33.33	63.75	0.523	Validation	Marino et al. 1992
Pb	Spain	3 m Fb	D. madeirensis	yes						34.81	63.75	0.546	Validation	Marino et al. 1992
Pb	Spain	3 m Fb	L. friendi	yes						12.78	63.75	0.200	Validation	Marino et al. 1992
Pb	Spain	3 m Fb	D. octaedra	yes						25	63.75	0.392	Validation	Marino et al. 1992
Pb	Spain	3 m Fb	A. caliginosa	yes						13.72	63.75	0.215	Validation	Marino et al. 1992
Pb	Spain	3 m my	L. friendi	yes						10.19	66.97	0.152	Validation	Marino et al. 1992
Pb	Spain	3 m my	A. caliginosa	yes						22.8	66.97	0.340	Validation	Marino et al. 1992
Pb	Spain	3 m my	L. friendi	yes						16.4	66.97	0.245	Validation	Marino et al. 1992
Pb	Spain	3 m my	D. madeirensis	yes						68.16	66.97	1.018	Validation	Marino et al. 1992
Pb	Spain	3 m my	D. madeirensis	yes						42	66.97	0.627	Validation	Marino et al. 1992
Pb	Spain	3 m my	D. octaedra	yes						43.42	66.97	0.648	Validation	Marino et al. 1992
Pb	Spain	3 m my	A. caliginosa	yes						24.84	66.97	0.371	Validation	Marino et al. 1992
Pb	Spain	3 m my	D. octaedra	yes						35.62	66.97	0.532	Validation	Marino et al. 1992
Pb	Spain	3 m Nv	D. octaedra	yes						60.34	99.16	0.609	Validation	Marino et al. 1992
Pb	Spain	3 m Nv	D. madeirensis	yes						70.65	99.16	0.712	Validation	Marino et al. 1992
Pb	Spain	3 m Nv	A. caliginosa	yes						43.75	99.16	0.441	Validation	Marino et al. 1992
Pb	Spain	3 m Nv	L. friendi	yes						22.5	99.16	0.227	Validation	Marino et al. 1992
Pb	Spain	3 m Nv	A. caliginosa	yes						35.59	99.16	0.359	Validation	Marino et al. 1992
Pb	Spain	3 m Nv	L. friendi	yes						29.49	99.16	0.297	Validation	Marino et al. 1992
Pb	Great Britain	Campus	D. rubida	yes		5.65			13030	100	127	0.787	Validation	Ireland 1975
Pb	Great Britain	Dinas Powys	L. rubellus	yes		5.19			1791	2.2	166	0.013	Validation	Morgan and Morgan 1990
Pb	Great Britain	s5	L. terrestris	yes		4.9			428	201	692	0.290	Validation	Morris and Morgan 1986
Pb	Great Britain	s6	L. terrestris	yes		5.3			480	338	835	0.405	Validation	Morris and Morgan 1986
Pb	Great Britain	Cwmystwyth	L. rubellus	yes		4.31			168	3667.6	853	4.300	Validation	Morgan and Morgan 1990
Pb	Tennessee	Bear Creek	mix	yes					28400	4.45	900	0.005	Validation	Efroymson et al. 1996, Jones
Pb	Great Britain	Ystwyth	D. rubida	yes		4.35			332	4160	1713	2.428	Validation	Ireland 1975
Pb	Tennessee	Bear Creek	mix	yes					40600	0.86	2260	0.000	Validation	Efroymson et al. 1996, Jones
Pb	Great Britain	Ecton	L. rubellus	yes		7.1			31277	68.5	3022	0.023	Validation	Morgan and Morgan 1990
Pb	Great Britain	s2	L. terrestris	yes		6.4			4329	1191	4581.000	0.260	Validation	Morris and Morgan 1986
Pb	Great Britain	s1	L. terrestris	yes		5.3			417	1221	4738	0.258	Validation	Morris and Morgan 1986
Pb	Great Britain	Draethen	L. rubellus	yes		6.49			26421	1000.2	5329	0.188	Validation	Morgan and Morgan 1990
Pb	Great Britain	s4	L. terrestris	yes		6.6			369	1459	6549	0.223	Validation	Morris and Morgan 1986
Pb	Great Britain	Dec 84	L. rubellus	yes						870	6680	0.130	Validation	Morgan and Morgan 1993
Pb	Great Britain	Dec 84	A. caliginosa	yes						1560	6680	0.234	Validation	Morgan and Morgan 1993
Pb	Great Britain	Nov 84	L. rubellus	yes						900	6750	0.133	Validation	Morgan and Morgan 1993
Pb	Great Britain	Nov 84	A. caliginosa	yes						1460	6750	0.216	Validation	Morgan and Morgan 1993
Pb	Great Britain	Llantrisant	L. rubellus	yes		6.75			5083	1044.7	6930	0.151	Validation	Morgan and Morgan 1990
Pb	Great Britain	Apr 85	L. rubellus	yes						1660	6940	0.239	Validation	Morgan and Morgan 1993
Pb	Great Britain	Apr 85	A. caliginosa	yes						1510	6940	0.218	Validation	Morgan and Morgan 1993
Pb	Great Britain	July 84	A. caliginosa	yes						3500	6980	0.501	Validation	Morgan and Morgan 1993
Pb	Great Britain	July 84	L. rubellus	yes						1140	6980	0.163	Validation	Morgan and Morgan 1993
Pb	Great Britain	Mar 85	L. rubellus	yes						720	7020	0.103	Validation	Morgan and Morgan 1993

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Pb	Great Britain	Mar 85	A. caliginosa	yes						1640	7020	0.234	Validation	Morgan and Morgan 1993
Pb	Great Britain	April 84	L. rubellus	yes						1000	7130	0.140	Validation	Morgan and Morgan 1993
Pb	Great Britain	April 84	A. caliginosa	yes						2310	7130	0.324	Validation	Morgan and Morgan 1993
Pb	Great Britain	June 84	A. caliginosa	yes						1930	7250	0.266	Validation	Morgan and Morgan 1993
Pb	Great Britain	June 84	L. rubellus	yes						780	7250	0.108	Validation	Morgan and Morgan 1993
Pb	Great Britain	May 84	A. caliginosa	yes						1980	7270	0.272	Validation	Morgan and Morgan 1993
Pb	Great Britain	May 84	L. rubellus	yes						1040	7270	0.143	Validation	Morgan and Morgan 1993
Pb	Great Britain	Aug 84	L. rubellus	yes						1330	7370	0.180	Validation	Morgan and Morgan 1993
Pb	Great Britain	Oct 84	L. rubellus	yes						990	7370	0.134	Validation	Morgan and Morgan 1993
Pb	Great Britain	Oct 84	A. caliginosa	yes						1360	7370	0.185	Validation	Morgan and Morgan 1993
Pb	Great Britain	Feb 85	A. caliginosa	yes						1430	7390	0.194	Validation	Morgan and Morgan 1993
Pb	Great Britain	Feb 85	L. rubellus	yes						1030	7390	0.139	Validation	Morgan and Morgan 1993
Pb	Great Britain	Jan 85	A. caliginosa	yes						1580	7400	0.214	Validation	Morgan and Morgan 1993
Pb	Great Britain	Jan 85	L. rubellus	yes						1300	7400	0.176	Validation	Morgan and Morgan 1993
Pb	Great Britain	Sept 84	A. caliginosa	yes						2330	7430	0.314	Validation	Morgan and Morgan 1993
Pb	Great Britain	Sept 84	L. rubellus	yes						890	7430	0.120	Validation	Morgan and Morgan 1993
Pb	Great Britain	s3	L. terrestris	yes		7.1			4460	1312	7689.000	0.171	Validation	Morris and Morgan 1986
PCB-1254	Tennessee	Bear Creek	mix	yes						0.07	0.11	0.636	Validation	Efroymson et al. 1996, Jones
PCB-1254	Tennessee	Bear Creek	mix	yes						0.21	0.34	0.618	Validation	Efroymson et al. 1996, Jones
PCB-1254	Tennessee	Bear Creek	mix	yes						0.08	0.5	0.160	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						0.07	0.01	7.000	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						0.07	0.04	1.750	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						0.91	0.07	13.000	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						0.05	0.08	0.625	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						0.17	0.08	2.125	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						0.09	0.1	0.900	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						0.3	0.14	2.143	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						0.06	0.15	0.400	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						6.3	0.28	22.500	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						0	0.3	0.000	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						1.1	0.33	3.333	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						1.1	0.42	2.619	Validation	Efroymson et al. 1996, Jones
PCB-1260	Tennessee	Bear Creek	mix	yes						0.21	0.5	0.420	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes					5570	0.69	0.57	1.211	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes						10.3	0.75	13.733	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes					3870	0.78	0.84	0.929	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes		5.133	1.97		549.75	1.25	1.18	1.059	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes		6.767	1.86		832.75	1.5	1.38	1.087	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes		6.900	2.32		1362.5	1.42	1.45	0.979	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes		6.667	3.03		3500	1.67	1.8	0.928	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes		6.867	3.16		3422.5	2.72	1.95	1.395	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes		7.000	3		3275	1	1.98	0.505	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes		6.900	6.65		2717.5	0.64	2.13	0.300	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes		6.833	3		1234.5	2.36	2.38	0.992	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes		5.967	1.95		1173	0.84	2.45	0.343	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes		6.633	3.01		3030	1.52	2.48	0.613	Validation	Efroymson et al. 1996, Jones
Se	Tennessee	Bear Creek	mix	yes		6.82			999	5.6	5.1	1.098	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes		6.767	1.86		832.75	31.2	18.2	1.714	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes		5.133	1.97		549.75	54.9	25.15	2.183	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes		5.967	1.95		1173	53.5	27.8	1.924	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes		6.900	2.32		1362.5	32.1	30.63	1.048	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes		6.633	3.01		3030	39.8	40.18	0.991	Validation	Efroymson et al. 1996, Jones

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Zinc	Tennessee	Bear Creek	mix	yes		6.667	3.03		3500	54.1	44.28	1.222	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes		6.833	3		1234.5	58.3	44.8	1.301	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes		6.900	6.65		2717.5	56	47.88	1.170	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes		6.82			3180	331	51.9	6.378	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes		7.64			6850	412	56.4	7.305	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes						262	57.3	4.572	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes		7.000	3		3275	53.8	63.8	0.843	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes						353	65.2	5.414	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes		6.867	3.16		3422.5	66	66.98	0.985	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes						485	73.7	6.581	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes					5570	68.2	83.45	0.817	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes						388	118	3.288	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes					3870	108	190	0.568	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes					40600	86.2	2270	0.038	Validation	Efroymson et al. 1996, Jones
Zinc	Tennessee	Bear Creek	mix	yes					28400	71.9	2270	0.032	Validation	Efroymson et al. 1996, Jones
Zn	Spain	30 m my	A. rosea	yes						250.65	59.04	4.245	Validation	Marino et al. 1992
Zn	Spain	30 m my	L. friendi	yes						501.62	59.04	8.496	Validation	Marino et al. 1992
Zn	Spain	30 m my	A. caliginosa	yes						357.28	59.04	6.051	Validation	Marino et al. 1992
Zn	Spain	30 m my	D. octaedra	yes						208.92	59.04	3.539	Validation	Marino et al. 1992
Zn	Spain	30 m my	A. caliginosa	yes						326.32	59.04	5.527	Validation	Marino et al. 1992
Zn	Spain	30 m my	D. octaedra	yes						226.66	59.04	3.839	Validation	Marino et al. 1992
Zn	Spain	30 m my	L. friendi	yes						529.68	59.04	8.972	Validation	Marino et al. 1992
Zn	Spain	30 m Fb	A. rosea	yes						139.21	63.95	2.177	Validation	Marino et al. 1992
Zn	Spain	30 m Fb	D. octaedra	yes						268.93	63.95	4.205	Validation	Marino et al. 1992
Zn	Spain	30 m Fb	A. caliginosa	yes						440.47	63.95	6.888	Validation	Marino et al. 1992
Zn	Spain	30 m Fb	A. rosea	yes						138.29	63.95	2.162	Validation	Marino et al. 1992
Zn	Spain	30 m Fb	A. caliginosa	yes						414.92	63.95	6.488	Validation	Marino et al. 1992
Zn	Spain	30 m Fb	L. friendi	yes						470.23	63.95	7.353	Validation	Marino et al. 1992
Zn	Spain	30 m Fb	D. madeirensis	yes						203.7	63.95	3.185	Validation	Marino et al. 1992
Zn	Spain	15 m Nv	L. friendi	yes						770.12	64.76	11.892	Validation	Marino et al. 1992
Zn	Spain	15 m Nv	A. caliginosa	yes						285.51	64.76	4.409	Validation	Marino et al. 1992
Zn	Spain	15 m Nv	L. friendi	yes						516.76	64.76	7.980	Validation	Marino et al. 1992
Zn	Spain	15 m Nv	D. octaedra	yes						196.58	64.76	3.036	Validation	Marino et al. 1992
Zn	Spain	15 m Nv	A. caliginosa	yes						401.58	64.76	6.201	Validation	Marino et al. 1992
Zn	Spain	15 m Nv	D. madeirensis	yes						242.28	64.76	3.741	Validation	Marino et al. 1992
Zn	Spain	15 m Nv	A. rosea	yes						172.45	64.76	2.663	Validation	Marino et al. 1992
Zn	Spain	15 m Nv	A. rosea	yes						256.06	64.76	3.954	Validation	Marino et al. 1992
Zn	Spain	15 m Nv	D. madeirensis	yes						175.93	64.76	2.717	Validation	Marino et al. 1992
Zn	Spain	30 m Nv	A. rosea	yes						187.49	65.39	2.867	Validation	Marino et al. 1992
Zn	Spain	30 m Nv	A. caliginosa	yes						481.34	65.39	7.361	Validation	Marino et al. 1992
Zn	Spain	30 m Nv	L. friendi	yes						366.65	65.39	5.607	Validation	Marino et al. 1992
Zn	Spain	30 m Nv	D. madeirensis	yes						135.53	65.39	2.073	Validation	Marino et al. 1992
Zn	Spain	30 m Nv	A. rosea	yes						205.69	65.39	3.146	Validation	Marino et al. 1992
Zn	Spain	30 m Nv	L. friendi	yes						461.12	65.39	7.052	Validation	Marino et al. 1992
Zn	Spain	30 m Nv	A. caliginosa	yes						310.69	65.39	4.751	Validation	Marino et al. 1992
Zn	Spain	15 m my	A. rosea	yes						171.77	69.84	2.459	Validation	Marino et al. 1992
Zn	Spain	15 m my	A. caliginosa	yes						382.81	69.84	5.481	Validation	Marino et al. 1992
Zn	Spain	15 m my	D. madeirensis	yes						222.05	69.84	3.179	Validation	Marino et al. 1992
Zn	Spain	15 m my	L. friendi	yes						466.51	69.84	6.680	Validation	Marino et al. 1992
Zn	Spain	15 m my	D. octaedra	yes						257.02	69.84	3.680	Validation	Marino et al. 1992
Zn	Spain	15 m my	L. friendi	yes						605	69.84	8.663	Validation	Marino et al. 1992
Zn	Spain	15 m my	D. madeirensis	yes						347.92	69.84	4.982	Validation	Marino et al. 1992

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Zn	Spain	15 m my	A. caliginosa	yes						312.61	69.84	4.476	Validation	Marino et al. 1992
Zn	Spain	15 m Fb	L. friendi	yes						585.21	77.14	7.586	Validation	Marino et al. 1992
Zn	Spain	15 m Fb	L. friendi	yes						545.61	77.14	7.073	Validation	Marino et al. 1992
Zn	Spain	15 m Fb	D. madeirensis	yes						249.68	77.14	3.237	Validation	Marino et al. 1992
Zn	Spain	15 m Fb	A. caliginosa	yes						484.98	77.14	6.287	Validation	Marino et al. 1992
Zn	Spain	15 m Fb	D. madeirensis	yes						221.28	77.14	2.869	Validation	Marino et al. 1992
Zn	Spain	15 m Fb	A. rosea	yes						300.55	77.14	3.896	Validation	Marino et al. 1992
Zn	Spain	15 m Fb	A. rosea	yes						157.72	77.14	2.045	Validation	Marino et al. 1992
Zn	Spain	15 m Fb	A. caliginosa	yes						431.08	77.14	5.588	Validation	Marino et al. 1992
Zn	Spain	15 m Fb	D. octaedra	yes						260.96	77.14	3.383	Validation	Marino et al. 1992
Zn	Spain	3 m Fb	D. madeirensis	yes						302.62	100.21	3.020	Validation	Marino et al. 1992
Zn	Spain	3 m Fb	D. octaedra	yes						196.34	100.21	1.959	Validation	Marino et al. 1992
Zn	Spain	3 m Fb	D. octaedra	yes						319.82	100.21	3.191	Validation	Marino et al. 1992
Zn	Spain	3 m Fb	L. friendi	yes						639.88	100.21	6.385	Validation	Marino et al. 1992
Zn	Spain	3 m Fb	A. caliginosa	yes						374.34	100.21	3.736	Validation	Marino et al. 1992
Zn	Spain	3 m Fb	D. madeirensis	yes						672.92	100.21	6.715	Validation	Marino et al. 1992
Zn	Spain	3 m Fb	L. friendi	yes						577.36	100.21	5.762	Validation	Marino et al. 1992
Zn	Spain	3 m Fb	A. caliginosa	yes						327.83	100.21	3.271	Validation	Marino et al. 1992
Zn	Spain	3 m my	D. madeirensis	yes						252.58	100.74	2.507	Validation	Marino et al. 1992
Zn	Spain	3 m my	A. caliginosa	yes						406.56	100.74	4.036	Validation	Marino et al. 1992
Zn	Spain	3 m my	D. madeirensis	yes						254.43	100.74	2.526	Validation	Marino et al. 1992
Zn	Spain	3 m my	D. octaedra	yes						245.05	100.74	2.432	Validation	Marino et al. 1992
Zn	Spain	3 m my	L. friendi	yes						556.55	100.74	5.525	Validation	Marino et al. 1992
Zn	Spain	3 m my	L. friendi	yes						599.56	100.74	5.952	Validation	Marino et al. 1992
Zn	Spain	3 m my	D. octaedra	yes						323.34	100.74	3.210	Validation	Marino et al. 1992
Zn	Spain	3 m my	A. caliginosa	yes						326.41	100.74	3.240	Validation	Marino et al. 1992
Zn	Spain	3 m Nv	D. octaedra	yes						403.13	131.85	3.057	Validation	Marino et al. 1992
Zn	Spain	3 m Nv	L. friendi	yes						548.79	131.85	4.162	Validation	Marino et al. 1992
Zn	Spain	3 m Nv	D. madeirensis	yes						271.73	131.85	2.061	Validation	Marino et al. 1992
Zn	Spain	3 m Nv	A. caliginosa	yes						263.77	131.85	2.001	Validation	Marino et al. 1992
Zn	Spain	3 m Nv	L. friendi	yes						850.13	131.85	6.448	Validation	Marino et al. 1992
Zn	Spain	3 m Nv	A. caliginosa	yes						307.4	131.85	2.331	Validation	Marino et al. 1992
Zn	Great Britain	Cwmystwyth	L. rubellus	yes		4.31			168	465.7	163	2.857	Validation	Morgan and Morgan 1990
Zn	Great Britain	Campus	D. rubida	yes		5.65			13030	114	172	0.663	Validation	Ireland 1975
Zn	Great Britain	Dinas Powys	L. rubellus	yes		5.19			1791	426.1	193	2.208	Validation	Morgan and Morgan 1990
Zn	Great Britain	Jan 85	L. rubellus	yes						2420	1790	1.352	Validation	Morgan and Morgan 1993
Zn	Great Britain	Jan 85	A. caliginosa	yes						1500	1790	0.838	Validation	Morgan and Morgan 1993
Zn	Great Britain	Sept 84	A. caliginosa	yes						1750	1890	0.926	Validation	Morgan and Morgan 1993
Zn	Great Britain	Sept 84	L. rubellus	yes						1420	1890	0.751	Validation	Morgan and Morgan 1993
Zn	Great Britain	Ystwyth	D. rubida	yes		4.35			332	584	1975	0.296	Validation	Ireland 1975
Zn	Great Britain	Dec 84	A. caliginosa	yes						1400	1980	0.707	Validation	Morgan and Morgan 1993
Zn	Great Britain	Dec 84	L. rubellus	yes						1800	1980	0.909	Validation	Morgan and Morgan 1993
Zn	Great Britain	Apr 85	A. caliginosa	yes						1450	1990	0.729	Validation	Morgan and Morgan 1993
Zn	Great Britain	July 84	L. rubellus	yes						1790	1990	0.899	Validation	Morgan and Morgan 1993
Zn	Great Britain	July 84	A. caliginosa	yes						1240	1990	0.623	Validation	Morgan and Morgan 1993
Zn	Great Britain	Apr 85	L. rubellus	yes						2020	1990	1.015	Validation	Morgan and Morgan 1993
Zn	Great Britain	Aug 84	L. rubellus	yes						2090	2020	1.035	Validation	Morgan and Morgan 1993
Zn	Great Britain	Llantrisant	L. rubellus	yes		6.75			5083	2257.3	2034	1.110	Validation	Morgan and Morgan 1990
Zn	Great Britain	Feb 85	L. rubellus	yes						2200	2140	1.028	Validation	Morgan and Morgan 1993
Zn	Great Britain	Feb 85	A. caliginosa	yes						1610	2140	0.752	Validation	Morgan and Morgan 1993
Zn	Great Britain	April 84	A. caliginosa	yes						1760	2250	0.782	Validation	Morgan and Morgan 1993
Zn	Great Britain	April 84	L. rubellus	yes						2250	2250	1.000	Validation	Morgan and Morgan 1993

Analyte	Study Location	Sample Location	Species	Depurated	Soil Texture	pH	% OM	CEC	Soil Ca mg/kg dry wt	Worm Conc mg/kg dry wt	Soil Conc mg/kg dry wt	Calculated Uptake Factor	Portion of dataset	Reference
Zn	Great Britain	June 84	A. caliginosa	yes						1890	2360	0.801	Validation	Morgan and Morgan 1993
Zn	Great Britain	June 84	L. rubellus	yes						1570	2360	0.665	Validation	Morgan and Morgan 1993
Zn	Great Britain	Mar 85	L. rubellus	yes						1630	2380	0.685	Validation	Morgan and Morgan 1993
Zn	Great Britain	Mar 85	A. caliginosa	yes						1610	2380	0.676	Validation	Morgan and Morgan 1993
Zn	Great Britain	May 84	A. caliginosa	yes						1680	2470	0.680	Validation	Morgan and Morgan 1993
Zn	Great Britain	May 84	L. rubellus	yes						2010	2470	0.814	Validation	Morgan and Morgan 1993
Zn	Great Britain	Oct 84	A. caliginosa	yes						1800	2560	0.703	Validation	Morgan and Morgan 1993
Zn	Great Britain	Oct 84	L. rubellus	yes						1710	2560	0.668	Validation	Morgan and Morgan 1993
Zn	Great Britain	Nov 84	A. caliginosa	yes						1510	2740	0.551	Validation	Morgan and Morgan 1993
Zn	Great Britain	Nov 84	L. rubellus	yes						1750	2740	0.639	Validation	Morgan and Morgan 1993
Zn	Great Britain	Ecton	L. rubellus	yes		7.1			31277	2932.4	10976	0.267	Validation	Morgan and Morgan 1990
Zn	Great Britain	Draethen	L. rubellus	yes		6.49			26421	2411.4	16374	0.147	Validation	Morgan and Morgan 1990

APPENDIX C

SUPPLEMENTAL EARTHWORM BIOACCUMULATION DATA FROM THE OAK RIDGE RESERVATION

Table C.1. Summary Statistics for ORR Soil-Earthworm Contaminant UFs

Analyte	N	Mean	Standard Deviation	Minimum	Median	90th Percentile	Maximum	Mean of Natural Log-transformed values	Standard Deviation of Natural Log-transformed values	Distribution
Aluminum	20	0.053	0.046	0.008	0.043	0.118	0.197	-3.238	0.792	lognormal
Americium-241	4	1.970	1.203	0.800	1.717	3.644	3.644	0.536	0.623	lognormal
Barium	20	0.088	0.070	0.005	0.091	0.160	0.310	-2.809	1.042	lognormal
Beryllium	12	0.250	0.497	0.000	0.045	1.182	1.429	-2.660	1.850	lognormal
CS-137	5	0.005	0.007	0.000	0.001	0.015	0.015	-6.074	1.942	normal
Calcium	20	0.689	0.703	0.023	0.421	1.896	2.513	-0.954	1.281	lognormal
Cobalt	17	0.139	0.087	0.031	0.122	0.291	0.321	-2.184	0.707	lognormal
Curium-244	4	0.587	0.324	0.152	0.655	0.886	0.886	-0.721	0.803	normal
Iron	20	0.038	0.025	0.006	0.036	0.078	0.100	-3.488	0.706	lognormal
K-40	6	0.139	0.098	0.056	0.091	0.269	0.269	-2.174	0.685	lognormal
Lithium	12	0.083	0.084	0.008	0.046	0.217	0.253	-3.044	1.182	lognormal
Magnesium	20	0.200	0.138	0.019	0.169	0.425	0.539	-1.896	0.887	lognormal
Molybdenum	4	1.014	1.075	0.057	0.953	2.091	2.091	-0.916	1.846	normal
Plutonium-239/40	1	2.500	2.500	2.500	2.500			0.916		uniform
Potassium	20	2.725	2.325	0.107	1.746	5.964	8.372	0.508	1.211	lognormal
Silver	10	4.527	6.411	0.001	2.045	15.338	19.500	-1.086	3.696	normal
Sodium	19	20.976	31.753	0.146	4.322	64.503	122.388	1.890	1.734	lognormal
Strontium	4	0.117	0.123	0.015	0.087	0.278	0.278	-2.752	1.375	normal
Uranium	2	0.033	0.042	0.003	0.033	0.063	0.063	-4.234	2.085	uniform
Vanadium	6	0.039	0.035	0.000	0.042	0.088	0.088	-2.888	0.374	normal

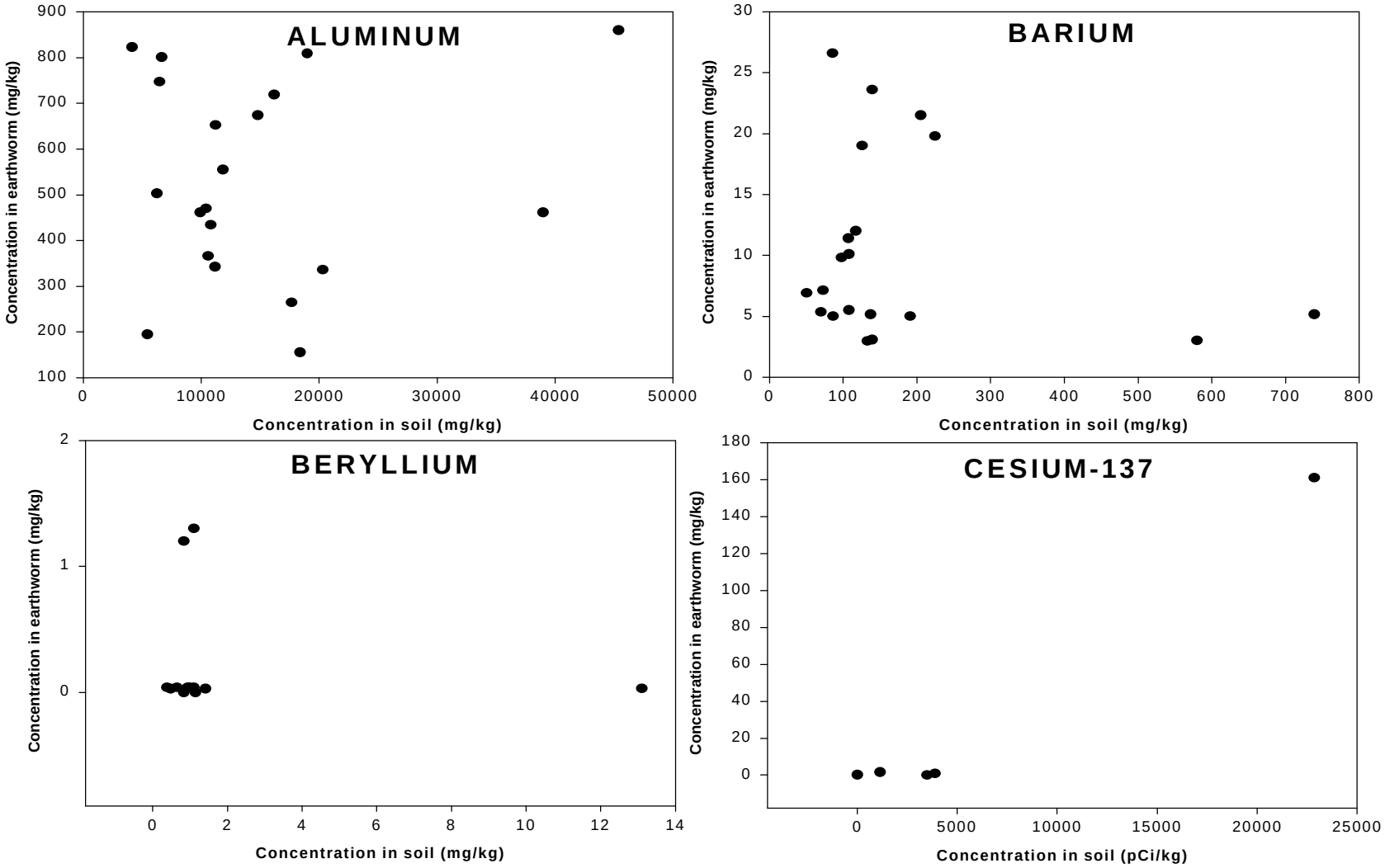

Fig. C-1. Scatterplot of concentration of Al, Ba, Be, and Cs-137 in soil vs that in earthworms from the Oak Ridge Reservation.

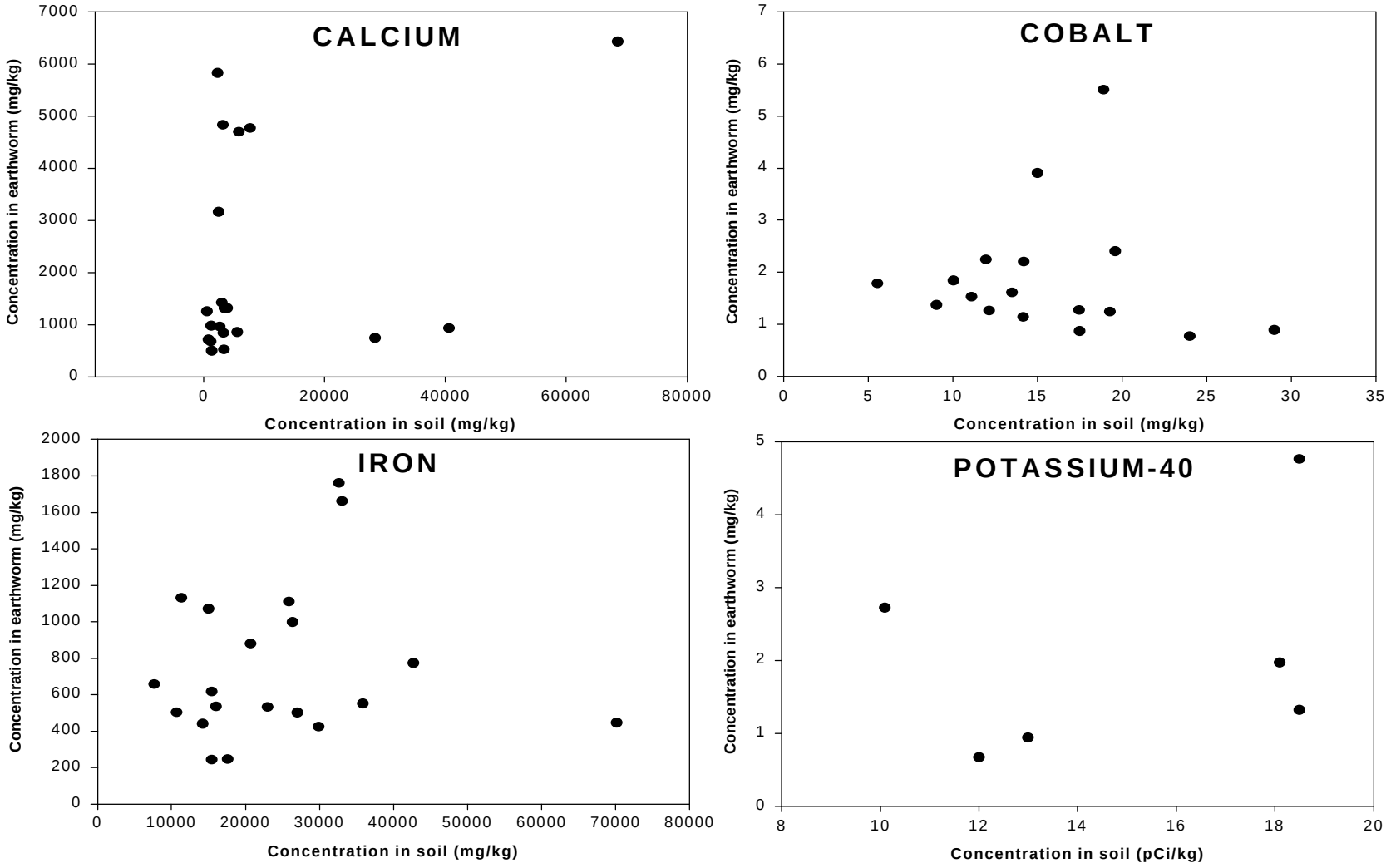

Fig. C-2. Scatterplot of concentration of Ca, Co, Fe, and K-40 in soil vs that in earthworms from the Oak Ridge Reservation.

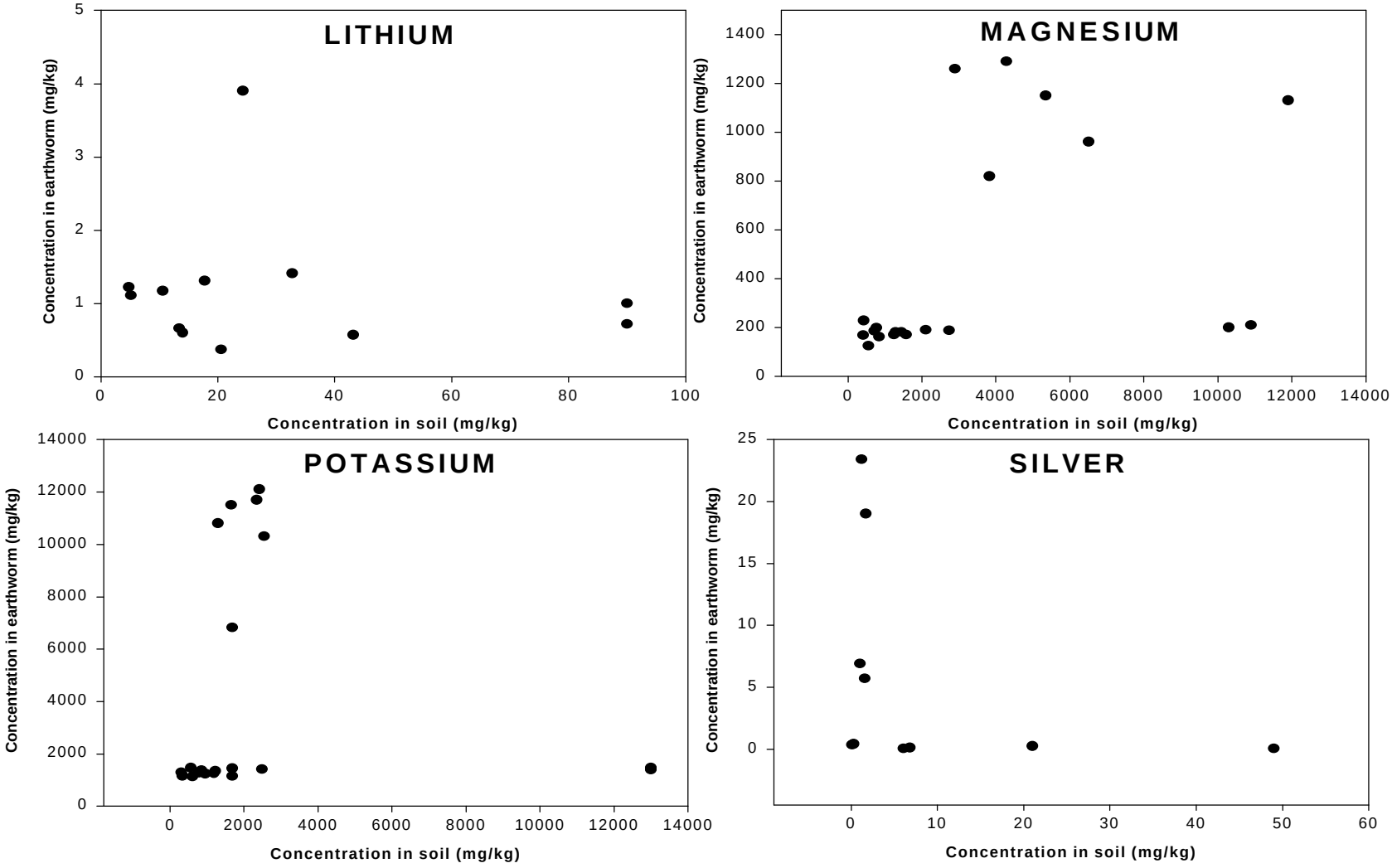

Fig. C-3. Scatterplot of concentration of Li, Mg, K, and Ag in soil vs that in earthworms from the Oak Ridge Reservation.

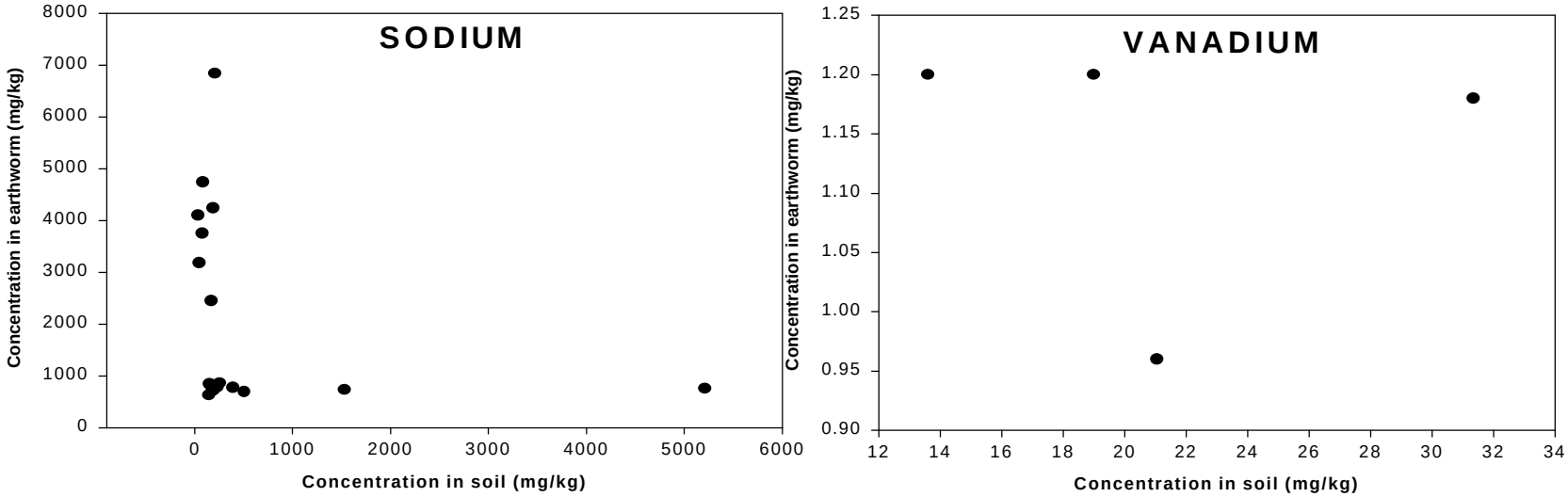

Fig. C-4. Scatterplot of concentration of Na and V in soil vs that in earthworms from the Oak Ridge Reservation.

APPENDIX D

PROCEDURE FOR CALCULATION OF PREDICTION LIMITS FOR ESTIMATES GENERATED BY THE SIMPLE REGRESSION MODELS

Prediction limits for estimates generated by the simple regression models presented in Table 12 may be calculated using the following equation (Dowdy and Wearden 1983):

$$Prediction\ Limit = \hat{y} \pm t_{\alpha=0.05,\ df=n-2} * RMSE * \sqrt{1 + \frac{1}{n} + \frac{(x^* - \bar{x})^2}{Sxx}}$$

$\hat{y}$	=	ln-transformed concentration of analyte in earthworm tissue estimated using regression models from Table 12 (except for Hg, where model from Table 4 should be used).
$t_{\alpha=0.05,\ df=n-2}$	=	t-statistic for 95% one-tailed limits or 90% two-tailed intervals with n-2 degrees of freedom. (Presented in Table D-1).
n	=	Sample size for regression model. (Presented in Table D-1).
RMSE	=	Root mean square error for regression model. (Presented in Table D-1).
x^*	=	ln-transformed soil concentration for which earthworm concentrations are being estimated. (Site specific).
$\bar{x}$	=	Mean soil concentration from regression model. (Presented in Table D-1).
Sxx	=	Variance of soil concentrations from regression model. Sxx $= \sum x^2 - \sum x /n$. (Presented in Table D-1).

The procedure for calculating an upper 95% prediction limit for an estimate ($\hat{y}_{UPL}$) is as follows:

1. Use regression model from Table 12 (except for Hg, where model from Table 4 should be used) and estimate the ln-transformed concentration of analyte in earthworm tissue ($\hat{y}$) from the ln-transformed soil concentration of the analyte of concern (x^*).

2. Obtain values for t, n, RMSE, $\bar{x}$, and Sxx from Table D-1.

3. Apply the values from step 2 along with x^* to the equation outlined above and add the product to $\hat{y}$ to generate the upper 95% prediction limit for $\hat{y}$ ($\hat{y}_{UPL}$).

4. $\hat{y}_{UPL}$ as calculated by the above equation is ln-transformed and must be back-transformed. Back-transform $\hat{y}_{UPL}$ as follows: $e^{\hat{y}UPL}$, where e = 2.7182818.

A lower 95% prediction limit ($\hat{y}_{LPL}$) can be calculated by subtracting the product from step 3 from $\hat{y}$, then back transforming the result. The 90% prediction interval (PI) is calculated if both the UPL and LPL are calculated. In application, 95% of all estimates are expected to fall below or above the UPL and LPL, respectively, and 90% of all estimates are expected to fall between the UPL and LPL.

Table D.1. Values for estimating upper and lower prediction limits for estimates generated by simple regression models. All models based on the combined model and validation datasets (Table 12) unless otherwise noted.

analyte	n	$\sum x$	$\bar{x}$	$\sum x^2$	Root Mean Square Error (RMSE)	Sxx	t statistic ($\alpha = 0.05$, df = n-2)
As	53	88.6408	1.6725	199.4832	1.20809	-144.4852	1.6747
Cd	226	85.3433	0.3776	1021.8551	1.17138	-27.7063	1.6517
Cu	197	651.3173	3.3062	2446.5991	0.68365	-2140.9524	1.6527
Hg[a]	15	-24.6095	-1.6406	120.5212	0.81925	-32.340418	1.7709
Mn	36	246.2632	6.8406	1702.0671	0.68132	-1637.3193	1.6690
Pb	245	1218.6284	4.9740	7463.2269	1.66271	-6030.9876	1.6511
Se[b]	13	7.1182	0.5476	7.4796	0.48529	-3.3222	1.7959
Zn	244	1285.0656	5.2667	7702.9505	0.71928	-6736.4371	1.6512
PCB	31	4.0882	0.1319	175.3277	1.16604	5.1166	1.6991
TCDD	19	-148.0857	-7.7940	1273.0813	0.81043	-1087.1733	1.7396

[a] Values from regression model from Table 4 because combined data resulted in a non-significant regression fit (Table 12).

[b] Values from regression model with single outlying value excluded.

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